01d. Adapter (Optional) (Alternate)	LITE-ON TECHNOLOGY CORP	ADLX45YLC3D, 4X20M26256, PA-1450-30XX (where X = A-Z, 0-9, or - or blank)	Input: 100-240Vac, 50-60Hz, 1.3A Output: 20Vdc, 2.25A / 15Vdc, 3A / 9Vdc, 2A / 5Vdc, 2A	UL 60950-1:2014, UL 62368-1:2014, IEC 60950-1:2005 + A1:2009 + A2:2013, IEC 62368-1:2014, IEC 62368-1:2018	UL , UL , CB by Nemko, CB by UL
01e. Adapter (Optional) (Alternate)	Interchangeable	Interchangeabl e	Output: DC 5V/2A or 3A, 9V/2A or 3A, or 15V/3.0A or 20V/2.25A	UL 62368-1:2014, IEC 60950-1:2005 + A1:2009 + A2:2013, IEC 62368-1:2014, IEC 62368-1:2018	UL , CB by NCB
02. Enclosure	--	--	See Enclosure 4-01 for detailed dimension, and see below for detailed materials.	--	-- , --
02-01. Enclosure Material for Top Cover	LG CHEM LTD	GN-5001RFD, LUPOY GN-5151RF(#) (#) – May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X, XR404E, XR404-G, XR404-P and LUMILOY GN2108FI.	V-0, min.1.0 mm thick, RTI 60 degree C	UL 94: 2013 UL 746C: 2018	UL , --
02-01a. Enclosure Material for Top Cover (Alternate)	LG CHEM (TIANJIN) ENGINEERING PLASTICS CO LTD	GN-5001RFD, LUPOY GN-5151RF(#)(#) – May be followed by optional suffiz letter from A-Z, except F.	V-0, min.1.0 mm thick, RTI 60 degree C	UL 94: 2013 UL 746C: 2018	UL , --

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02-01b. Enclosure Material for Top Cover (Alternate)	LG CHEM POLAND SP Z OO	GN-5001RFD, LUPOY GN-5151RF(#) (#) – May be followed by optional suffix letter from A-Z incl., except F, and except Grades AF302G, HT700B, XR401B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X.	V-0, min.1.0 mm thick, RTI 60 degree C	UL 94: 2013 UL 746C: 2018	UL , --
02-01c. Enclosure Material for Top Cover (Alternate)	MITSUBISHI ENGINEERING-PLASTICS CORP	TMB1615++ - Suffix optional, exceptions: The following cannot be used as optional suffixes: "A" for 1501, 1502, 1511, 1521 & 2502, "N" for NXG5050, NXG5030, NXG5501, & CGF-(v)(u),"S1" for F20-54, "R" for grade MB2211, "V" for grades S-2000+(f1), S-2001+(f1), S-2003+(f1).	Minimum V-0, thickness 1.0mm minimum, RTI 85 degree C	UL 94: 2013 UL 746C: 2018	UL , --
02-01d. Enclosure Material for Top Cover (Alternate)	LG CHEM LTD	LUPOY GN-2403F(#) (#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, LI912W, AF303G, AF303S, XR404T, XR407D,	Minimum V-0, thickness 0.8mm minimum, RTI 80 degree C	UL 94: 2013 UL 746C: 2018	UL , --

		XR407E, HF380X, XR404E, XR404-G, XR404-P and LUMILOY GN2108FI.			
02-01e. Enclosure Material for Top Cover (Alternate)	LG Chem (Guangzhou) Engineering Plastics Co Ltd	LUPOY GN-2403F(#) (#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades AF302G, HT700B, XR401B, LI912A, AF303G, AF303S.	Minimum V-0, thickness 0.8mm minimum, RTI 80 degree C	UL 94: 2013 UL 746C: 2018	UL , --
02-01f. Enclosure Material for Top Cover (Alternate)	--	--	Aluminum, Alloy of Aluminum, thickness 0.8mm minimum	--	-- , --
02-02. Enclosure Material for LCD Bezel	MITSUBISHI ENGINEERING-PLASTICS CORP	TMB1615++ - Suffix optional, exceptions: The following cannot be used as optional suffixes: "A" for 1501, 1502, 1511, 1521 & 2502, "N" for NXG5050, NXG5030, NXG5501, & CGF-(v)(u),"S1" for F20-54, "R" for grade MB2211, "V" for grades S-2000+(f1), S-2001+(f1), S-2003+(f1).	Minimum V-0, thickness 1.0mm minimum, RTI 85 degree C	UL 94: 2013 UL 746C: 2018	UL , --
02-02a. Enclosure Material for LCD Bezel (Alternate)	MITSUBISHI ENGINEERING-PLASTICS CORP	MB1700+; + - Suffix optional, exceptions: The following cannot be used as optional suffixes: "A"	Minimum V-0, thickness 0.75mm minimum, 60 degree C.	UL 94: 2013 UL 746C: 2018	UL , --

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		for 1501, 1502, 1511, 1521 & 2502, "N" for NXG5050, NXG5030, NXG5501, & CGF-(v)(u),"S1" for F20-54, "R" for grade MB2211, "V" for grades S-2000+(f1), S-2001+(f1), S-2003+(f1).			
02-03. Enclosure Material Top Side around Keyboard	LG CHEM LTD	GN-5001RFD, LUPOY GN-5151RF(#) (#) – May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X, XR404E, XR404-G, XR404-P and LUMILOY GN2108FI.	V-0, min.1.0 mm thick, RTI 60 degree C	UL 94: 2013 UL 746C: 2018	UL , --
02-03a. Enclosure Material Top Side around Keyboard (Alternate)	LG CHEM (TIANJIN) ENGINEERING PLASTICS CO LTD	GN-5001RFD, LUPOY GN-5151RF(#) (#) – May be followed by optional suffiz letter from A-Z, except F.	V-0, min.1.0 mm thick, RTI 60 degree C	UL 94: 2013 UL 746C: 2018	UL , --
02-03b. Enclosure Material Top Side around Keyboard (Alternate)	LG CHEM POLAND SP Z OO	GN-5001RFD, LUPOY GN-5151RF(#) (#) – May be followed by optional suffix letter from A-Z incl., except F, and except Grades AF302G, HT700B, XR401B,	V-0, min.1.0 mm thick, RTI 60 degree C	UL 94: 2013 UL 746C: 2018	UL , --

		LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X.			
02-03c. Enclosure Material Top Side around Keyboard (Alternate)	MITSUBISHI ENGINEERING-PLASTICS CORP	TMB1615++ - Suffix optional, exceptions: The following cannot be used as optional suffixes: "A" for 1501, 1502, 1511, 1521 & 2502, "N" for NXG5050, NXG5030, NXG5501, & CGF-(v)(u),"S1" for F20-54, "R" for grade MB2211, "V" for grades S-2000+(f1), S-2001+(f1), S-2003+(f1).	Minimum V-0, thickness 1.0mm minimum, RTI 85 degree C	UL 94: 2013 UL 746C: 2018	UL , --
02-04a. Enclosure Material for Bottom Case (Alternate)	LG CHEM (TIANJIN) ENGINEERING PLASTICS CO LTD	GN-5001RFD, LUPOY GN-5151RF(#) (#) – May be followed by optional suffiz letter from A-Z, except F.	V-0, min.1.0 mm thick, RTI 60 degree C	UL 94: 2013 UL 746C: 2018	UL , --
02-04b. Enclosure Material for Bottom Case (Alternate)	LG CHEM POLAND SP Z OO	GN-5001RFD, LUPOY GN-5151RF(#) (#) – May be followed by optional suffix letter from A-Z incl., except F, and except Grades AF302G, HT700B, XR401B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X.	V-0, min.1.0 mm thick, RTI 60 degree C	UL 94: 2013 UL 746C: 2018	UL , --

02-04c. Enclosure Material for Bottom Case (Alternate)	MITSUBISHI ENGINEERING-PLASTICS CORP The following cannot be used as optional suffixes: "A" for 1501, 1502, 1511, 1521 & 2502, "N" for NXG5050, NXG5030, NXG5501, & CGF-(v)(u),"S1" for F20-54, "R" for grade MB2211, "V" for grades S-2000+(f1), S-2001+(f1), S-2003+(f1).	TMB1615++ - Suffix optional, exceptions: degree C	Minimum V-0, thickness 1.0mm minimum, RTI 85	UL 94: 2013 UL 746C: 2018	UL , --
02-04. Enclosure Material for Bottom Case (Alternate)	LG CHEM LTD	GN-5001RFD, LUPOY GN-5151RF(#) (#) – May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X, XR404E, XR404-G, XR404-P and LUMILOY GN2108FI.	V-0, min.1.0 mm thick, RTI 60 degree C	UL 94: 2013 UL 746C: 2018	UL , --
02-04d. Enclosure Material for Bottom Case (Alternate)	SABIC JAPAN L L C	DC0041PD(B5), ER010459(B5) (B5) – Represents color code 7M1D145 NOTE – Material designation may be followed by a color nomenclature consisting of	Minimum V-0, thickness 0.8mm minimum, RTI 80 degree C	UL 94: 2013 UL 746C: 2018	UL , --

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		either an alpha/numeric or numeric/alpha combination.			
02-04e. Enclosure Material for Bottom Case (Alternate)	SABIC INNOVATIVE PLASTICS US L L C	DC0041PQ(B 7) (B7) – May be replaced by the color code 7M1A9220 or 7M1D145 denoting a BK pigment. NOTE – Material designation may be followed by a color nomenclature consisting of either an alpha/numeric or numeric/alpha combination.	Minimum V-0, thickness 0.8mm minimum, RTI 80 degree C	UL 94: 2013 UL 746C: 2018	UL , --
02-06. Metallized Coating	Interchangeable	Interchangeab l e	Applied for bottom case material, see item 02 above.	UL 746C: 2018	UL , --
02-07. Mesh for Bottom Openings	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1860, KLX FRPC-1860B, KLX FRPC-1860-83, KLX FRPC-1860-83B, KLX FRPC-1860-1, KLX FRPC-1860-NTC, KLX FRPC-1860B-NTC, KLX FRPC-1860B-3, KLX FRPC-1870B-K, KLX FRPC-1860B-HY, KLX FRPC-1860-HY, KLX FRPC-1860B-K, KLX FRPC-1860-K, KLX FRPC-1860W	VTM-0 minimum, 0.125mm thickness minimum.	UL 94: 2013 UL 746C: 2018	UL , --

02-07a. Mesh for Bottom Openings (Alternate)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117, DFR117ECO A, DFR117ECO B, DFR117ECO C	VTM-0 minimum, 0.05mm thickness minimum.	UL 94: 2013 UL 746C: 2018	UL , --
02-08. Adhesive for Bottom Mesh	SDK	DST-5	100 degree C	--	-- , Tested in appliance
02-09. Mylar for Keyboard	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR1365, TS-FR1363, TS-FR1360, TS-FR1362, TS-FR160Y, TS-FR1370F, TS-FR1370, TS-FR1383, TS-FR1370-32, TS-FR1383-13	VTM-0 minimum, 0.05mm thickness minimum.	UL 94: 2013 UL 746C: 2018	UL , --
02-09a. Mylar for Keyboard (Alternate)	Interchangeable	Interchangeable	Min. VTM-0 or V-0.	UL 94: 2013 UL 746C: 2018	UL , --
03. LCD Panel	CHONGQING BOE OPTOELECTRONICS TECHNOLOGY CO LTD (BOE)	**140***-*** where "*" could be any letter of "0" to "9" or "A" to "Z" or blank, denotes only non-safety related parts or name difference.	14.0 inch, TFT Type (LED backlight).	UL 60950-1:2014, UL 62368-1:2014, IEC 62368-1:2014	UL , CB by UL
03a. LCD Panel (Alternate)	HEFEI BOE OPTOELECTRONICS TECHNOLOGY CO LTD (BOE)	**140***-*** (where * could be any letter of “0" to “9" or “A" to “Z" or blank, denotes only non-safety related parts or name difference.)	14.0 inch, TFT Type (LED backlight).	UL 62368-1:2014, IEC 62368-1:2014	UL , CB by UL
03b. LCD Panel (Alternate)	INFOVISION ELECTRONICS (KUNSHAN) CO LTD (IVO)	X140NVyy, M140NWxx, P140NWxx, R140NWxx, M140NVxxyy, R140NVxx	14.0 inch, TFT Type (LED backlight).	UL 62368-1:2014, IEC 62368-1:2014	UL , CB by UL

		(where x can be 0-9, A-Z, blank or symbol "-"; y can be 0-9, A-Z, blank or symbol "-" for marketing purpose and no impact any critical safety components and constructions)			
03c. LCD Panel (Alternate)	AU OPTRONICS CORP	B140HATZZZZ , B140HAKZZZZ , B140HABZZZZ (Where Z may be any alphanumeric character or a dot or blank)	14.0 inch, TFT Type (LED backlight).	UL 62368-1:2014, IEC 62368-1:2014	UL , CB by UL
03d. LCD Panel (Alternate)	AU OPTRONICS CORP	B140HANZZZZ B140HTNZZZZ B140HTTZZZZ B140HTVZZZZ B140XTBZZZZ B140XTKZZZZ B140XTNZZZZ B140XTTZZZZ (Where Z may be any alphanumeric character or a dot or blank)	14.0 inch, TFT Type (LED backlight).	UL 62368-1:2014, IEC 62368-1:2014	UL , CB by UL
03e. LCD Panel (Alternate)	Innolux Corp	N140FGE-LXX, N140FGE-EXX, N140HGE-EXX, N140HCE-EXX, N140HCA-EXX, N140HCN-EXX,	14.0 inch, TFT Type (LED backlight).	UL 62368-1:2014, IEC 62368-1:2014	UL , CB by UL

		N140HCE-GXX, N140HCA-GXX, N140HGA-EXX, N140HCG-GXX, N140HCN-GXX, N140HCR-GXX, P140ZKA-BXX, N140HCP-EXX, N140HCG-EXX, N140JCN-GXX, N140HCQ-GXX (X=0-9, A-Z or blank, X for marketing purpose and no impact safety related critical components and constructions)			
03f. LCD Panel (Alternate)	LG DISPLAY CO LTD	LP140WF9, LP140WFA	14.0 inch, TFT Type (LED backlight).	UL 62368-1:2014, IEC 60950-1:2005 + A1:2009 + A2:2013, IEC 62368-1:2014	UL , CB by TUV
03g. LCD Panel (Alternate)	Interchangeable	Interchangeable	14.0 inch, TFT Type (LED backlight).	UL 60950-1:2014, UL 62368-1:2014, IEC 60950-1:2005 + A1:2009 + A2:2013, IEC 62368-1:2014	UL , CB by NCB
04. DC Fan	DELTA ELECTRONICS INC	ND75C94-21G08, ND75C94 XXXXXXXXX X X, X stands for A-Z, 0-9, - or blank	5Vdc, 0.5A, 3.8CFM minimum.	UL 507:2020, EN 62368-1:2014/A11:2017	UL , TUV RH
04a. DC Fan (Alternate)	Asia Vital Components Co.,Ltd.	BAPA0906R5H Y007, BAPA0906Z5H V, “Z” can be A, B, C, G, R,	5Vdc, 0.5A, 4.93CFM minimum.	UL 507:2020, EN 62368-1:2014/A11:2017	UL , TUV SUD

		S, or T; "V" can be ABCD where A, B, C, D may be A-Z, 0-9, "-" or blank			
04c. DC Fan (Alternate)	Interchangeable	Interchangeable	5Vdc, Max. 0.5A, 3.80CFM minimum.	UL 507:2020, EN 62368-1:2014/A11:2017	UL , UV, VDE or CB by National Certification Body
05. Battery Pack	SIMPLO TECHNOLOGY CO LTD (Lenovo)	L21M3PG1	11.25Vdc, 3735mAh / 42Wh, 3635mAh / 40.9Wh	UL 62368-1:2019, UL 2054:2011, IEC 62133-2:2017, IEC 62368-1:2018, EN IEC 62368-1:2020+A11:2020	UL , CB by UL
05a. Battery Pack (Alternate)	CELXPERT ENERGY CORP (Lenovo)	L21C3PG1	11.25Vdc, Typical 3735mAh / 42Wh, Rated 3635mAh / 40.9Wh	UL 62368-1:2019, UL 2054:2011, IEC 62133-2:2017, IEC 62368-1:2018, EN IEC 62368-1:2020+A11:2020	UL , CB by UL
05b. Battery Pack (Alternate)	Zhejiang Sunwoda Electronic Co., Ltd. (Lenovo)	L21D3PG1	DC 11.25V, Rated:3635mAh, 40.9Wh/ Typical: 3735mAh, 42Wh	UL 62368-1:2014, UL 2054:2011, IEC 62133-2:2017, IEC 62368-1: 2014, EN 62368-1:2014 / A11: 2017	UL , CB by TUV-Rh
05c. Battery Pack (Alternate)	LG ENERGY SOLUTION, LTD. (Lenovo)	L21L3PG1	11.4Vdc, Typ.: 3685mAh/42Wh, Rated: 3590mAh/40.9Wh	UL 62368-1:2019, UL 2054:2011, IEC 62133-2:2017, IEC 62368-1:2018, EN IEC 62368-1:2020+A11:2020	UL , CB by UL
05d. Battery Pack (Alternate)	SIMPLO TECHNOLOGY CO LTD (Lenovo)	L21M3PG2	11.52Vdc, 4948mAh or 57Wh, 4862mAh or 56Wh	UL 62368-1:2019, UL 2054:2011, IEC 62133-2:2017, IEC 62368-1:2018, EN IEC 62368-1:2020+A11:2020	UL , CB by UL

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05e. Battery Pack (Alternate)	CELXPERT ENERGY CORP (Lenovo)	L21C3PG2	11.52Vdc, 4948mAh / 57Wh, 4862mAh / 56Wh	UL 62368-1:2019, UL 2054:2011, IEC 62133-2:2017, IEC 62368-1:2018, EN IEC 62368-1:2020+A11:2020	UL , CB by UL
06. Mother Board	--	--	See below	--	-- , --
06-01. Thermal Module	--	--	Copper or Aluminum or Alloy of Copper or Steel or Alloy of Aluminum or Alloy of metal. See Enclosure ID 4-04 for detailed dimension.	--	-- , --
06-02. Protector IC for USB Type C Port	TEXAS INSTRUMENTS INCORPORATED	TPS66021, TPS66020- may be preceded by 'P', may be followed by additional characters that do not affect the safety features of the device	Input Voltage: 4.9 - 5.5 Vdc Output Continuous Rating: 1.5 - 3.0 A Output Current Limit: 1.87 - 3.7 A	UL 2367:2021, IEC 62368-1: 2014	UL , CB by UL (US-34369-UL)
06-02a. Protector IC for USB Type C Port (Alternate)	TEXAS INSTRUMENTS INCORPORATED	SN1810003, SN1810004, SN1905001, SN1905002, SN1905003, SN1905004, SN1905005, SN1905006, SN1905007, SN1905008, SN1908005, SN2001021, SN2001022, SN2001023, SN2001024, SN2001025, SN2001026, SN2001027, SN2001028, SN2001029, SN2006001, SN2006002, SN2006003, TPS65993, and	Input Voltage: 4.9 to 5.5 Vdc;Output Continuous Rating:PA_VBUS, PB_VBUS: 0.9 to 3.0 A;PA_CC1, PA_CC2, PB_CC1, PB_CC2*: 0.315 A;*Only 1 path within a pair are active at one timeOutput Current Limit:PA_VBUS, PB_VBUS: 1.36A to 3.78 A;PA_CC1, PA_CC2, PB_CC1, PB_CC2: 0.47 to 0.66 A;Maximum Ambient: 65 degree	UL 2367:2021, IEC 62368-1: 2014	UL , CB by UL US-38687-UL)

		TPS65994, may be followed by additional characters that do not affect the safety features of the device	C;SN2001025, SN2006001, SN2006002, SN2006003 and TPS65994 with alternate Insulated Housing:Maximum Ambient: 85 degree C		
06-02b. Protector IC for USB Type C Port (Alternate)	TEXAS INSTRUMENTS INCORPORATED	SN1810003, SN1810004, SN1905001, SN1905002, SN1905003, SN1905004, SN1905005, SN1905006, SN1905007, SN1905008, SN1908005, SN2001021, SN2001022, SN2001023, SN2001024, SN2001025, SN2001026, SN2001027, SN2001028, SN2001029, TPS65993, and TPS65994, may be followed by additional characters that do not affect the safety features of the device	Input Voltage: 4.9 - 5.5 Vdc Output Continuous Rating: PA_VBUS, PB_VBUS: 0.9 to 3.0A PA_CC1, PA_CC2, PB_CC1, PB_CC2*: 0.315A Output Current Limit: PA_VBUS, PB_VBUS: 1.36A to 3.78A PA_CC1, PA_CC2, PB_CC1, PB_CC2: 0.47 to 0.66A	UL 2367:2021, IEC 62368-1: 2014	UL , CB by UL US-38687-UL)
06-03. Protector IC for USB 3.0 and HDMI Ports	Global Mixed-mode Technology Inc.	G517FX1X2X3 X4,X1=1, 2, 3, or 4,X2=T1, TB, TO,TP, U5, P8 or TM,X3=1,2 or 3,X4=U or D	Input Voltage: 2.7 to 5.5 Vdc;Output Continuous Rating: 2.1 A;Output Current Limit: 2.2 to 3.0 A;Maximum Ambient: 70 degree C	UL 2367:2011, IEC 60950-1:2005 + A1:2009 + A2:2013	UL , CB by TUV (JPTUV-077390)
06-03a. Protector IC for USB 3.0 and HDMI Ports (Alternate)	SILERGY CORP	SY6288- followed by E1, E2, E3, E4, E5 or E6, followed by AAC followed by F1, F2, F3 or F4, followed by	Input voltage: 2.5-5.5Vdc, Continuous current: 3.0A for Models SY6288; followed by E1; E2; E3 or E4; followed by AAC; 2.5 A for Models SY6288; followed	UL 2367:2011, IEC 60950-1:2005 + A1:2009 + A2:2013, IEC 62368-1: 2014	UL , CB by UL (DK-86927-A1- UL, DK-67571- M1-UL)

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		ABC	by E5 or E6; followed by AAC; 0.3 to 3.0 A for Models SY6288; followed by F1; F2; F3; or F4; followed by ABC		
06-03b. Protector IC for USB 3.0 and HDMI Ports (Alternate)	Silergy Technology (Taiwan) Inc	SYV687ZDEC , SY6288-follow by G or H, follow by AB, follow by C, SY6287-follow by B, B1, C, C1, E, F, Y or Z, follow by AB, DE or CA, follow by C;, SYVL27, SY20807- follow by B, B1, C or C1, follow by AB, DE or CA, follow by C	Models SY6287, follow by B, B1, C, C1, E or F, follow by AB, DE or CA, follow by C; SYVL27, follow by B, B1, C or C1, follow by AB, DE or CA, follow by C; SY20807, follow by B, B1, C or C1, follow by AB, DE or CA, follow by C; SY6288, follow by G or H, follow by AB, follow by C; SYV687ZDEC: Input Voltage: 2.5 to 5.5 Vdc Output Continuous Rating: Max. 2.0 A Current Limit Rating: 0.575A to 4.43 A. Models SY6287, follow by Y or Z, follow by AB, DE or CA, follow by C; Input Voltage: 2.5 to 5.5 Vdc Output Continuous Rating: Max. 2.2 A Current Limit Rating: 0.575A to 4.43 A.	UL 2367:2021, IEC 62368-1: 2014	UL , CB by UL (DK-73538-A2- UL)
06-03c. Protector IC for USB 3.0 and HDMI Ports (Alternate)	ANPEC ELECTRONICS CORP	APL3553- followed by A, B, C, D, E, F, G, H, I or J followed by B, C or X, followed by I, followed by -, followed by TR, followed by G, APL3555- followed by A, B, C or D, followed by B, followed by I, followed by -,	Input Voltage: 2.7 to 5.5 Vdc Output Continuous Rating: 2.0 A for Models APL3555 followed by A or B, followed by B, followed by I, followed by -, followed by TR, followed by G; Models APL3553 followed by A, B, E, F, I or J, followed by B, C	UL 2367:2011, IEC 60950-1:2005 + A1:2009 + A2:2013, IEC 62368-1: 2014	UL , CB by UL (DK-87208-M2- UL, DK-59231- A2-UL)

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		followed by TR, followed by G	or X, followed by I, followed by -, followed by TR, followed by G. 1.0 A for Models APL3555 followed by C or D, followed by B, followed by I, followed by -, followed by TR, followed by G; Models APL3553 followed by C, D, G or H, followed by B, C or X, followed by I, followed by -, followed by TR, followed by G;		
06-03d. Protector IC for USB 3.0 and HDMI Ports (Alternate)	Richtek Technology Corp.	RT9742..G., The first dot "." can be A to Z represent output current/ enable function. The second dot "." can be N or blank represent discharge function. The third dot "." can be J5F/ J5/ V represent package type.	2.7V to 6V, 3A/2A/1.5A/1A/0.5A, 70mΩ/55mΩ (typ.) N-MOSFET Switch; SELV Class III	UL 2367:2011, IEC 60950-1:2005 + A1:2009 + A2:2013, IEC 62368-1: 2014	UL , CB by Nemko (NO109777, NO87949)
06-03e. Protector IC for USB 3.0 and HDMI Ports (Alternate)	DIODES INCORPORATED	PI5USB25wwx yyyEz Series(where ww is 44 or 46; x is blank, A or H; yyy is ZH or ZHD for the packaging type; E is Pb-free; and z is blank or X;Cat. Nos. PI5USB2544ZHE, PI5USB2544ZHEX, PI5USB2544AZHE, PI5USB2544AZHEX, PI5USB2544ZHDE,	Input Voltage: 4.5 to 5.5 Vdc;Output Continuous Rating: 0.03 to 2.5 A;Current Limit Rating: 0.1 to 3.18 A;Maximum Ambient: 85 degree C	UL 2367:2011, IEC 60950-1:2005 + A1:2009 + A2:2013, IEC 62368-1: 2014	UL , CB by UL (US-38136-UL, US-24707-M2- UL)

		PI5USB2544ZHDEX, PI5USB2544AZHDE, PI5USB2544AZHDEX, PI5USB2546ZHE, PI5USB2546ZHEX, PI5USB2546AZHE, PI5USB2546HZHE, PI5USB2546AZHEX, PI5USB2546ZHDE, PI5USB2546ZHDEX, PI5USB2546AZHDE, PI5USB2546AZHDEX, PI5USB2546HZHEX, PI5USB2546HZHDE, PI5USB2546HZHDEX.			
06-03f. Protector IC for USB 3.0 and HDMI Ports (Alternate)	TEXAS INSTRUMENTS INCORPORATED	SN1408009RT E, SN1702001, TPS2543, TPS2544, TPS2547, TPS2546, TPS2545- Additional suffixes after the model number designate the type of integrated circuit package, integrated circuit lead types or other features that are considered not to affect the functionality of the device	Input Voltage: 4.5 to 5.5Vdc; Output Continuous Rating: 2.5A; Output Current Limit: 3.1A	UL 2367:2011, IEC 60950-1:2005 + A1:2009 + A2:2013, IEC 62368-1: 2014	UL , CB by UL (US-35117-UL, US-29689-M1- UL)

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06-03g. Protector IC for USB 3.0 and HDMI Ports (Alternate)	TEXAS INSTRUMENTS INCORPORATED	TPD3S014, TPD3S044, TPS2000, TPS2001, TPS2065-2, TPS2061, TPS2041, TPS2051, TPS2069, TPS2068, TPS2065, TPS2069-2- May be followed by other characters that do not impact the safety feature of the device.	Input Voltage - 4.5 Vdc to 5.5 Vdc Output Continuous Current Rating: TPS2041 - 0.5 A TPS2051 - 0.5 A TPS2061 - 1.0 A TPS2065 - 1.0 A TPS2065-2 - 1.0 A TPS2068 - 1.5 A TPS2069 - 1.5 A TPS2069-2 - 1.5 A TPS2000 - 2.0 A TPS2001 - 2.0 A TPD3S014 - 0.5 A TPD3S044 - 1.5 A Output Current Limit: TPS2041 - 1.05 A TPS2051 - 1.05 A TPS2061 - 1.9 A TPS2065 - 1.9 A TPS2065-2 - 1.96 A TPS2068 - 2.7 A TPS2069 - 2.7 A TPS2069-2 - 2.86 A TPS2000 - 3.6 A TPS2001 - 3.6 A TPD3S014 - 1.05 A TPD3S044 - 2.7 A Ambient = -40 to +85°C	UL 2367:2011, IEC 60950-1:2005 + A1:2009 + A2:2013, IEC 62368-1: 2014	UL , CB by UL (US-34988-UL, US-30345-UL)
06-03h. Protector IC for USB 3.0 and HDMI Ports (Alternate)	ROHM CO LTD	BD82028FVJ, BD82029FVJ, BD82030FVJ, BD82031FVJ, BD82032FVJ, BD82033FVJ, BD82034FVJ, and BD82035FVJ designate the type of integrated circuit package, integrated circuit lead types or other features that are considered not to affect the functionality of the device. Suffix FVJ denotes device Package Type	Input Voltage: -4.5 Vdc to 5.5 Vdc; Model BD82028FVJ: 0.5 A Model BD82029FVJ: 0.5 A Model BD82030FVJ: 1.0 A Model BD82031FVJ: 1.0 A Model BD82032FVJ: 1.5 A Model BD82033FVJ: 1.5 A Model BD82034FVJ: 2.0 A Model BD82035FVJ: 2.0 A Model	UL 2367:2011, IEC 60950-1:2005 + A1:2009 + A2:2013, IEC 62368-1: 2014	UL , CB by UL (JP-21381-UL, JP-12176-UL)

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		TSSOP-B8J.	BD82028FVJ: 1.2 A Model BD82029FVJ: 1.2 A Model BD82030FVJ: 1.8 A Model BD82031FVJ: 1.8 A Model BD82032FVJ: 2.3 A Model BD82033FVJ: 2.3 A Model BD82034FVJ: 2.8 A Model BD82035FVJ: 2.8 A Ambient: -40 °C to 85 °C		
06-03l. Protector IC for USB 3.0 and HDMI Ports (Alternate)	TEXAS INSTRUMENTS INCORPORATED	TPS2552-1, TPS2553, TPS2553-1, TPS2552	Input Voltage: 2.5 to 6.5 Vdc Output Continuous Rating: 1.5A Output Current Limit: 1.7A Maximum Operational Ambient: 60°C	UL 2367:2011, IEC 60950-1:2005 + A1:2009 + A2:2013, IEC 62368-1: 2014	UL , CB by UL (US-34989-UL, US-24603-A1- UL)
06-03j. Protector IC for USB 3.0 and HDMI Ports (Alternate)	Global Mixed-mode Technology Inc.	G517ALX1X2 X 3X4,X1=1 or 2,X2=TP, TB, RB or U5,X3=1, 2 or 3,X4=U or D	Input Voltage: 2.7 to 5.5 Vdc;Output Continuous Rating: 0.1 to 2.15 A;Output Current Limit: 0.2 to 2.75 A;Maximum Ambient: 70 degree C	UL 2367:2011, IEC 60950-1:2005 + A1:2009 + A2:2013	UL , CB by TUV (JPTUV-077390)

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* UL-BR 22.1054

Emissão / ***Issue***
8 de abril de 2022
April 08, 2022

Revisão / *Review*: 7

Validade / ***Expiration***
7 de abril de 2025
April 07, 2025

06-03k. Protector IC for USB 3.0 and HDMI Ports (Alternate)	Guangdong Cellwise Microelectronics Co., Ltd. (CellWise)	CW3042AAAD, CW3042AAAE, HP3048BAAQ, CW3048AAAQ , CW3048BAAQ , CW3046AAAQ	Input Voltage: 4.5 to 5.5 Vdc, Output Continuous Rating: Maximum 2.8 A, Current Limit Rating: Maximum 3.17 A	UL 2367:2011, IEC 60950-1:2005 + A1:2009 + A2:2013, IEC 62368-1: 2014	UL , CB by UL (DK-108822-UL, DK-63696-M1- UL)

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* UL-BR 22.1054

Emissão / ***Issue***
8 de abril de 2022
April 08, 2022

Revisão / *Review*: 7

Validade / ***Expiration***
7 de abril de 2025
April 07, 2025

06-03l. Protector IC for USB 3.0 and HDMI Ports (Alternate	DIODES INC	AP2553, AP2552-maybe followed by A, maybe followed by additional letters and/or numbers., AP2553A, AP2552A-may be followed by additional letters, numbers, and/or a '-'	Input Voltage: 2.7 to 5.5Vdc, Output Continuous Rating: Maximum 2.1 A, Current Limit Rating: Maximum 3.02 A	UL 2367:2021, IEC 60950-1:2005 + A1:2009 + A2:2013, IEC 62368-1: 2014	UL , UL , CB by UL (US-24721-UL, US-34481-UL)

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06-03m. Protector IC for USB 3.0 and HDMI Ports (Alternate)	ON SEMICONDUCTO R	NCP380- followed by H or L; followed by MU or SN; followed by 05, 10, 15, 20, 21 or AJ. Additional suffixes after the model number designate the type of integrated circuit package, integrated circuit lead types or other features that are considered not to affect the functionality of the device.	Input Voltage: - 2.5 Vdc to 5.5 Vdc Output Continuous Rating (unit: A): NCP380xSN05AAT 1G 0.5 NCP380xSN10AAT 1G 1.0 NCP380xSNAJAAT 1G 0.5 - 1.0 NCP380xMU05AAT BG 0.5 NCP380xMU10AAT BG 1.0 NCP380xMU15AAT BG 1.5 NCP380xMU20AAT BG 2.0 NCP380xMU21AAT BG 2.1 NCP380xMUAJAAT BG 0.5 - 2.1 Output Current Limit: NCP380xSN05AAT 1G 0.7 NCP380xSN10AAT 1G 1.4 NCP380xSNAJAAT 1G 0.7 - 1.8 NCP380xMU05AAT BG 0.7 NCP380xMU10AAT BG 1.4 NCP380xMU15AAT BG 2.0 NCP380xMU20AAT BG 2.1 NCP380xMU21AAT BG 2.5 NCP380xMUAJAAT BG 0.7 - 2.5 Where x = L or H	UL 2367:2021, IEC 62368-1: 2014	UL , CB by UL (DK-103788-UL)

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07. PWBs	Interchangeable	Interchangeabl e	V-1 minimum, 105 degree C minimum.	UL 796:2016	UL , --

08. Solid State Drive(Optional)	INTEL CORP	MEM*,SSD* where * can be optional letters or numbers used to identify features such as memory type, size (thickness, width) and identify details not critical to the compliance of the drive.	3.3 Vdc, 5 Vdc, and/or 12 Vdc	UL 60950-1:2014, UL 62368-1:2014, IEC 60950-1:2005 + A1:2009 + A2:2013, IEC 62368-1: 2014	UL , CB by UL

08a. Solid State Drive (Alternate) (Optional)	Interchangeable	Interchangeabl e	3.3 Vdc, 5 Vdc, and/or 12 Vdc	UL 60950-1:2014, UL 62368-1:2014, IEC 60950-1:2005 + A1:2009 + A2:2013, IEC 62368-1: 2014	UL , CB by NCB

09. Speaker (Two provided)	Interchangeable	Interchangeabl e	Each rated 4 ohm, 2.5 Watts maximum.	Test with equipment	-- , --

10. LED Chip (in IR Camera) (Optional)	Liteon OPTP Technology (CZ) Ltd.	LTE-R28206S-NE8, LTE-R28206S-NE8-XX, LTE-R28206S-YE8, LTE-R28206S-YE8-XX (“XX” means different customer numbers)	0.5A, 3Vdc (exempt group)	IEC 62471:2006	-- , IEC 62471:2006 (BE-34640)

10a. LED Chip (in IR Camera) (Optional) (Alternate)	Liteon OPTP Technology (CZ) Ltd.	LTE-R28206S-ME8-XX; LTE-R28206S-ME8; LTE-R28206S-KE8-XX; LTE-R28206S-KE8; LTE-R28206S (“XX” means different customers)	0.5A, 3Vdc (exempt group)	IEC 62471:2006	-- , IEC 62471:2006 (BE-36784)

12. RTC battery	VIC-DAWN ENTERPRISE COLTD	CR2016 (CR2016 Cells may be provided with alphanumeric suffix (j) or (k), (j) may come with an optional single or multiple alphanumeric suffix denoting various insulating tube, ring, or tape. may come with an optionalsingle or multiple alphanumeric suffix denoting various pin, tab, cap or wire termination types)	3Vdc; max. abnormal chargingcurrent 10 mA	UL 1642:2020	UL , UL

12a. RTC battery (Alternate)	JHIH HONG TECHNOLOGY CO LTD	CR2016	3Vdc; max. abnormal charging current 10 mA	UL 1642:2020	UL , UL

12b. RTC battery (Alternate)	DOUBLE BEST CO LTD	CR2016 (j)(k), (j) - These cells may have various insulating tube, ring, or tape, (k) - These cells and batteries may come with an optional single or multiple alphanumeric suffix denoting various pin, tab, cap or wire termination types	3Vdc; max. abnormal charging current 10 mA	UL 1642:2020	UL , UL

12c. RTC battery (Alternate)	MITSUBISHI ELECTRIC HOME APPLIANCE CO LTD	CR2016	3Vdc; max. abnormal charging current 10 mA	UL 1642:2020	UL , UL

12d. RTC battery (Alternate)	MITSUBISHI ELECTRIC HOME APPLIANCE COLTD	CR2016N	3Vdc; max. abnormal charging current 10 mA	UL 1642:2020	UL , UL

12e. RTC battery (Alternate)	MITSUBISHI ELECTRIC CORP	CR2016+, + - The cells may have various insulating tube, ring, or tape.	3Vdc; max. abnormal charging current 10 mA	UL 1642:2020	UL , UL

12f. RTC battery (Alternate)	Panasonic Corporation, Panasonic Corporation Of North America	CR2016*, CR-2016*, * - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging, etc.	3Vdc; max. abnormal charging current 10 mA	UL 1642:2020	UL , UL

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12g. RTC battery (Alternate)	TOHOKU MURATA MANUFACTURING CO., LTD	CR2016A, CR2016*, * - These celles may have various pin, tab, insulating tube, ring and tape.	3Vdc; max. abnormal charging current 10 mA	UL 1642:2020	UL , UL

12h. RTC battery (Alternate)	SONY ELECTRONICS INC	CR2016	3Vdc; max. abnormal charging current 10 mA	UL 1642:2020	UL , UL

12i. RTC battery (Alternate)	Interchangeable	CR2016	3Vdc; max. abnormal charging current 10 mA.	UL 1642:2020	UL , UL

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EN (English)

EU (CE) Declaration of Conformity

Product: ThinkCentre M70q Gen 5
Machine Type: 12TD*******, 12TE*******, 12TF*******, 12TG*******
12TN*******, 12TQ*******, 12TR*******, 12TS*******
(where * can be a series of numbers 0 – 9 and/or letters A-Z)

Name and address of the manufacturer or his authorized representative:

Lenovo PC HK Limited
23/F Lincoln House,
Taikoo Place, 979 King's Road
Quarry Bay, Hong Kong, China

Manufacturer Representative within the EU:

Lenovo (Slovakia), Landererova 12, 811 09 Bratislava, Slovakia
Tel: +421 2 6868 3018

This declaration of conformity is issued under the sole responsibility of the manufacturer.

The products listed above are in conformity with the requirements of the following EU Directives:

- **Directive 2014/53/EU – (Radio Equipment Directive).**
- **Directive 2009/125/EC – (EU EcoDesign Directive).**
- **Council Directive 2011/65/EU - (EU RoHS Directive) as amended by Directive 2015/863/EU.**

The conformity assessment procedure referred to in Article 17.4a of Directive 2014/53/EU has been followed in accordance with Article 3.2:

Notified Body Name/Number: TIMCO Engineering, Inc./ 1177
Issued the EU-type Examination Certificate: E1177/244002

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Standards References

The following harmonized standards and normative documents are those to which the product's conformance is declared:

Radio Equipment Directive (RED)

Article 3.1a: (Health & Safety)	**Article 3.1b:** (EMC)	**Article 3.2:** (Radio Spectrum)
EN 62368-1:2014+A11:2017	EN 55032:2015+A11:2020	EN 300 328 V2.2.2 2019-07[1]
EN 62368-1:2020+A11:2020	EN 55035:2017+A11:2020	EN 301 893 V2.1.1 2017-05[1]
EN IEC 62311:2020	EN IEC 61000-3-2:2019+A1:2021	EN 300 440 V2.2.1 2018-07[1]
	EN 61000-3-3:2013+A2:2021	EN 303 687 V1.1.1 2023-06[2]
	EN 301 489-1 V2.2.3 2019-11	
	EN 301 489-3 V2.3.2 2023-01	
	EN 301 489-17 V3.2.4 2020-09	

1) This standard is valid for all wireless modules.
2) This standard is only valid for AX211NGW wireless module.

RoHS Directive:	**ErP Directive**
EN 50581:2012	EU 2019/1782 ErP
EN IEC 63000:2018	2009/125/EC
	EC/1275/2008
	EN 50564:2011

Signed:_____ Date: May 1, 2024

Brian Killebrew

Title: Director, Corporate Regulatory Compliance, Standards and ISO 9001
Place of issue: Morrisville, North Carolina, USA.

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ANNEX

Wireless modules

Wireless Modules	Module Names
WLAN with Bluetooth1	AX201NGW, RTL8852BE
WLAN with Bluetooth2	AX211NGW

External AC Adapters

Supplier Model Name	Lenovo P/N
ADP-65ME B	SA10J20195
PA-1650-74	SA11B48988
A19-065N2A	SA11B48989
ADP-90ME B	SA11B48990
PA-1900-74	SA11B48991
A22-090P1A	SA11B49023
ADL135SDC3A	SA11B49017
ADL135SLC3A	SA11B49018
ADL135SCC3A	SA11B49019

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Lenovo (Singapore) Pte. Ltd.
151 Lorong Chuan,
#02-01, New Tech Park,
Singapore, 556741
(Tel - 65-6827-1000 & Fax- 65-6827-1100)

EU Declaration of Conformity

For the << TIO24Gen5, A23TIO24 >>
Machine Types: <<12NA-****-**>>
(the * in the model name can be 0 to 9, A to Z, a to z or blank for marketing use only)

We, Lenovo (Singapore) Pte Ltd., declare under sole responsibility that the above products, manufactured for:

Lenovo PC HK Limited.
23/F, Lincoln House, Taikoo Place 979 King's Road,
Quarry Bay, Hong Kong, China

- **Council Directive 2014/35/EU-relating to the making available on the market of electronic equipment designed for use within certain voltage limits.**
- **Council Directive 2014/30/EU relating to electromagnetic compatibility.**
  Council Directive 2009/125/EC ,EU 2019/2021, (EU) 2021/341 , EU 2019/2013 & (EU) 2021/340 establishing a framework for the setting of Ecodesign requirements for Energy-related products.
- **Council Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment as amended by Directive 2015/863/EU.**

Conformity with these Directives has been assessed for this product by demonstrating compliance to the following harmonized standards and/or regulations:

EN55032:2015+A11:2020; EN55035:2017+A11:2020
EN IEC 61000-3-2:2019+A1:2021
EN 61000-3-3:2013+A2:2021

EN IEC 62368-1:2020 + A11:2020, EN 62368-1:2014+A11:2017
EN IEC 63000: 2018.
EN 62087-1:2016
EN 62087-2:2016
EN IEC 62087-7:2019
EN 50564:2011
EU 2019/2021
IEC 60950-1:2005+AMD1:2009+AMD2:2013
EU 2019/1782

Signed. _____ Date: 2023/3/20

Joseph Chua (Executive Director)

European Contact for regulatory topics only:
Lenovo (Slovakia), Landererova 12, 811 09 Bratislava, Slovakia
Tel: +421 2 6868 3018

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 248

Ref. Certif. No

NO125689

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product	LCD Monitor
Name and address of the applicant	TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Name and address of the manufacturer	Lenovo (Beijing) Limited 201-H2-6, Floor 2, Building 2, No.6 Shangdi West Road, Haidian District, Beijing 100085 China
Name and address of the factory	See next page(s)
Note: *When more than one factory,please report on page 2*	☑ Additional Information on Page 2
Ratings and Principal characteristics	20Vdc 4.5A Cl. III.
Trademark /Brand (If any)	Lenovo
Customer's Testing Facility (CTF) Stage used	
Model/Type Ref	A23TIO22**, TIO22Gen5, TIO22Gen5Touch
Additional information(If necessary may also be reported on Page 2)	The symbol '*' in the model name can be A to Z, a to z, 0 to 9, '+', '-', '\', '/' or blank, for marketing use only. ☐ Additional Information on Page 2
A sample of the product was tested and found to be in conformity with	IEC 60950-1:2005, IEC 60950-1:2005/AMD1:2009, IEC 60950-1:2005/AMD2:2013
As shown in the Test Report Ref. No. which forms part of this Certificate	REP005122

This CB Test Certificate is issued by the National Certification Body

Nemko

Philip Pedersen vei 11,
NO-1366 Lysaker, Norway
Date: 10-02-2023

Signature: Okhyun Jeon
Certification department

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Ref. Certif. No

NO125689

TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.
China

TPV Electronics (Fujian) Co., Ltd.
Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, P.R.
China

TPV Electronics (Fujian) Co., Ltd.
Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.
China

L&T Display Technology (Fujian) Ltd.
Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.
China

TPV Display Technology (China) Co., Ltd.
No.106 Jinghai 3 Rd., BDA, Beijing City 100176 P.R.
China

TPV Display Technology (Wuhan) Co. Ltd.
Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,P.R.
China

TPV Display Technology (Beihai) Co., Ltd.
China Electronic Beihai Industry Park, Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi, P.R.
China

TREND SMART CE MEXICO S. DE R.L. DE C.V.
Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana, Baja California, C.P. 22435
Mexico

Envision Indústria de Produtos Eletrônicos Ltda.
Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM
Brazil

TPV TECHNOLOGY (THAILAND) COMPANY LIMITED
No.267 Mu7, Tha Tum Sub- District, Si Maha Pho District, Prachin Buri Province,
Thailand

GeneTouch Corporation
No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012
Taiwan

Fábrica Austral de Productos Eléctricos S.A.
Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur
Argentina

Dixon Technologies (India) Ltd.
EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post, Revenue Vikruthamala, Yerpedu Mandelam, District-Chittoor, Andhra Pradesh, 517526,
India

Additional Information (if necessary)

Nemko

Philip Pedersen vei 11,
NO-1366 Lysaker, Norway
Date: 10-02-2023

Signature: Okhyun Jeon
Certification department

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Ref. Certif. No

NO125690

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product	LCD Monitor
Name and address of the applicant	TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Name and address of the manufacturer	Lenovo (Beijing) Limited 201-H2-6, Floor 2, Building 2, No.6 Shangdi West Road, Haidian District, Beijing 100085 China
Name and address of the factory	See next page(s)
Note: *When more than one factory,please report on page 2*	☑ Additional Information on Page 2
Ratings and Principal characteristics	20Vdc 4.5A Cl. III.
Trademark /Brand (If any)	Lenovo
Customer's Testing Facility (CTF) Stage used	
Model/Type Ref	A23TIO24**, TIO24Gen5, TIO24Gen5Touch
Additional information(If necessary may also be reported on Page 2)	The symbol '*' in the model name can be A to Z, a to z, 0 to 9, '+', '-', '\', '/' or blank, for marketing use only. ☐ Additional Information on Page 2
A sample of the product was tested and found to be in conformity with	IEC 60950-1:2005, IEC 60950-1:2005/AMD1:2009, IEC 60950-1:2005/AMD2:2013
As shown in the Test Report Ref. No. which forms part of this Certificate	REP005122

This CB Test Certificate is issued by the National Certification Body

Nemko

Philip Pedersen vei 11,
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Date: 10-02-2023

Signature: Okhyun Jeon
Certification department

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NO125690

TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.
China

TPV Electronics (Fujian) Co., Ltd.
Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, P.R.
China

TPV Electronics (Fujian) Co., Ltd.
Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.
China

L&T Display Technology (Fujian) Ltd.
Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.
China

TPV Display Technology (China) Co., Ltd.
No.106 Jinghai 3 Rd., BDA, Beijing City 100176 P.R.
China

TPV Display Technology (Wuhan) Co. Ltd.
Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,P.R.
China

TPV Display Technology (Beihai) Co., Ltd.
China Electronic Beihai Industry Park, Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi, P.R.
China

TREND SMART CE MEXICO S. DE R.L. DE C.V.
Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana, Baja California, C.P. 22435
Mexico

Envision Indústria de Produtos Eletrônicos Ltda.
Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM
Brazil

TPV TECHNOLOGY (THAILAND) COMPANY LIMITED
No.267 Mu7, Tha Tum Sub- District, Si Maha Pho District, Prachin Buri Province,
Thailand

GeneTouch Corporation
No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012
Taiwan

Fábrica Austral de Productos Eléctricos S.A.
Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur
Argentina

Dixon Technologies (India) Ltd.
EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post, Revenue Vikruthamala, Yerpedu Mandelam, District-Chittoor, Andhra Pradesh, 517526,
India

Additional Information (if necessary)

Nemko

Philip Pedersen vei 11,
NO-1366 Lysaker, Norway
Date: 10-02-2023

Signature: Okhyun Jeon
Certification department

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TEST REPORT IEC 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Number. ..... :	REP005122
Date of issue ..... :	2023-02-09
Total number of pages ..... :	71 pages and refer to page 4 for attachment
Name of Testing Laboratory preparing the Report..... :	Nemko Shanghai Ltd. Shenzhen Branch
Applicant's name ..... :	TPV Electronics (Fujian) Co., Ltd.
Address ..... :	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China
Test specification:	
Standard ..... :	IEC 60950-1:2005, AMD1:2009, AMD2:2013
Test procedure ..... :	CB Scheme
Non-standard test method……..:	N/A
Test Report Form No. ..... :	IEC60950_1G
Test Report Form(s) Originator .... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2019-07-02

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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

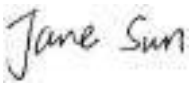
General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

This Test Report, when bearing the Nemko name and logo is only valid when issued by a Nemko laboratory, or by a laboratory having special agreement with Nemko.

Test item description .....:	LCD Monitor
Trade Mark .....:	Lenovo
Manufacturer .....:	Lenovo (Beijing) Limited 201-H2-6, Floor 2, Building 2, No.6 Shangdi West Road, Haidian District, Beijing, 100085 China
Model/Type reference .....:	1) A23TIO22**, TIO22Gen5, TIO22Gen5Touch 2) A23TIO24**, TIO24Gen5, TIO24Gen5Touch (The symbol '*' in the model name can be A to Z, a to z, 0 to 9, '+', '–', '\', '/' or blank, for marketing use only.)
Ratings .....:	Input: 20 V ⎓ 4.5A

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Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☐ **CB Testing Laboratory:**	Nemko Shanghai Ltd. Shenzhen Branch	
Testing location/ address .....:	Unit CD, Floor 2 & Floor 10, Tower 2, Kefa Road 8#, Hi-Technology Park, Nanshan District, Shenzhen, Guangdong, China	
Tested by (name, function, signature).....:	Eason Yang (Project handler)	
Approved by (name, function, signature) ..:	Jane Sun (Verificator)	
☐ **Testing procedure: CTF Stage 1:**		
Testing location/ address .....:		
Tested by (name, function, signature).....:		
Approved by (name, function, signature) ..:		
☐ **Testing procedure: CTF Stage 2:**		
Testing location/ address .....:		
Tested by (name + signature).....:		
Witnessed by (name, function, signature) .:		
Approved by (name, function, signature) ..:		
☐ **Testing procedure: CTF Stage 3:**		
☐ **Testing procedure: CTF Stage 4:**		
Testing location/ address .....:		
Tested by (name, function, signature).....:		
Witnessed by (name, function, signature) .:		
Approved by (name, function, signature) ..:		
Supervised by (name, function, signature) :		

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List of Attachments (including a total number of pages in each attachment):

1. Main Test report (71 pages)

2. Photos (19 pages)

3. Chinese differences (8 pages)

4. Singapore differences (3 pages)

5. Korean differences (1 page)

6. Israeli differences (7 pages)

7. Power adapter CB test report with IEC 62368-1:2014 (2nd Edition); and/or EN62368-1:2014; A11:2017, refer to table 1.5.1 for detail.

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Summary of testing:

Tests performed (name of test and test clause):

Clause	Test(s)
1.6	Input Current Test
1.7	Marking and instructions
2.2	SELV circuits
2.5	Limited power sources
4.1	Stability
4.2	Mechanical strength
4.5	Thermal requirements
4.6	Openings in enclosure
5.3	Abnormal operating and fault conditions

Load condition: Refer to general product information.

Testing location:

See page 3

1.7.2.1 Language of safety markings/instructions.	Instructions and equipment marking related to safety is applied and checked in English and German, the instruction and marking should be checked again when marketed in the countries using other language.
2.5 Limited Power Source.	The main board of monitor has complied with LPS (after F101). The output of main board complying with subclause 2.5 LPS requirement and the components mounted on V-1 or better PCB according to sub-clause 4.7.2.2. Refer to sub-clause 2.5 for detail.
4.2 wall or ceiling mounted equipment	VESA compatible wall mounting kit 100mm x 100mm, 4 piece screw M4 x 10mm used.

Wall Mounting (Optional)

Refer to the instructions that come with the base mounting kit. To convert your LCD display from a desk-mounted to a wall-mounted display, do the following:

Step 1: Verify that the Power button is turned Off, then disconnect the power cord.

Step 2: Lay the LCD display face down on a towel or blanket.

Step 3: Remove the base and stand from the monitor.

Step 4: Attach the mounting bracket from the VESA compatible wall mounting kit (100mm x100mm distance), the type of VESA mounting screw is M4 x 10 mm.

Step 5: Attach the LCD display to the wall, and follow the instructions in the wall-mounting kit.

For use only with UL Listed Wall Mount Bracket with minimum weight/load: 8kg

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Summary of compliance with National Differences

The sample(s) tested compliance with the requirements of IEC 60950-1: 2005 (2nd Edition); Am1: 2009; Am2: 2013.
At the time of issuing this test report, not all countries are listed for IEC 60950-1:2005 (2nd Edition); Am1:2009; Am2:2013. Therefore this test report includes national differences for IEC 60950-1:2005(2nd Edition) Am1:2009 and IEC 60950-1: 2005 (2nd Edition).
All national differences listed in the IECEE Online CB Bulletin are covered by the Common Modifications, Special National Conditions, National Deviations, and the National Requirements noted above except for the countries which are documented in Attachment.
National Differences attached to this test report:
list from IEC 60950-1, 2nd edition: China and Singapore.
list from IEC 60950-1: 2005 (2nd Edition); Am1: 2009: Korea.
list from IEC 60950-1: 2005 (2nd Edition); Am2: 2013: Israeli.

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Copy of marking plates:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.















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Calibration	All instruments used in the tests given in this test report are calibrated and traceable to national or international standards. Further information about traceability will be given on request.
Measurement uncertainty	Measurement uncertainties are calculated for all instruments and instrument set-ups given in this report. Calculations are based on the principles given in the standard EA-4/02 (Dec. 1999), IEC Guide 115:2007 and other relevant internal Nemko-procedures. Further information about measurement uncertainties will be given on request.
Evaluation of results	If not explicitly stated otherwise in the standard, the test is passed if the measured value is equal to or below (above) the limit line, regardless of the measurement uncertainty. If the measured value is above (below) the limit line, the test is not passed - ref IEC Guide 115:2007. The instrumentation accuracy is within limits agreed by IECEE-CTL.

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Test item particulars..... :	
Equipment mobility……..:	[X] movable [] hand-held [] transportable [] stationary [] for building-in [] direct plug-in
Connection to the mains……:	[] pluggable equipment [] type A [] type B [] permanent connection [] detachable power supply cord [] non-detachable power supply cord [X] not directly connected to the mains
Operating condition……..:	[X] continuous [] rated operating / resting time:
Access location ……:	[X] operator accessible [] restricted access location
Over voltage category (OVC) ……:	[] OVC I [] OVC II [] OVC III [] OVC IV [X] other: Supplied by AC/DC adapter
Mains supply tolerance (%) or absolute mains supply values ……:	N/A
Tested for IT power systems ……:	[] Yes [X] No
IT testing, phase-phase voltage (V) ……:	N/A
Class of equipment ……..:	[] Class I [] Class II [X] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) ……:	N/A
Pollution degree (PD) ……..:	[] PD 1 [X] PD 2 [] PD 3
IP protection class ……...:	IPX0
Altitude during operation (m) ……:	≤5000m
Altitude of test laboratory (m) ……..:	< 2000m
Mass of equipment (kg) ..... :	For model: A23TIO22**, TIO22Gen5, TIO22Gen5Touch 5.7 kg with base only not include PC, base 2.3kg Dimensions: Horizontal position of the unit: Approx.490mm x 195mm x max.510mm(min.418mm) with Base Vertical position of the unit: Approx.335mm x 195mm x max.610mm(min.505mm) with Base The base: Approx.265mm x 195mm x 415mm For model: A23TIO24**, TIO24Gen5, TIO24Gen5Touch 6.28 kg with base only not include PC, base 2.3g Dimensions: Horizontal position of the unit: Approx.540mm x 195mm x max.545mm(min.418mm) with Base Vertical position of the unit: Approx.350mm x 195mm x max.635mm(min.553mm) with Base The base: Approx.265mm x 195mm x 415mm
Possible test case verdicts:	

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- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item .....:	2022-12-12
Date(s) of performance of tests .....:	2022-12-12 to 2023-01-06

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General remarks: "(see attachment #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report. **Throughout this report a ☐ comma / ☒ point is used as the decimal separator.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☒ **Yes** ☐ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	
1. TPV Electronics (Fujian) Co., Ltd.	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China
2. TPV Electronics (Fujian) Co., Ltd.	Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, P.R.China
3. TPV Electronics (Fujian) Co., Ltd.	Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.China
4. L&T Display Technology (Fujian) Ltd	Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.China
5. TPV Display Technology (China) Co., Ltd	No.106 Jinghai 3 Rd., BDA, Beijing City 100176 P.R. China
6. TPV Display Technology (Wuhan) Co., Ltd	Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,P.R.China
7. TPV Display Technology (Beihai) Co.,Ltd.	China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi,P.R.China
8. TREND SMART CE MEXICO S. DE R.L. DE C.V.	Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana, Baja California, C.P. 22435 Mexico
9. Envision Indústria de Produtos Eletrônicos Ltda.	Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM, Brasil
10. TPV TECHNOLOGY (THAILAND) COMPANY LIMITED	No.267 Mu7, Tha Tum Sub- District, Si Maha Pho District,Prachin Buri Province, Thailand
11. GeneTouch Corporation	No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012, Taiwan
12. Fábrica Austral de Productos Eléctricos S.A.	Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur, Argentina
13. Dixon Technologies (India) Ltd.	EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post, Revenue Vikruthamala, Yerpedu Mandelam, DistrictChittoor, Andhra Pradesh, 517526 India

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General product information:

The models are an LCD monitor intended for general office use with following features:

1. The unit is configured with LCD panel (with LED backlight)
2. External approved adapter used, which was evaluated 5000m and maximum ambient temperature 40℃ . The output of external approved adapter complied with SELV circuit, but not evaluated according to LPS, therefore LPS test was evaluated for input of main board and LCD panel in this report.
3. Main boards 715GD726 and 715GD745 with HDMI, DisplayPort and USB 3.0 upstream ports, which is embedded with DC/DC converter circuit.
4. Extend board for connecting to tiny PC with DC outlet, DisplayPort and USB 3.0 ports. The tiny PC is supplied by approved adapter too, and the unit under test was tested with tiny PC to simulate normal working condition of LCD monitor. But requirements of tiny PC related to this standard were not evaluated in this report by the request of client.
5. The internal metal chassis is considered as fire enclosure and internal plastic enclosure for extend board connecting to Tiny PC is considered as fire enclosure.
6. The external plastic enclosure is regarded as decorative part.
7. Digital camera on top of LCD monitor (optional).
8. Touch screen (optional).
9. Stand base (optional)

Model difference:

Model name	Mainboard	Panel
A23TIO22**, TIO22Gen5, TIO22Gen5Touch	715GD726	21.5”
A23TIO24**, TIO24Gen5, TIO24Gen5Touch	715GD745	23.8”

Load condition: maximum brightness, maximum contrast, full white screen; speakers were loaded with 1KHz sinusoidal signal and turned to maximum volume; each USB 3.0 port was loaded 5V/0.9A; tiny PC (which is mounted in rear storage of LCD monitor) turned to maximum loading condition by client’s specified software.

Under DP mode represent the worst condition for all tests, if not specified.

Additional information (requested by manufacturer):
The manufacturer declared that the product also fulfilled of the requirements of SANS 60950-1:2014 (Edition 2.2)/IEC 60950-1:2013 (Edition 2.2)

Maximum recommended ambient (Tmra): 40℃

Circuit characteristics: The equipment contains Secondary circuits (SELV).

1.1.2 – Additional requirements:

Exposure to extreme temperatures, excessive dust, moisture or vibration; to flammable gases; to corrosive or explosive atmospheres:

This equipment is intended to operate in a ”normal” environment (Offices and homes).

Electromedical equipment connected to the patient:

This equipment is not an electromedical equipment intended to be physically connected to a patient.

Equipment used in vehicles, ships or aircrafts, in tropical countries, or at elevations > 2000m:
This equipment is intended to operate in a "normal" environment (Offices and homes) and is intended to

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be operated under altitude up to 5000m, so the clearance is multiplied by the altitude correction factor (1.48 linear interpolation used), specified in table A.2 of IEC 60664-1.

Abbreviations used in the report:

- normal conditions	**N.C.**	- single fault conditions	**S.F.C**
- functional insulation	**OP**	- basic insulation	**BI**
- double insulation	**DI**	- supplementary insulation	**SI**
- between parts of opposite polarity	**BOP**	- reinforced insulation	**RI**

Indicate used abbreviations (if any)

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	**GENERAL**		—
1.5	**Components**		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component standard. Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.	P
1.5.3	Thermal controls	No thermal controls.	N/A
1.5.4	Transformers	No isolating transformer used.	N/A
1.5.5	Interconnecting cables	Class III equipment.	N/A
1.5.6	Capacitors bridging insulation	No such parts	N/A
1.5.7	Resistors bridging insulation	No such parts	N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems	Class III equipment.	N/A
1.5.9	Surge suppressors	No such parts	N/A
1.5.9.1	General	See below.	—
1.5.9.2	Protection of VDRs	See below	—
1.5.9.3	Bridging of functional insulation by a VDR	No such parts	N/A
1.5.9.4	Bridging of basic insulation by a VDR	No such parts	N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No such parts.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6	**Power interface**		P
1.6.1	AC power distribution systems	DC supplied	N/A
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	The equipment is not hand-held.	N/A
1.6.4	Neutral conductor	Class III equipment	N/A

1.7	**Marking and instructions**		P
1.7.1	Power rating and identification markings	The required marking is located on the outside surface of the equipment.	P
1.7.1.1	Power rating marking	See below	P
	Multiple mains supply connections.....:	Only one mains supply connections.	N/A
	Rated voltage(s) or voltage range(s) (V) ..... :	20 V ⎓	P
	Symbol for nature of supply, for d.c. only ..... :	IEC 60417, symbol No. 5031, is used.	P
	Rated frequency or rated frequency range (Hz) ... :	DC supplied	N/A
	Rated current (mA or A) ..... :	4.5A	—
1.7.1.2	Identification markings	See below.	P
	Manufacturer's name or trade-mark or identification mark ..... :	Lenovo	P
	Model identification or type reference ..... :	See page 2	—
	Symbol for Class II equipment only ..... :	Class III equipment	N/A
	Other markings and symbols ..... :	The additional marking does not give rise to misunderstandings.	P
1.7.2	Safety instructions and marking	Refer below	—
1.7.2.1	General	Refer below	—
1.7.2.2	Disconnect devices	No such parts	N/A
1.7.2.3	Overcurrent protective device	No such parts	N/A
1.7.2.4	IT power distribution systems	Class III equipment	N/A
1.7.2.5	Operator access with a tool	Class III equipment	N/A
1.7.2.6	Ozone	The equipment does not produce Ozone.	N/A
1.7.3	Short duty cycles	The equipment is intended for continuous operation.	N/A
1.7.4	Supply voltage adjustment ..... :	No voltage selector.	N/A
	Methods and means of adjustment; reference to installation instructions ..... :		—

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.5	Power outlets on the equipment ..... :	No standard power outlet.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) ..... :	Fuse located in mainboard, marked: F101:T4AL 250V	P
1.7.7	Wiring terminals	Refer below.	—
1.7.7.1	Protective earthing and bonding terminals ..... :	Class III equipment	N/A
1.7.7.2	Terminals for a.c. mains supply conductors	Class III equipment	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	Class III equipment	N/A
1.7.8	Controls and indicators	Refer below.	—
1.7.8.1	Identification, location and marking ..... :	There is no safety control.	N/A
1.7.8.2	Colours ..... :	For functional indication a LED lights when the equipment is operating.	P
1.7.8.3	Symbols according to IEC 60417 ..... :	The standby switch is marked with the symbol " ⏻ " (IEC 60417-1 No. 5009).	P
1.7.8.4	Markings using figures ..... :	No figures used	N/A
1.7.9	Isolation of multiple power sources ..... :	Class III equipment	N/A
1.7.10	Thermostats and other regulating devices ..... :	Class III equipment	N/A
1.7.11	Durability	The marking withstands required tests.	P
1.7.12	Removable parts	No marking is placed on removable parts.	N/A
1.7.13	Replaceable batteries ..... :	No replaceable batteries in the equipment.	N/A
	Language(s) .....:		—
1.7.14	Equipment for restricted access locations ..... :	Equipment not intended for installation in RAL.	N/A

2	**PROTECTION FROM HAZARDS**		N/A
2.1	Protection from electric shock and energy hazards		—
2.1.1	Protection in operator access areas	Supplied by certified AC/DC adapter with SELV	—
2.1.1.1	Access to energized parts	Refer below:	N/A
	Test by inspection ..... :		N/A
	Test with test finger (Figure 2A) ..... :	Complied.	—
	Test with test pin (Figure 2B) ..... :	Complied.	—
	Test with test probe (Figure 2C) ..... :	Complied.	—
2.1.1.2	Battery compartments	No TNV circuits in the equipment.	N/A
2.1.1.3	Access to ELV wiring	Class III equipment	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)		N/A
2.1.1.4	Access to hazardous voltage circuit wiring	Class III equipment	N/A
2.1.1.5	Energy hazards .....:	Supplied by certified AC/DC adapter with SELV. No energy hazard in operator access area.	N/A
2.1.1.6	Manual controls	No shafts of knobs etc. at ELV or hazardous voltage or TNV.	N/A
2.1.1.7	Discharge of capacitors in equipment	Class III equipment, SELV circuit only.	N/A
	Measured voltage (V); time-constant (s).....:		—
2.1.1.8	Energy hazards – d.c. mains supply	Not connected to DC mains supply.	N/A
	a) Capacitor connected to the d.c. mains supply .. :		N/A
	b) Internal battery connected to the d.c. mains supply .....:		N/A
2.1.1.9	Audio amplifiers .....:		N/A
2.1.2	Protection in service access areas	Class III equipment, no hazardous bare parts inside.	N/A
2.1.3	Protection in restricted access locations	Equipment not intended for installation in RAL.	N/A

2.2	**SELV circuits**		P
2.2.1	General requirements	See below	P
2.2.2	Voltages under normal conditions (V) ..... :	(See appended table 2.2)	P
2.2.3	Voltages under fault conditions (V) ..... :		N/A
2.2.4	Connection of SELV circuits to other circuits .....:	SELV circuits are only connected to other SELV circuits	P

2.3	**TNV circuits**		N/A
2.3.1	Limits	No TNV circuits.	N/A
	Type of TNV circuits ..... :		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions ..... :		N/A
2.3.3	Separation from hazardous voltages		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Insulation employed ..... :		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed ..... :		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	**Limited current circuits**		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		—
	Frequency (Hz) ..... :		—
	Measured current (mA) ..... :		—
	Measured voltage (V) ..... :		—
	Measured circuit capacitance (nF or µF) ..... :		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	**Limited power sources**		P
	a) Inherently limited output	(see appended table 2.5)	P
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		N/A
	Use of integrated circuit (IC) current limiters		N/A
	d) Overcurrent protective device limited output	(see appended table 2.5)	P
	Max. output voltage (V), max. output current (A), max. apparent power (VA) ..... :		—
	Current rating of overcurrent protective device (A) .:	(see appended table 1.5.1)	—
2.6	**Provisions for earthing and bonding**		N/A
2.6.1	Protective earthing	Class III equipment, SELV circuit only.	N/A
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		—
2.6.3.1	General		—
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
2.6.3.3	Size of protective bonding conductors		—
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Protective current rating (A), cross-sectional area (mm^2), AWG..... :		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)..... :		N/A
2.6.3.5	Colour of insulation ..... :		N/A
2.6.4	Terminals		—
2.6.4.1	General		—
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type, nominal thread diameter (mm)..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment	No interconnection of equipment.	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance	No risk of corrosion.	N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A

2.7	**Overcurrent and earth fault protection in primary circuits**		N/A
2.7.1	Basic requirements	Class III equipment, SELV circuit only.	N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not simulated in 5.3.7		—
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices ..... :		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel ..... :		N/A

2.8	**Safety interlocks**		N/A
2.8.1	General principles	No safety interlocks.	N/A
2.8.2	Protection requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) ..... :		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A
2.9	**Electrical insulation**		N/A
2.9.1	Properties of insulating materials	The equipment is regarded as Class III. No electrical insulation is required for safety purpose.	N/A
2.9.2	Humidity conditioning		N/A
	Relative humidity (%), temperature (°C) ..... :		—
2.9.3	Grade of insulation		N/A
2.9.4	Separation from hazardous voltages		N/A
	Method(s) used ..... :		—
2.10	**Clearances, creepage distances and distances through insulation**		N/A
2.10.1	General	Class III equipment, SELV circuit only.	N/A
2.10.1.1	Frequency .....:		N/A
2.10.1.2	Pollution degrees .....:		N/A
2.10.1.3	Reduced values for functional insulation		N/A
2.10.1.4	Intervening unconnected conductive parts		—
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage		N/A
2.10.2.1	General		N/A
2.10.2.2	RMS working voltage		N/A
2.10.2.3	Peak working voltage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.3	Clearances		N/A
2.10.3.1	General		—
2.10.3.2	Mains transient voltages		—
	a) AC mains supply .....:		N/A
	b) Earthed d.c. mains supplies .....:		N/A
	c) Unearthed d.c. mains supplies .....:		N/A
	d) Battery operation .....:		N/A
2.10.3.3	Clearances in primary circuits		N/A
2.10.3.4	Clearances in secondary circuits		N/A
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply .....:		N/A
2.10.3.7	Transients from d.c. mains supply .....:		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....:		N/A
2.10.3.9	Measurement of transient voltage levels		—
	a) Transients from a mains supply		N/A
	For an a.c. mains supply .....:		N/A
	For a d.c. mains supply .....:		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances		—
2.10.4.1	General		—
2.10.4.2	Material group and comparative tracking index		—
	CTI tests .....:		—
2.10.4.3	Minimum creepage distances		N/A
2.10.5	Solid insulation		—
2.10.5.1	General		—
2.10.5.2	Distances through insulation		N/A
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5	Cemented joints		N/A
2.10.5.6	Thin sheet material – General		—
2.10.5.7	Separable thin sheet material		N/A
	Number of layers (pcs) .....:		—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Electric strength test		—
2.10.5.11	Insulation in wound components		N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage .....:		N/A
	a) Basic insulation not under stress .....:		N/A
	b) Basic, supplementary, reinforced insulation .....:		N/A
	c) Compliance with Annex U .....:		N/A
	Two wires in contact inside wound component; angle between 45° and 90° .....:		N/A
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		N/A
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage .....:		N/A
	- Basic insulation not under stress .....:		N/A
	- Supplementary, reinforced insulation .....:		N/A
2.10.6	Construction of printed boards		—
2.10.6.1	Uncoated printed boards		N/A
2.10.6.2	Coated printed boards		N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs).....:		N/A
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.12	Enclosed and sealed parts		N/A
3	**WIRING, CONNECTIONS AND SUPPLY**		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Adequate cross sectional areas on internal wiring.	P
3.1.2	Protection against mechanical damage	Wireways are smooth and free from edges. Wires are adequately fixed to prevent excessive strain on wire and terminals and avoiding damage to the insulation of the conductors.	P
3.1.3	Securing of internal wiring	Internal wiring is secured against excessive strain, loosening of terminals and damage to the conductor insulation.	P
3.1.4	Insulation of conductors	Insulation on internal conductors is considered to be of adequate quality and suitable for the application and the working voltage involved.	P
3.1.5	Beads and ceramic insulators	No beads or similar ceramic insulators on conductors.	N/A
3.1.6	Screws for electrical contact pressure	No screw for electrical contact	N/A
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material.	P
3.1.8	Self-tapping and spaced thread screws	Thread-cutting or space thread screws are not used for electrical connections.	N/A
3.1.9	Termination of conductors	Class III equipment	N/A
	10 N pull test		N/A
3.1.10	Sleeving on wiring	Class III equipment. No sleeving is used as supplementary insulation.	N/A
3.2	**Connection to a mains supply**		N/A
3.2.1	Means of connection	Refer below:	—
3.2.1.1	Connection to an a.c. mains supply	Class III equipment.	N/A
3.2.1.2	Connection to a d.c. mains supply	.	N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Number of conductors, diameter of cable and conduits (mm) .....:		—
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		—
3.2.5.1	AC power supply cords		N/A
	Type .....:		—
	Rated current (A), cross-sectional area (mm^2), AWG .....:		—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) .....:		—
	Longitudinal displacement (mm) .....:		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g) .....:		—
	Radius of curvature of cord (mm) .....:		—
3.2.9	Supply wiring space		N/A
3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals	Not applicable, class III equipment which is provided with DC input Jack (Only SELV)	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2) .....:		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm) .....:		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	**Disconnection from the mains supply**		N/A
3.4.1	General requirement	Class III equipment.	N/A
3.4.2	Disconnect devices		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment		N/A
3.4.7	Number of poles - three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A
3.5	**Interconnection of equipment**		P
3.5.1	General requirements	Considered.	—
3.5.2	Types of interconnection circuits ..... :	SELV circuit.	P
3.5.3	ELV circuits as interconnection circuits	No ELV.	N/A
3.5.4	Data ports for additional equipment	Class III equipment, SELV circuit of data ports on main board protected by fuse F101 which complied LPS and mounted on PCB of flammability class V-1 or higher.	P
4	**PHYSICAL REQUIREMENTS**		P
4.1	Stability		P
	Angle of 10°	Unit does not overbalance at 10°.	P
	Test force (N) ..... :	The unit is not floor-standing.	N/A
4.2	**Mechanical strength**		P
4.2.1	General	Complies with the requirement also after tests described below are applied.	P
	Rack-mounted equipment.	No rack-mounted equipment.	N/A
4.2.2	Steady force test, 10 N		N/A
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N		N/A
4.2.5	Impact test		—
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test; height (mm) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.7	Stress relief test		N/A
4.2.8	Cathode ray tubes	CRT(s) not used in the equipment.	N/A
	Picture tube separately certified .....:		N/A
4.2.9	High pressure lamps	No high pressure lamps in the equipment.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) .....:	For model: A20TIO22**, TIO22Gen4, TIO22Gen4Touch Mass of equipment=4.88kg (include PC and without base), tested=144N for 1min. For model: A20TIO24**, TIO24Gen4, TIO24Gen4Touch Mass of equipment=5.46kg (include PC and without base), tested=161N for 1min. 4 piece screws M4 x 10mm used, see summary of tesing for details. The equipment and its associated mounting means still remain secure during the test.	P
4.3	**Design and construction**		P
4.3.1	Edges and corners	All edges and corners are rounded and/or smoothed.	P
4.3.2	Handles and manual controls; force (N) .....:	No knobs, grips, handles, lever etc.	N/A
4.3.3	Adjustable controls	No hazardous adjustable controls.	N/A
4.3.4	Securing of parts	Class III equipment. Not applicable.	N/A
4.3.5	Connection by plugs and sockets	SELV connectors do not comply with IEC 60320 or IEC 60083.	N/A
4.3.6	Direct plug-in equipment	Not intended to plug directly into a wall socket-outlet.	N/A
	Torque .....:		—
	Compliance with the relevant mains plug standard .....:		—
4.3.7	Heating elements in earthed equipment	No heating elements provided.	N/A
4.3.8	Batteries	No batteries in the equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	Insulation is not exposed to oil, grease etc.	N/A
4.3.10	Dust, powders, liquids and gases	The equipment does not generate ionizing radiation or use a laser, and does not contain flammable liquids or gases.	N/A
4.3.11	Containers for liquids or gases	No containers for liquids or gases in the equipment.	N/A
4.3.12	Flammable liquids ..... :	The equipment does not contain flammable liquid.	N/A
	Quantity of liquid (l) ..... :		N/A
	Flash point (°C) ..... :		N/A
4.3.13	Radiation	Refer below:	—
4.3.13.1	General	Refer below:	—
4.3.13.2	Ionizing radiation	The equipment does not generate ionizing radiation.	N/A
	Measured radiation (pA/kg) ..... :		—
	Measured high-voltage (kV) ..... :		—
	Measured focus voltage (kV) ..... :		—
	CRT markings ..... :		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	The equipment does not produce significant UV radiation.	N/A
	Part, property, retention after test, flammability classification ..... :		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation ..... :	The equipment does not produce significant UV radiation.	N/A
4.3.13.5	Lasers (including laser diodes) and LEDs	LEDs provided are exempt type.	P
4.3.13.5.1	Lasers (including laser diodes)	No laser.	N/A
	Laser class ..... :		—
4.3.13.5.2	Light emitting diodes (LEDs)	The following parts are exempt type: Indicating lights are low power. LED backlight is exempt type	—

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.6	Other types ..... :	The equipment does not generate other types of radiation.	N/A
4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General	See below	N/A
4.4.2	Protection in operator access areas ..... :	No moving part	N/A
	Household and home/office document/media shredders	Not intended for installation in RAL.	N/A
4.4.3	Protection in restricted access locations ..... :		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a)……:		N/A
	Is considered to cause pain, not injury. b) ……...:		N/A
	Considered to cause injury. c) ……...:		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning ……...:		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning ……...:		N/A
4.5	**Thermal requirements**		P
4.5.1	General	See below.	P
4.5.2	Temperature tests	(see appended table 4.5)	—
	Normal load condition per Annex L ..... :		P
4.5.3	Temperature limits for materials	(see appended table 4.5)	—
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat ..... :	No thermoplastic parts carrying hazardous voltages.	N/A
4.6	**Openings in enclosures**		P
4.6.1	Top and side openings	See below	P
	Dimensions (mm) ..... :	The equipment after fuse F101 is supplied by limited power source. Fire enclosure was not required. The circuits 20V_TINYF for Tiny PC not supplied by LPS. The metal chassis used as fire enclosure to cover the current circuit and no opening	—

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Clause	Requirement + Test	Result - Remark	Verdict
		near the current circuit. Also, openings are not located within 5°of fire hazardous parts. -numerous Ø1.8mm circular holes -one 8.8mm x 15.5mm rectangle hole (Blocked by mylar sheet V-0)	
4.6.2	Bottoms of fire enclosures	Fire enclosure (metal bottom) construction is considered to comply with the requirements and mylar sheet with flammability category V-0.	P
	Construction of the bottomm, dimensions (mm) ..:	Metal chassis: No bottom opening near the current circuit for Tiny PC, CN101, CN102 and F101 -one L shape 13.6mm x 9.9mm x 7.6mm rectangle hole (Blocked by mylar sheet V-0)	—
4.6.3	Doors or covers in fire enclosures	No doors or covers in fire enclosure.	N/A
4.6.4	Openings in transportable equipment	The unit is not regarded as transportable equipment.	N/A
4.6.4.1	Constructional design measures	The unit is not regarded as transportable equipment.	N/A
	Dimensions (mm) .....:		—
4.6.4.2	Evaluation measures for larger openings	The unit is not regarded as transportable equipment.	N/A
4.6.4.3	Use of metallized parts	The unit is not regarded as transportable equipment.	N/A
4.6.5	Adhesives for constructional purposes	The adhesive for mylar sheet secure was used.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Conditioning temperature (°C), time (weeks).....:	The tests were performed for mylar sheet secured. 1. 100°C for one week. 2. Remove from oven and leave at 25°C for 1h. 3.Place in freezer at -40°C for 4h. 4.Remove from freezer and allow come to 25°C for 8h. 5. Plase in a compartment at 95% relative humidity for 72h. 6.Remove and leave at 25°C for 1h. 7.Place in oven at 100°C for 4h. 8. Remove and allow sample to reach 25°C over 8h. For source of adhesive material, see appended table 1.5.1 These mylar sheets were then immediately subjected to the tests of 4.2 as applicable. These mylar sheets were not fall off or partly dislodge as a result of these tests.	—
4.7	**Resistance to fire**		P
4.7.1	Reducing the risk of ignition and spread of flame	See below	P
	Method 1, selection and application of components wiring and materials	(See appended table 1.5.1)	P
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	Refer below.	—
4.7.2.1	Parts requiring a fire enclosure	The fire enclosure is not required to cover all parts, except the components CN101, CN102, F101 and the current circuit for Tiny PC.	P
4.7.2.2	Parts not requiring a fire enclosure	The fire enclosure is not required to cover all parts, except the components CN101, CN102, F101 and the current circuit for Tiny PC. All components above are mounted on PCB of more than FLAMMABILITY CLASS V-1 (Refer to Clause 2.5).	P
4.7.3	Materials		P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.1	General	Components and materials have adequate flammability classification. See appended table 1.5.1.	P
4.7.3.2	Materials for fire enclosures	Fire enclosure made of metal material and mylar sheet with flammability category V-0.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	Min. HB material. PCB of mainboard is Class V-1. The plastic enclosure case covering the power supply port for Tiny PC was V-0. See appended table 1.5.1.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	Other materials inside fire enclosure are minimum V-2 material.	P
4.7.3.5	Materials for air filter assemblies	No air filters in the equipment.	N/A
4.7.3.6	Materials used in high-voltage components	No parts exceeding 4kV.	N/A
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		**N/A**
5.1	**Touch current and protective conductor current**		N/A
5.1.1	General	Class III equipment, SELV circuit only.	N/A
5.1.2	Configuration of equipment under test (EUT)	See below.	—
5.1.2.1	Single connection to an a.c. mains supply	No interconnection of equipment.	N/A
5.1.2.2	Redundant multiple connections to an a.c. mains supply	No multiple power sources.	N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	No multiple power sources.	N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		—
5.1.6	Test measurements		—
	Supply voltage (V) ..... :		—
	Measured touch current (mA) ..... :		—
	Max. allowed touch current (mA) ..... :		—
	Measured protective conductor current (mA) ..... :		—
	Max. allowed protective conductor current (mA) .. :		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) ..... :		—
	Measured touch current (mA) ..... :		—
	Max. allowed touch current (mA) ..... :		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports ..... :		—
	b) EUT whose telecommunication ports have no reference to protective earth		—
5.2	**Electric strength**		N/A
5.2.1	General	Class III equipment, SELV circuit only.	N/A
5.2.2	Test procedure	Class III equipment, SELV circuit only.	N/A
5.3	**Abnormal operating and fault conditions**		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	There is no motor in the equipment.	N/A
5.3.3	Transformers	No isolating transformer.	N/A
5.3.4	Functional insulation ..... :	Class III equipment, SELV circuit only.	N/A
5.3.5	Electromechanical components	No electromechanical components in secondary circuits.	N/A
5.3.6	Audio amplifiers in ITE ..... :		P
5.3.7	Simulation of faults		P
5.3.8	Unattended equipment	No thermostats, temperature limiters or thermal cut-outs	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	Refer below:	P
5.3.9.1	During the tests	No fire or molten metal occurred and no deformation of enclosure during the tests.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.9.2	After the tests	No fire or molten metal occurred and no deformation of enclosure during the tests.	P
6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		—
6.1.1	Protection from hazardous voltages		—
6.1.2	Separation of the telecommunication network from earth		—
6.1.2.1	Requirements	No TNV circuit.	N/A
	Supply voltage (V) ..... :		—
	Current in the test circuit (mA) ..... :		—
6.1.2.2	Exclusions ..... :		N/A
6.2	**Protection of equipment users from overvoltages on telecommunication networks**		N/A
6.2.1	Separation requirements	Not connected to telecommunication networks.	N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A
6.3	**Protection of the telecommunication wiring system from overheating**		N/A
	Max. output current (A) ..... :		—
	Current limiting method ..... :		—
7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		N/A
7.1	General	Not connected to Cable Distribution System.	N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples ..... :		—
	Wall thickness (mm)..... :		—
A.1.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.1.3	Mounting of samples ..... :		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D ..... :		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A
A.2.1	Samples, material ..... :		—
	Wall thickness (mm)..... :		—
A.2.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.2.3	Mounting of samples ..... :		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C ..... :		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		N/A
B.1	General requirements		N/A
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) ..... :		—
	Electric strength test: test voltage (V) ..... :		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) ..... :		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V) ..... :		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V) ..... :		—
C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		N/A
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
	Method of protection ..... :		—
C.1	Overload test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
C.2	Insulation		N/A
	Protection from displacement of windings ..... :		N/A
D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		N/A
D.1	Measuring instrument		N/A
D.2	Alternative measuring instrument		N/A
E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**		N/A
F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)**		N/A
G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		N/A
G.1	Clearances	Class III equipment.	N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply ..... :		N/A
G.2.2	Earthed d.c. mains supplies ..... :		N/A
G.2.3	Unearthed d.c. mains supplies ..... :		N/A
G.2.4	Battery operation ..... :		N/A
G.3	Determination of telecommunication network transient voltage (V) ..... :		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks .... :		N/A
G.4.2	Transients from telecommunication networks ..... :		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		N/A
J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		N/A
	Metal(s) used ..... :		—
K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)**		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V) ..... :		N/A
K.3	Thermostat endurance test; operating voltage (V) ..... :		N/A
K.4	Temperature limiter endurance; operating voltage (V) ..... :		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)**		P
L.1	Typewriters	Not used.	N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		P
M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) .....:		—
M.3.1.2	Voltage (V) .....:		—
M.3.1.3	Cadence; time (s), voltage (V) .....:		—
M.3.1.4	Single fault current (mA) .....:		—
M.3.2	Tripping device and monitoring voltage .....:		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.3.2.3	Monitoring voltage (V) .....:		N/A
N	**ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)**		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	**ANNEX P, NORMATIVE REFERENCES**		—
Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		N/A
	- Preferred climatic categories .....:		N/A
	- Maximum continuous voltage .....:		N/A
	- Combination pulse current .....:		N/A
	Body of the VDR Test according to IEC60695-11-5.....:		N/A
	Body of the VDR. Flammability class of material (min V-1).....:		N/A
R	**ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		N/A
			—
U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		N/A
			—
V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
V.1	Introduction		—
V.2	TN power distribution systems		N/A
W	**ANNEX W, SUMMATION OF TOUCH CURRENTS**		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	**Annex X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)**		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A
Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**		N/A
Y.1	Test apparatus .....:		N/A
Y.2	Mounting of test samples .....:		N/A
Y.3	Carbon-arc light-exposure apparatus .....:		N/A
Y.4	Xenon-arc light exposure apparatus .....:		N/A
Z	**ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)**		N/A
AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**		N/A
BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**		—
CC	**ANNEX CC, Evaluation of integrated circuit (IC) current limiters**		N/A
CC.1	General		N/A
CC.2	Test program 1.....:		N/A
CC.3	Test program 2.....:		N/A
CC.4	Test program 3.....:		N/A
CC.5	Compliance.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment**		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N……..:		N/A
DD.3	Mechanical strength test, 250N, including end stops……:		N/A
DD.4	Compliance……:		N/A

EE	**ANNEX EE, Household and home/office document/media shredders**		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols……:		N/A
	Information of user instructions, maintenance and/or servicing instructions……:		N/A
EE.3	Inadvertent reactivation test……:		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols……:		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A) ……:		N/A
	Test with wedge probe (Figure EE1 and EE2) ……:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	**TABLE: list of critical components**	P

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
AC/DC adapter	Delta Electronics, Inc.	ADP-90ME B	INPUT: AC 100-240V, 1.5A 50-60Hz; OUTPUT: DC 20V, 4.5A, 40℃	IEC 62368-1:2014 (2nd Edition); and/or EN62368-1:2014; A11:2017	CB issued by TUV. Cert No.JPTUV-138899 and report No.CN220E9S001
Alt.)	Delta Electronics, Inc.	ADP-90XD B	INPUT: AC 100-240V, 1.5A 50-60Hz; OUTPUT: DC 20V, 4.5A, 40℃	IEC 60950-1:2005 (2nd Edition); Am 1:2009 EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011	CB issued by UL. Cert No.DK-32915-M1-UL and report No. E131881-A1518-CB-2
Alt.)	Lite-On Technology Corporation	PA-1900-74XX (where X = A-Z, 0-9, or “-” or blank)	INPUT: 100-240Vac, 1.5A 50-60Hz; OUTPUT: 20Vdc, 4.5A, 40℃	IEC 62368-1:2014 (2nd Edition); and/or EN62368-1:2014; A11:2017	CB issued by TUV. Cert No.JPTUV-102137 and report No.50310677001

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Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
Plastic Enclosure except plastic enclosure cover DP+U3+DC 3 in1 cable	LOTTE Chemical Corporation	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++) (RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), LS-1159(r), LS-1159SF, LS-1159F, NH-1036, SD-0150T, ABF-0200E	HB or better	UL94	UL
Alt.)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A			UL
Alt.)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S			UL
Alt.)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F			UL
Alt.)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series			UL

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Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
Alt.)	LG	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#), GN-2101F(m)	HB or better	UL94	UL

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Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
Alt.)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better	UL94	UL
Alt.)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35			UL
Alt.)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000, ABS-340*(*=0~10), HIPS-2230(+)			UL
Alt.)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c), GA35, NC30, GA65, GA85			UL
Alt.)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+ (+: A to Z)			UL
Alt.)	GUO HENG (DONGGUAN)	YOUHO(####)(Y), YOUHO-1303B, YOUHO1312B, YOUHO(1304)(B), YOUHO(1333)(B), YOUHO(1303)(OP)			UL

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
Alt.)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better	UL94	UL
Alt.)	HUIZHOU WOTE	2100			UL
Alt.)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)			UL

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
Alt.)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better	UL94	UL
Alt.)	STYRON	STYRON A-TECH 1200			UL
Alt.)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441, 260-XX			UL
Alt.)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106			UL
Alt.)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)			UL
Alt.)	PONTEX	AFE5000N, AFE5100N, 9004BK			UL
Alt.)	CHI LIN TECHNOLOGY CO LTD	GA-1(aaa), GA-1535, GA-1565			UL
Alt.)	SAMYANG	TRILOY:210NHF (&), 210NHF			UL
Alt.)	COVESTRO DEUTSCHLAND AG	GF99011 MF			UL
Alt.)	Chi mei	PC-540(Y)(a)			UL
Alt.)	QING DAO GON TECHNOLOGY CO.,LTD	ABS21(xx)G-A, ABS2030A, ABS20(xx)B			UL
Alt.)	SHENZHEN FUHENG NEW MATERIAL CO LTD	HIPS-568			UL
Alt.)	UNIC TECHNOLOGY CORP	UR-7085+(R90)			UL
Alt.)	Interchangeable	Interchangeable			UL

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Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
Plastic enclosure cover DP+U3+DC 3 in1 cable	Interchangeable	Interchangeable	V-0 or better, thickness 1.7mm min.	UL94	UL
Base (Optional)	Interchangeable	Interchangeable	Metallic that covered by the plastic which HB or better	UL94	UL
Metal chassis	Interchangeable	Interchangeable	Metal, thickness min.0.3mm	IEC60950-1	Test in the equipment
PCB	Interchangeable	Interchangeable	Min. V-1 105°C	UL796	UL
Speakers (two provided) (optional)	Interchangeable	Interchangeable	Max. 3W Min. 4ohm	IEC60950-1	Test in the equipment
LCD panel For models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch	BOE	MV215******* (* can be 0-9, a-z, A-Z, ".", -, or blank)	21.5" (54.46cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	LG Display	LM215********* (* can be 0-9, a-z, A-Z, ".", -, or blank)	21.5" (54.46cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	CHIMEI INNOLUX	M215******* (* can be 0-9, a-z, A-Z, ".", -, or blank)	21.5" (54.46cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	TPV	TPM215HW******** (* can be 0-9, a-z, A-Z, ".", -, or blank)	21.5" (54.46cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	AUO	M215******** (* can be 0-9, a-z, A-Z, ".", -, or blank)	21.5" (54.46cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	COST	MG215****** (* can be 0-9, a-z, A-Z, ".", -, or blank)	21.5" (54.46cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
LCD panel For models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch	LG Display	LM238******** (* can be 0-9, a-z, A-Z, ".", -, or blank)	23.8" (60.452cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	AUO	M238******* (* can be 0-9, a-z, A-Z, ".", -, or blank)	23.8" (60.452cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	BOE	MV238******* (* can be 0-9, a-z, A-Z, ".", -, or blank)	23.8" (60.452cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	Samsung	LTM238**** (* can be 0-9, a-z, A-Z, ".", -, or blank)	23.8" (60.452cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	CHIMEI INNOLUX	M238******* (* can be 0-9, a-z, A-Z, ".", -, or blank)	23.8" (60.452cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Alt.)	COST	MG238****** (* can be 0-9, a-z, A-Z, ".", -, or blank)	23.8" (60.452cm) TFT glass is minimum 0.4mm thickness	IEC60950-1	Test in the equipment
Mylar Sheet	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, FR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	Thickness: 0.40mm min. V-0, 80 ℃	UL 94	UL
Alt.)	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B	Thickness: 0.40mm min. V-0, 80 ºC	UL 94	UL
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-1860B, KLX FRPC-83	Thickness: 0.40mm min. V-0, 80 ℃	UL 94	UL
Alt.)	JINGMEN GORUN TECHNOLOGY CO LTD	HF70	Thickness: 0.40mm min. V-0, 80 ℃	UL 94	UL

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
Alt.)	KUNSHAN DOBESTY OPTOELECTRONIC	PC9842B PC9821B, PC9832B, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1	Thickness: 0.40mm min. V-0, 80 ℃	UL 94	UL
Alt.)	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370F	Thickness: 0.40mm min. V-0, 80 ℃	UL 94	UL
Adhesive for mylar sheet	XIAMEN LABAO OPTICS & ELECTRONICS CO LTD	TD-10	80 ℃ , 0.05mm Thickness min	UL 969 IEC 60950-1 Clause 4.6.5	UL Test in equipment
Alt.)	3M China Co ltd	55236, 9448A	80 ℃ , 0.05mm Thickness min	UL 969 IEC 60950-1 Clause 4.6.5	UL Test in equipment
Alt.)	SYMBIO	DS50-A, DS50L	100℃ , 0.05mm Thickness min	UL 969 IEC 60950-1 Clause 4.6.5	UL Test in equipment
Alt.)	Dexerials	G4000	80 ℃ , 0.05mm Thickness min	UL 969 IEC 60950-1 Clause 4.6.5	UL Test in equipment
The following components are located on mainboard, type 715GD726 and 715GD745					
Fuse (F101)	SUZHOU WALTER ELECTRONIC CO LTD	1032ST	T4AL, 250V	IEC 60127, UL248	TUV, UL
Alt.	LITTELFUSE INC	443*		IEC 60127, UL248	VDE, UL
Alt.	SUZHOU WALTER ELECTRONIC CO LTD	2410LT series		IEC 60127, UL248	TUV, UL
Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	244 series		IEC 60127, UL248	TUV, UL
Alt.	LITTELFUSE INC	452 series		IEC 60127, UL248	VDE, UL
Alt.	CONQUER ELECTRONICS CO LTD	SEI		IEC 60127, UL248	TUV, UL

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1)]
Supplementary information:					
[1)] an asterisk indicates a mark which assures the agreed level of surveillance.					

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: Opto Electronic Devices	N/A

Manufacturer..... :

Type..... :

Separately tested..... :

Bridging insulation ..... :

External creepage distance ..... :

Internal creepage distance ..... :

Distance through insulation ..... :

Tested under the following conditions ..... :

Input..... :

Output..... :

supplementary information

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: electrical data (in normal conditions)	P

fuse #	Irated (A)	U (V / Hz)	P (W)	I (A)	Ifuse (A)	condition/status
Models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch						
--	4.5	20V dc	86.0	4.3	--	Normal load
Models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch						
--	4.5	20V dc	88.0	4.4	--	Normal load
Supplementary information:						
Maximum normal load refer to general product information.						

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.1.1.5 c)	TABLE: max. V, A, VA test	N/A

Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
supplementary information:				
The above measurements are the maximum values (max. V and max. A not obtained at the same time).				

2.2	TABLE: evaluation of voltage limiting components in SELV circuits	P

Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V peak	V d.c.	
For models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch			
LED backlight to GND	--	47.4	N/A
For models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch			
LED backlight to GND	--	53.4	N/A

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
For models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch	
L801	47.4 Vdc
D801	0 Vdc
For models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch	
L801	53.4 Vdc
D801	0 Vdc
supplementary information:	

2.4.2	TABLE: limited current circuit measurement	N/A

Location	Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)
supplementary information:				

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.5	TABLE: limited power sources	P

Circuit output tested: See below

	I_{sc} (A)		VA	
	Meas.	Limit	Meas.	Limit
DC power input on mainboard 715GD726 is tested: +20V output				
normal condition (F101 bypass) (with table 2C), Uoc=20.4V	6.5	49.0	119.6	250
HDMI port (CN1002) pin 15, 16 to sec GND, Normal condition (with table 2B), Uoc=3.3V *)	0	8	0	100
HDMI port (CN1002) pin 18 to sec GND, Normal condition (with table 2B), Uoc=5.0V *)	0	8	0	100
HDMI port (CN1002) other pins to sec GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
DP port (CN103), Normal condition pin 3,6 to GND, (with table 2B), Uoc=3.3V *)	0	8	0	100
DP port (CN103), Normal condition pin 20 to GND, (with table 2B), Uoc=3.3V	1.7	8	5.6	100
DP port (CN103), pin 20 to sec GND fault condition (U108 pin2-3 S-C) (with table 2B), Uoc=4.98V	4.9	8	12.5	100
DP output port (CN103), Normal condition other pins to GND, (with table 2B), Uoc=0V *)	0	8	0	100
USB port (CN707), Normal condition pin 1 to GND, (with table 2B), Uoc=5.13V	1.3	8	5.8	100
USB port (CN707), pin 1 to sec GND fault condition (U713 pin1-5 S-C) (with table 2B), Uoc=5.13V	4.6	8	13.0	100
USB port (CN707), Normal condition other pins to GND (with table 2B), Uoc=0V *)	0	8	0	100
USB port (CN702), Normal condition All pins to GND (with table 2B), Uoc=0V *)	0	8	0	100
supplementary information:				
-.Fuse F101 broken with the circuit within 120 sec. with a current equal 210% of fuse rating. *) Can not load				

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.5	TABLE: limited power sources	P

Circuit output tested: See below

	I_{sc} (A)		VA	
	Meas.	Limit	Meas.	Limit
DC power input on mainboard 715GD745 is tested: +20V output				
normal condition (F101 bypass) (with table 2C), Uoc=20.4V	6.59	49.0	127.2	250
HDMI port (CN1002) pin 15, 16 to sec GND, Normal condition (with table 2B), Uoc=3.3V *)	0	8	0	100
HDMI port (CN1002) pin 18 to sec GND, Normal condition (with table 2B), Uoc=5.0V *)	0	8	0	100
HDMI port (CN1002) other pins to sec GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
DP port (CN103), Normal condition pin 3,6 to GND, (with table 2B), Uoc=3.3V *)	0	8	0	100
DP port (CN103), Normal condition pin 20 to GND, (with table 2B), Uoc=3.3V	1.3	8	3.9	100
DP port (CN103), pin 20 to sec GND fault condition (U108 pin2-3 S-C) (with table 2B), Uoc=4.95V	4.6	8	11.3	100
DP output port (CN103), Normal condition other pins to GND, (with table 2B), Uoc=0V *)	0	8	0	100
USB port (CN717), Normal condition pin 1 to GND, (with table 2B), Uoc=5.07V	1.7	8	7.2	100
USB port (CN717), pin 1 to sec GND fault condition (U713 pin1-5 S-C) (with table 2B), Uoc=5.07V	4.6	8	13.2	100
USB port (CN717), Normal condition other pins to GND (with table 2B), Uoc=0V *)	0	8	0	100
USB port (CN702), Normal condition All pins to GND (with table 2B), Uoc=0V *)	0	8	0	100
supplementary information:				
-.Fuse F101 broken with the circuit within 120 sec. with a current equal 210% of fuse rating. *) Can not load				

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.10.2	Table: working voltage measurement	N/A

Location	RMS voltage (V)	Peak voltage (V)	Comments
supplementary information:			

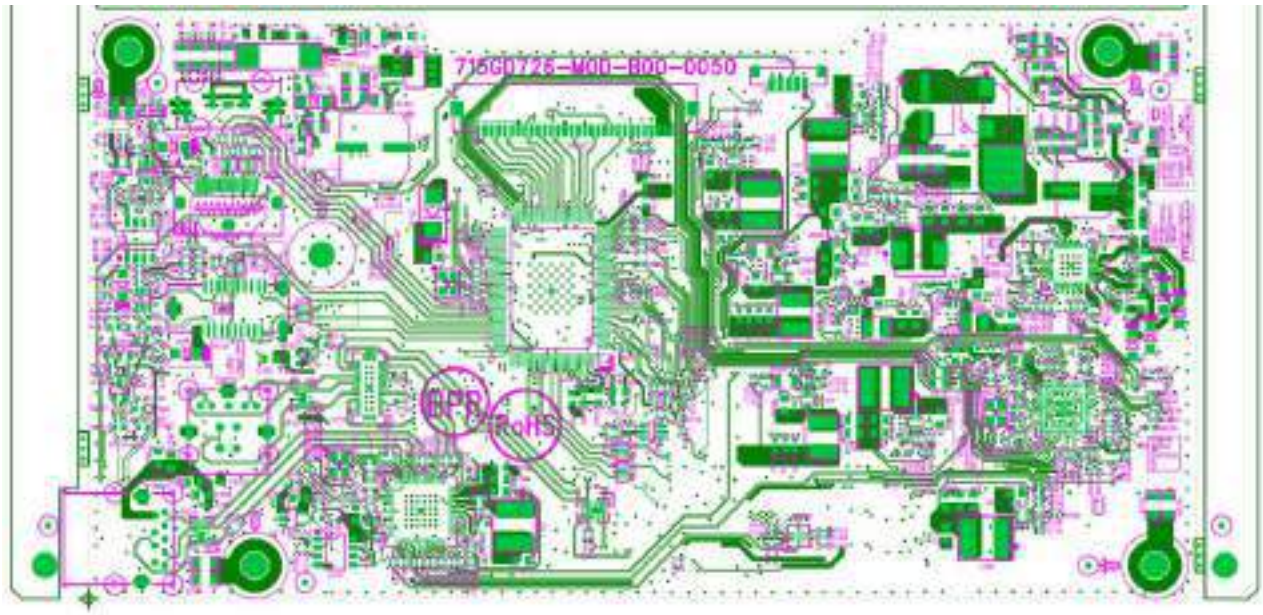
2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements	N/A

Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Supplementary information:						

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

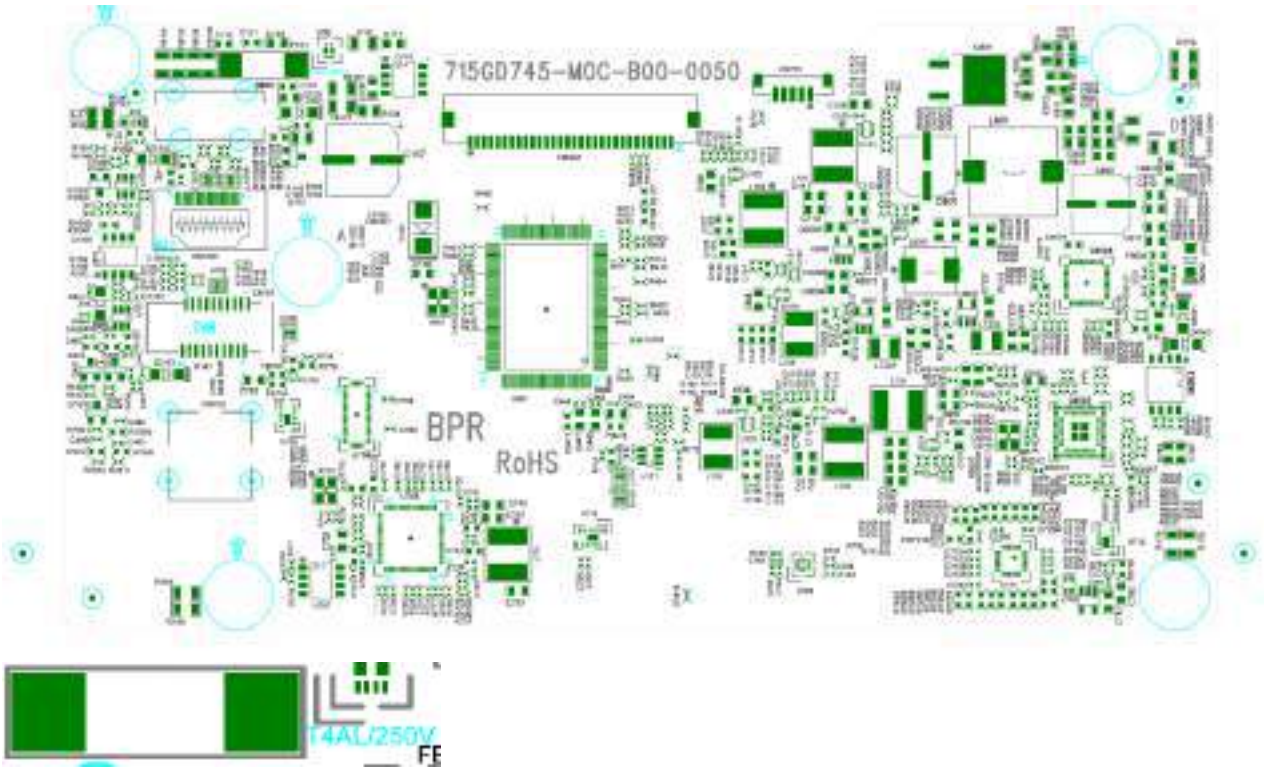
Copy of mainboard, layout of tracing (not to scale): for mainboard 715GD726



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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Copy of mainboard, layout of tracing (not to scale): for mainboard 715GD745



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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.10.5	TABLE: distance through insulation measurements	N/A

distance through insulation di at/of:	Up (V)	test voltage (V)	required di (mm)	di (mm)
supplementary information:				

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.3.8	TABLE: Batteries		N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available			
Is it possible to install the battery in a reverse polarity position?			

	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition									
Max. current during fault condition									

Test results:		Verdict
- Chemical leaks		
- Explosion of the battery		
- Emission of flame or expulsion of molten metal		
- Electric strength tests of equipment after completion of tests		
Supplementary information:		

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.3.8	TABLE: Batteries	N/A
Battery category ..... :		
Manufacturer ..... :		
Type / model..... :		
Voltage ..... :		
Capacity..... :		
Tested and Certified by (incl. Ref. No.) ..... :		
Circuit protection diagram:		

MARKINGS AND INSTRUCTIONS (1.7.13)	
Location of replaceable battery	
Language(s) ……..:	
Close to the battery ……..:	
In the servicing instructions ……:	
In the operating instructions ……..:	

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures		P
	test voltage (V) :	20Vd.c.	—
maximum temperature T of part/at:		T (°C)	allowed Tmax (°C)
For models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch horizontal position			
PCB near CN101		49.3	105
PCB near D102		51.5	105
PCB near U706		49.7	105
PCB near U401		53.3	105
L703		50.2	95 *)
L6001		55.5	95 *)
L801		65.7	95 *)
PCB near Q801		56.5	105
C809		52.5	85
Metal enclosure inside near U401		56.1	--
Plastic enclosure inside near U401		46.2	--
Plastic enclosure outside near U401		44.6	95
Panel		45.9	80
Control Key		43.8	85
Base		40.8	85
Ambient		40.0	--
supplementary information:			
Tmra = 40°C. Limits are adjusted according to Cl.1.4.12.3. If no limit is stated, temperature is for reference only. *) Temperature limits of winding less 10℃ fo r thermocouple measurement method.			

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures		P
	test voltage (V) :	20Vd.c.	—
maximum temperature T of part/at:		T (°C)	allowed Tmax (°C)
For models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch vertical position (rotating anti-clockwise 90 degree)			
PCB near CN101		48.6	105
PCB near D102		51.3	105
PCB near U706		50.9	105
PCB near U401		53.5	105
L703		50.9	95 *)
L6001		53.6	95 *)
L801		62.4	95 *)
PCB near Q801		53.9	105
C809		49.9	85
Metal enclosure inside near U401		45.9	--
Plastic enclosure inside near U401		42.9	--
Plastic enclosure outside near U401		42.3	95
Panel		42.4	80
Control Key		41.4	85
Base		40.6	85
Ambient		40.0	--
supplementary information:			
Tmra = 40°C. Limits are adjusted according to Cl.1.4.12.3. If no limit is stated, temperature is for reference only. *) Temperature limits of winding less 10℃ fo r thermocouple measurement method.			

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures		P
	test voltage (V) :	20Vd.c.	—
maximum temperature T of part/at:		T (°C)	allowed Tmax (°C)
For models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch vertical position (rotating clockwise 90 degree)			
PCB near CN101		47.8	105
PCB near D102		49.9	105
PCB near U706		49.0	105
PCB near U401		52.2	105
L703		49.7	95 *)
L6001		55.4	95 *)
L801		64.7	95 *)
PCB near Q801		56.3	105
C809		53.3	85
Metal enclosure inside near U401		46.1	--
Plastic enclosure inside near U401		43.2	--
Plastic enclosure outside near U401		42.5	95
Panel		44.0	80
Control Key		41.7	85
Base		40.5	85
Ambient		40.0	--
supplementary information:			
Tmra = 40°C. Limits are adjusted according to Cl.1.4.12.3. If no limit is stated, temperature is for reference only. *) Temperature limits of winding less 10℃ fo r thermocouple measurement method.			

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures		P
	test voltage (V) :	20Vd.c.	—
maximum temperature T of part/at:		T (°C)	allowed Tmax (°C)
For models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch horizontal position			
PCB near CN101		50.6	105
PCB near U401		55.6	105
PCB near U706		52.4	105
PCB near D102		54.1	105
L703		53.7	95 *)
L6001		59.3	95 *)
L801		61.1	95 *)
PCB near Q801		60.5	105
C107		54.2	85
Metal enclosure inside near U401		47.6	--
Plastic enclosure inside near U401		45.7	--
Plastic enclosure outside near U401		42.5	95
Panel		45.0	80
Control Key		42.4	85
Base		41.0	85
Ambient		40.0	--
supplementary information:			
Tmra = 40°C. Limits are adjusted according to Cl.1.4.12.3. If no limit is stated, temperature is for reference only. *) Temperature limits of winding less 10℃ fo r thermocouple measurement method.			

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures		P
	test voltage (V) :	20Vd.c.	—
maximum temperature T of part/at:		T (°C)	allowed Tmax (°C)
For models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch vertical position (rotating anti-clockwise 90 degree)			
PCB near CN101		52.2	105
PCB near U401		57.7	105
PCB near U706		54.9	105
PCB near D102		55.7	105
L703		55.8	95 *)
L6001		59.5	95 *)
L801		59.9	95 *)
PCB near Q801		59.7	105
C107		55.5	85
Metal enclosure inside near U401		48.1	--
Plastic enclosure inside near U401		46.0	--
Plastic enclosure outside near U401		42.6	95
Panel		44.1	80
Control Key		43.5	85
Base		40.8	85
Ambient		40.0	--
supplementary information:			
Tmra = 40°C. Limits are adjusted according to Cl.1.4.12.3. If no limit is stated, temperature is for reference only. *) Temperature limits of winding less 10℃ fo r thermocouple measurement method.			

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: maximum temperatures		P
	test voltage (V) :	20Vd.c.	—
maximum temperature T of part/at:		T (°C)	allowed Tmax (°C)
For models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch vertical position (rotating clockwise 90 degree)			
PCB near CN101		49.2	105
PCB near U401		55.2	105
PCB near U706		52.5	105
PCB near D102		53.2	105
L703		54.0	95 *)
L6001		59.7	95 *)
L801		61.2	95 *)
PCB near Q801		60.7	105
C107		53.0	85
Metal enclosure inside near U401		46.9	--
Plastic enclosure inside near U401		45.3	--
Plastic enclosure outside near U401		42.5	95
Panel		44.3	80
Control Key		42.9	85
Base		41.0	85
Ambient		40.0	--
supplementary information:			
Tmra = 40°C. Limits are adjusted according to Cl.1.4.12.3. If no limit is stated, temperature is for reference only. *) Temperature limits of winding less 10℃ fo r thermocouple measurement method.			

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5.5	TABLE: Ball pressure test of thermoplastic parts		N/A
	Allowed impression diameter (mm) ..... :	≤ 2 mm	—

Part	Test temperature (°C)	Impression diameter (mm)
Supplementary information:		

4.7	TABLE: resistance to fire			N/A
part	manufacturer of material	type of material	thickness (mm)	flammability class
supplementary information:				

5.1	TABLE: touch current measurement			N/A
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
supplementary information:				

5.2	TABLE: Electric strength tests			N/A
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No	
Supplementary information:				

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C) ..... :	25°C, if not specify	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
For models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch						
Openings	Blocked	20V dc	3.0hrs	--	--	Unit operated normally, no damaged, no hazard PCB near U401=40.1°C Plastic enclosure outside near U401=34.1°C, Panel=31.3°C, control keys=30.2°C, Base=26.0°C, Ambient=25°C no damaged, no hazard.
Speaker	s-c	20V dc	5 min	--	--	Unit operated normally, except speaker shutdown, no damaged, no hazard.
USB (on monitor)	s-c	20V dc	5 min	--	--	Unit operated normally, except USB shutdown, no damaged, no hazard.
USB (on monitor)	o-l	20V dc	3.2hrs	--	--	USB 3.0 shut down when load increase to 1.3A, no damaged, no hazard PCB near U401=38.9°C Plastic enclosure outside near U401=31.8°C, Panel=31.1°C, control keys=29.9°C, Base=25.7°C, Ambient=25°C no damaged, no hazard.
For models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch						
Openings	Blocked	20V dc	3.1hrs	--	--	Unit operated normally, no damaged, no hazard PCB near U401=43.0°C Plastic enclosure outside near U401=27.8°C, Panel=33.0°C, control keys=29.2°C, Base=26.2°C, Ambient=25.0°C no damaged, no hazard.

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Speaker	s-c	20V dc	5 min	--	--	Unit operated normally, except speaker shutdown, no damaged, no hazard.
USB (on monitor)	s-c	20V dc	5 min	--	--	Unit operated normally, except USB shutdown, no damaged, no hazard.
USB (on monitor)	o-l	20V dc	3.3hrs	--	--	USB 3.0 shut down when load increase to 1.7A, no damaged, no hazard PCB near U401=42.9°C Plastic enclosure outside near U401=27.9°C, Panel=31.1°C, control keys=30.1°C, Base=26.1°C, Ambient=25.0°C no damaged, no hazard.
Supplementary information:						
s-c: short circuit, o-l: over load						

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

C.2	TABLE: transformer	N/A

Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)

Loc.	Tested insulation	Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers

supplementary information:

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Front view horizontal position for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



Back view horizontal position for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



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Front view vertical position for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



Back view vertical position for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



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Side view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



Side view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



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Top view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch

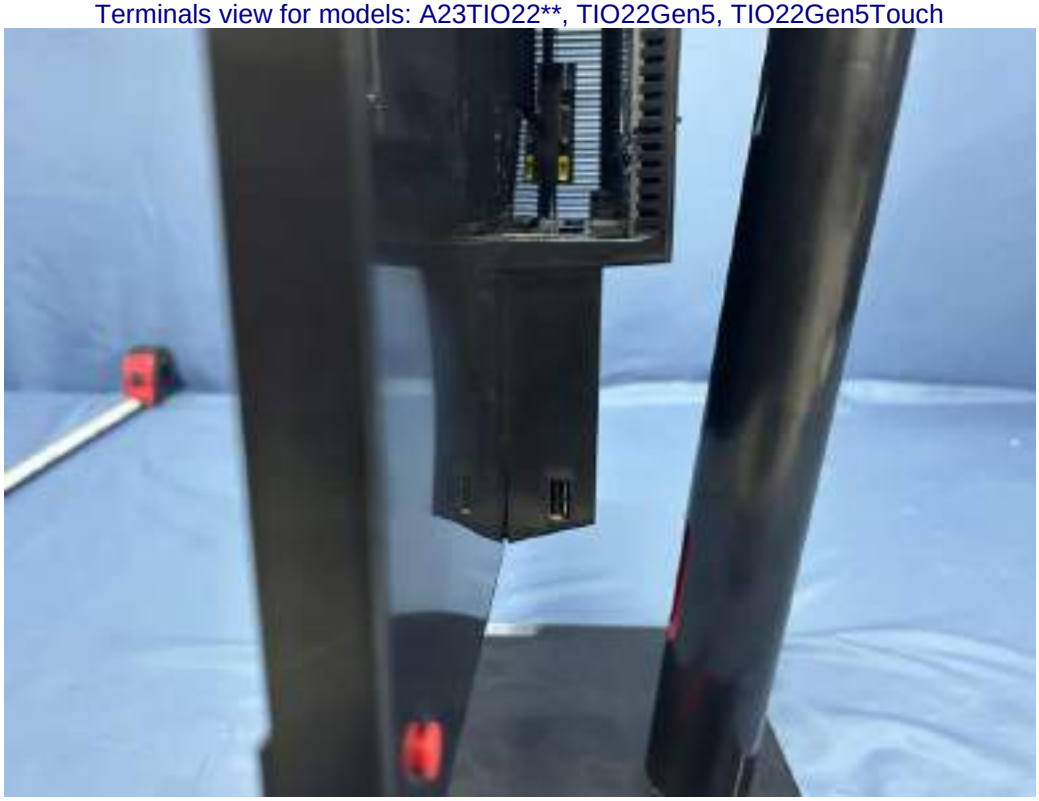


Terminals view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



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Terminals view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



Internal view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



Mylar sheet

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Internal view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch

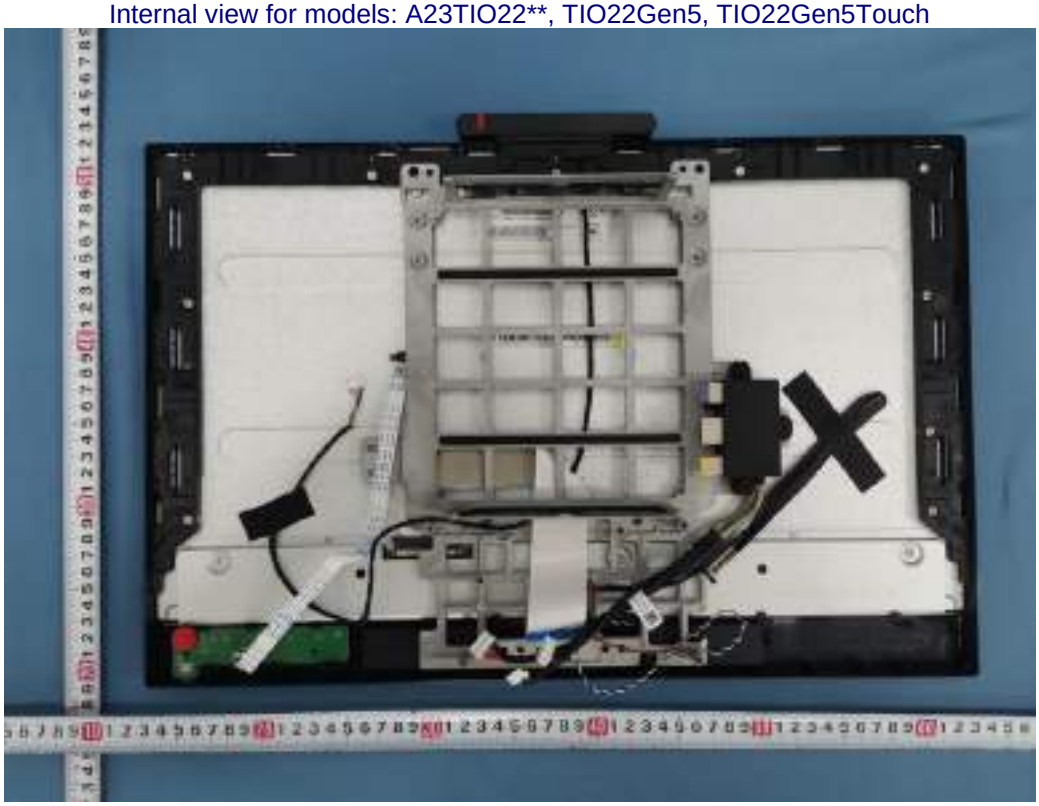


Internal view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch

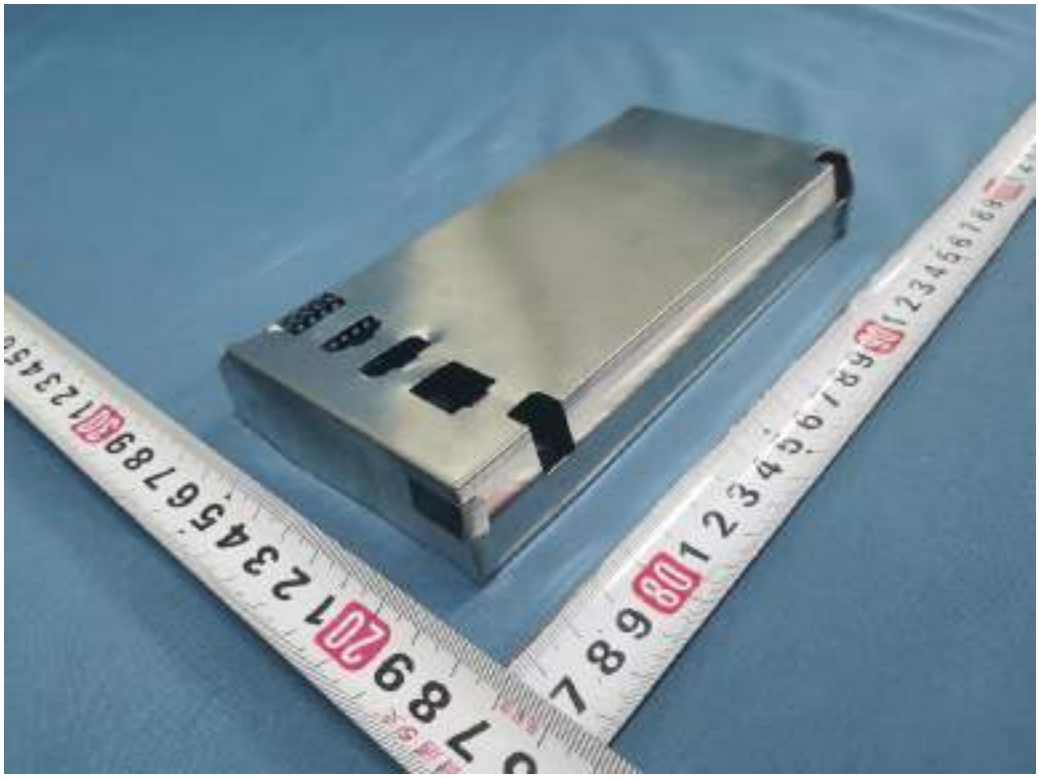


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Internal view for models: A23TIO22**, TIO22Gen5, TIO22Gen5Touch



Metal chassis view



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Metal chassis view



Mainboard 715GD726



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Mainboard 715GD726



Front view horizontal position for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



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Back view horizontal position for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



Front view vertical position for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



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Back view vertical position for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



Side view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



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Side view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



Top view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



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Terminals view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



Terminals view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



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Internal view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



Mylar sheet

Internal view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch



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Internal view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch

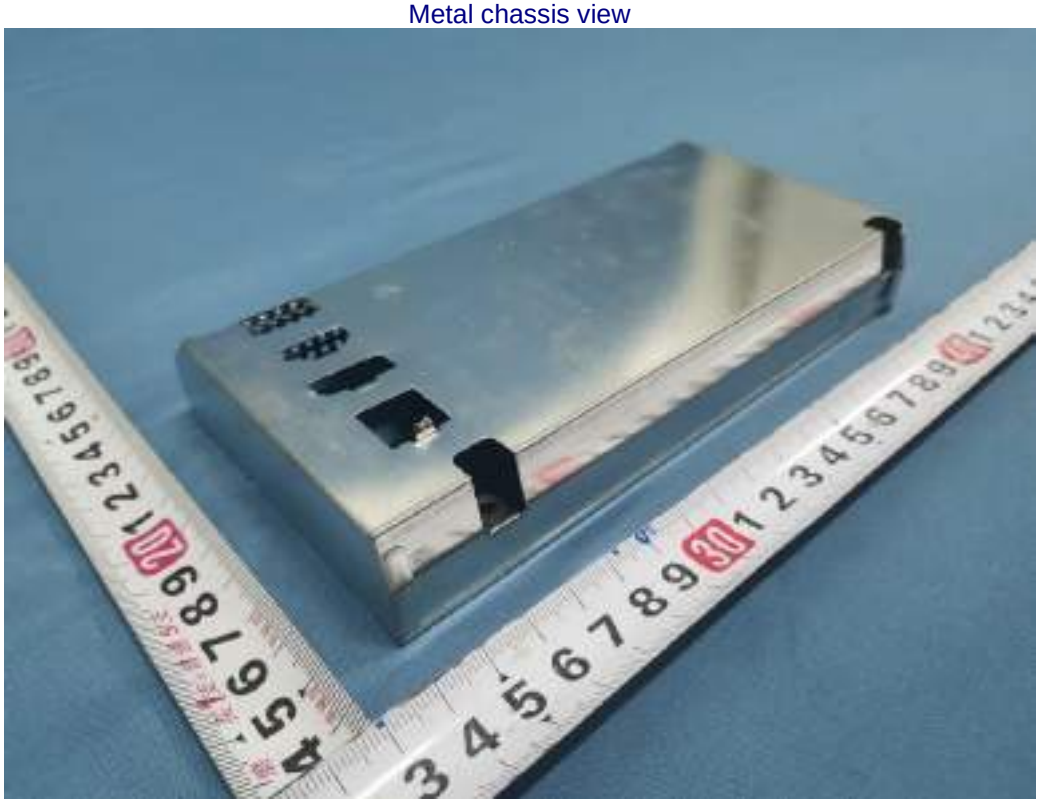


Internal view for models: A23TIO24**, TIO24Gen5, TIO24Gen5Touch

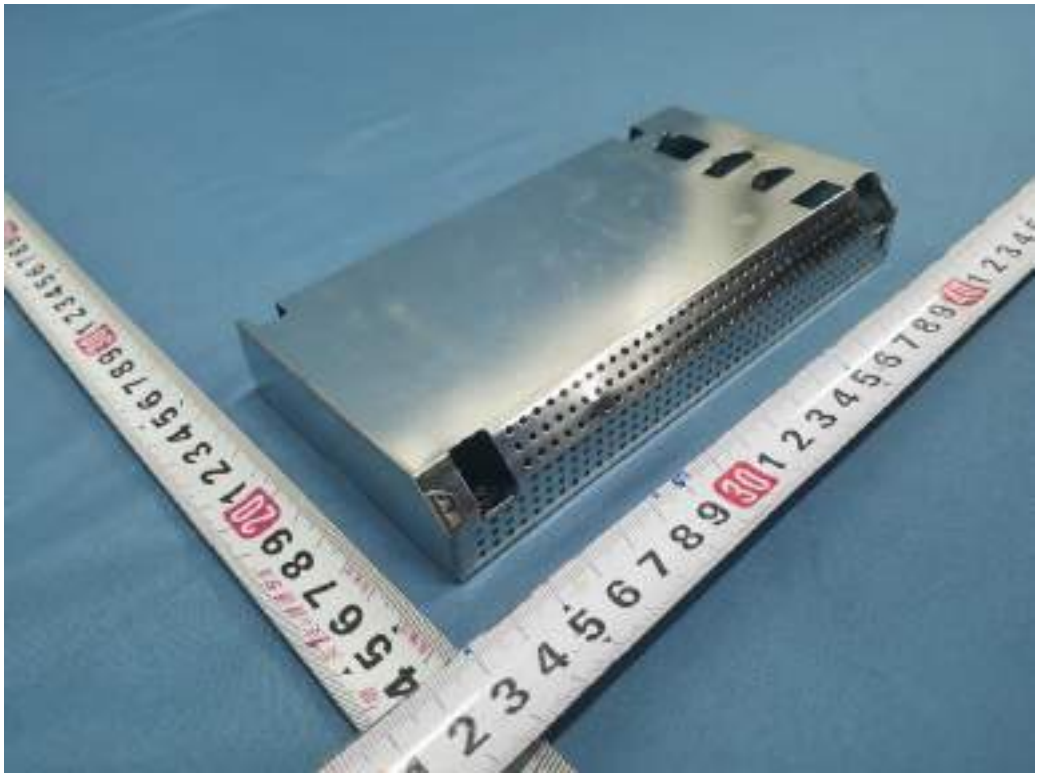


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Metal chassis view

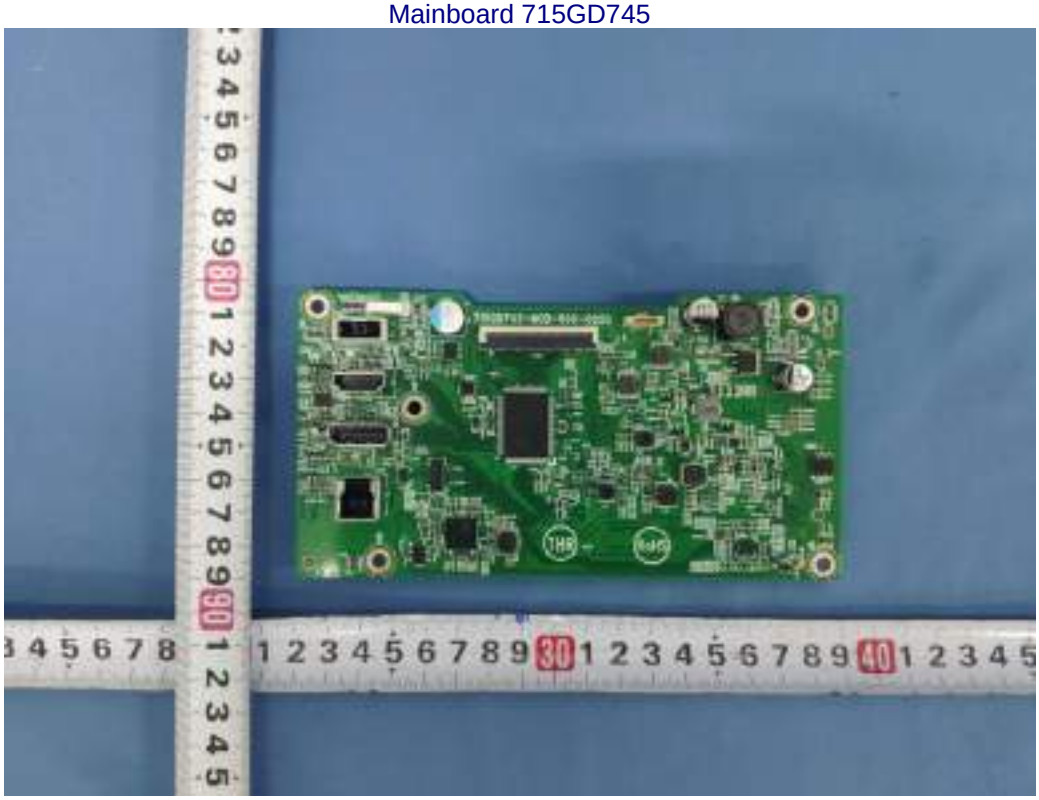


Metal chassis view

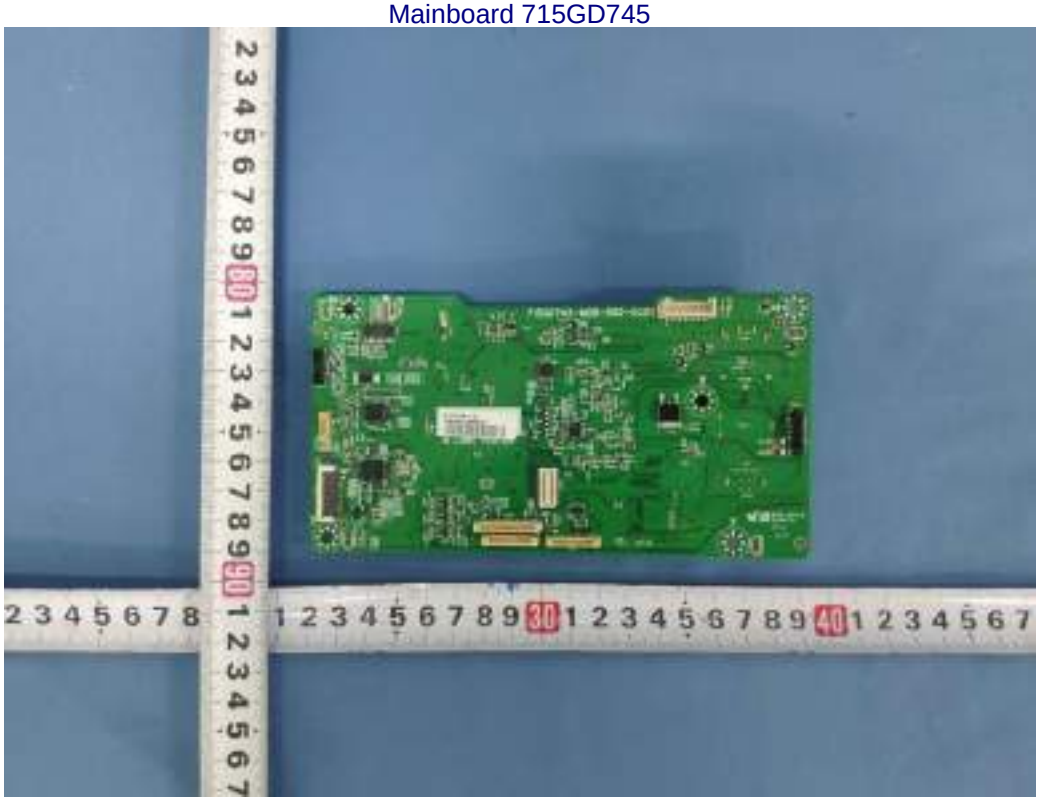


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Mainboard 715GD745

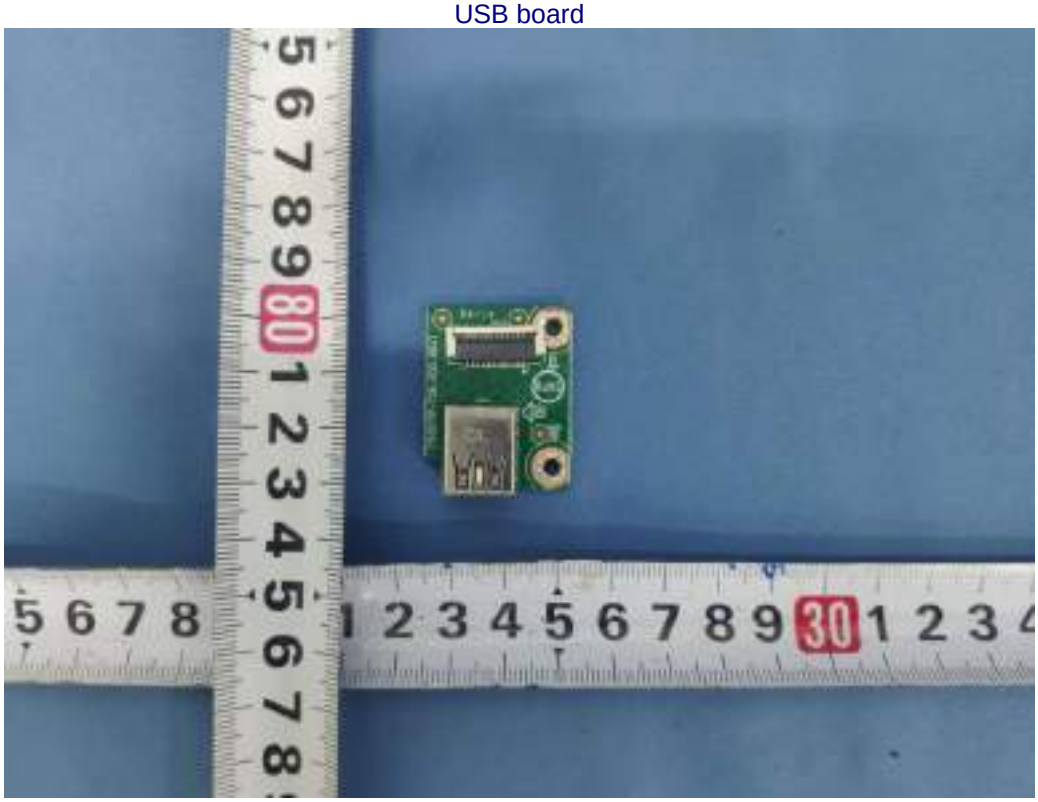


Mainboard 715GD745

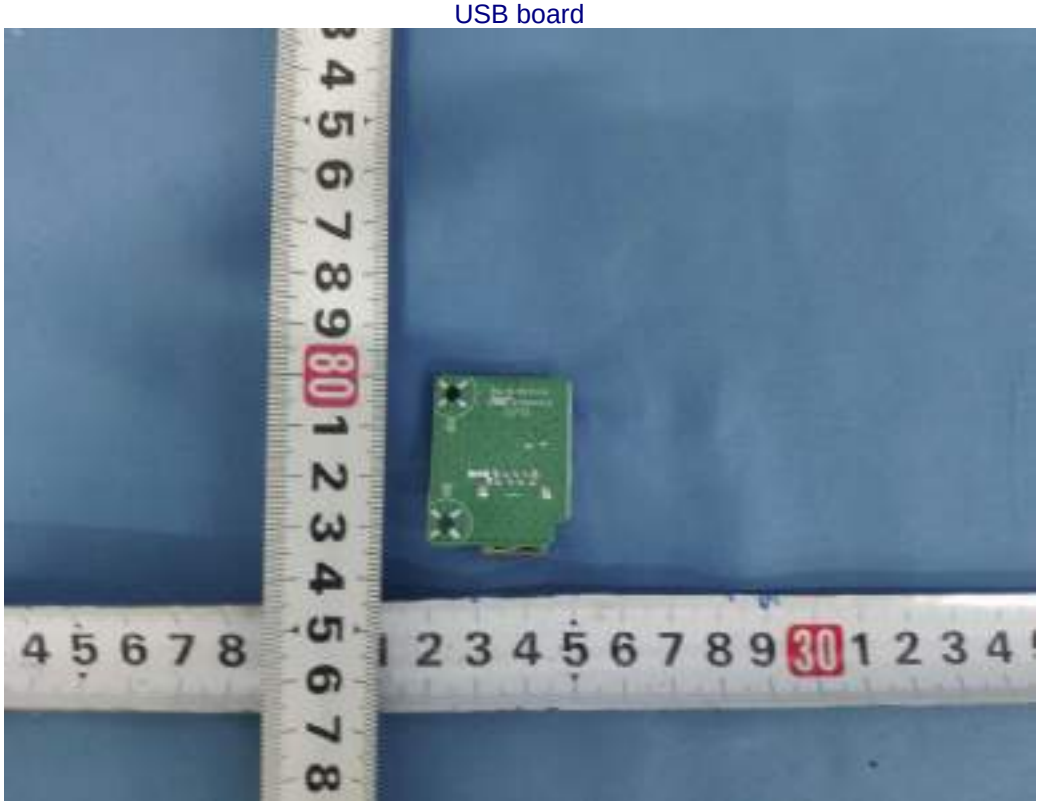


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USB board

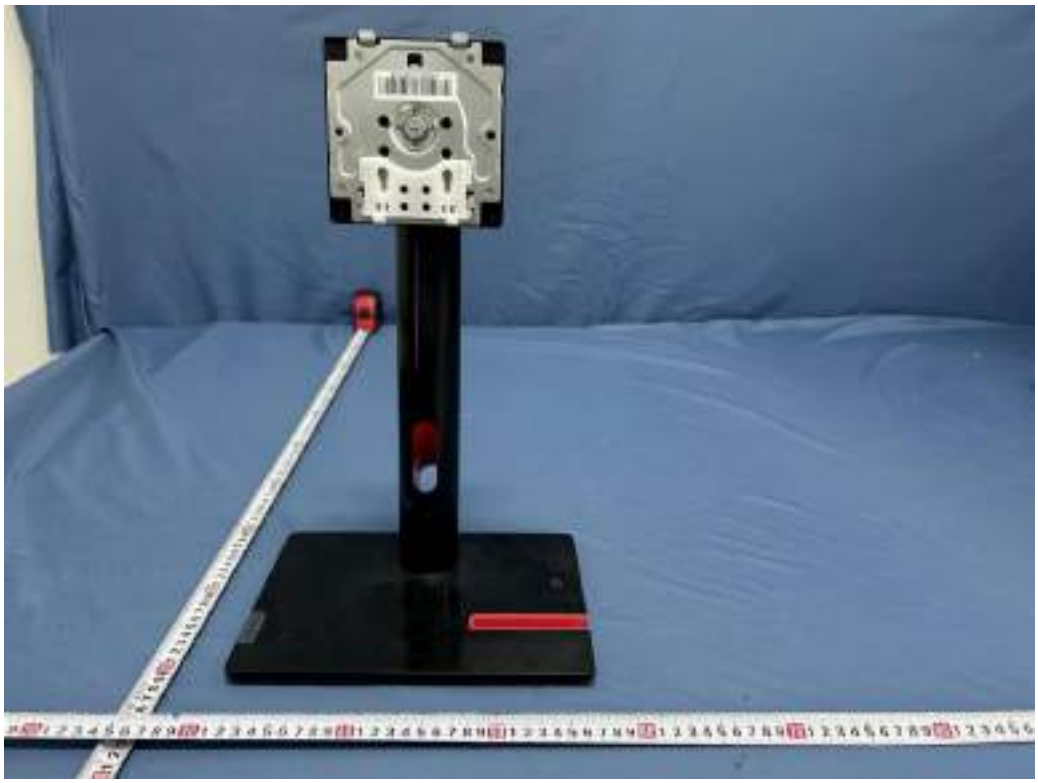


USB board

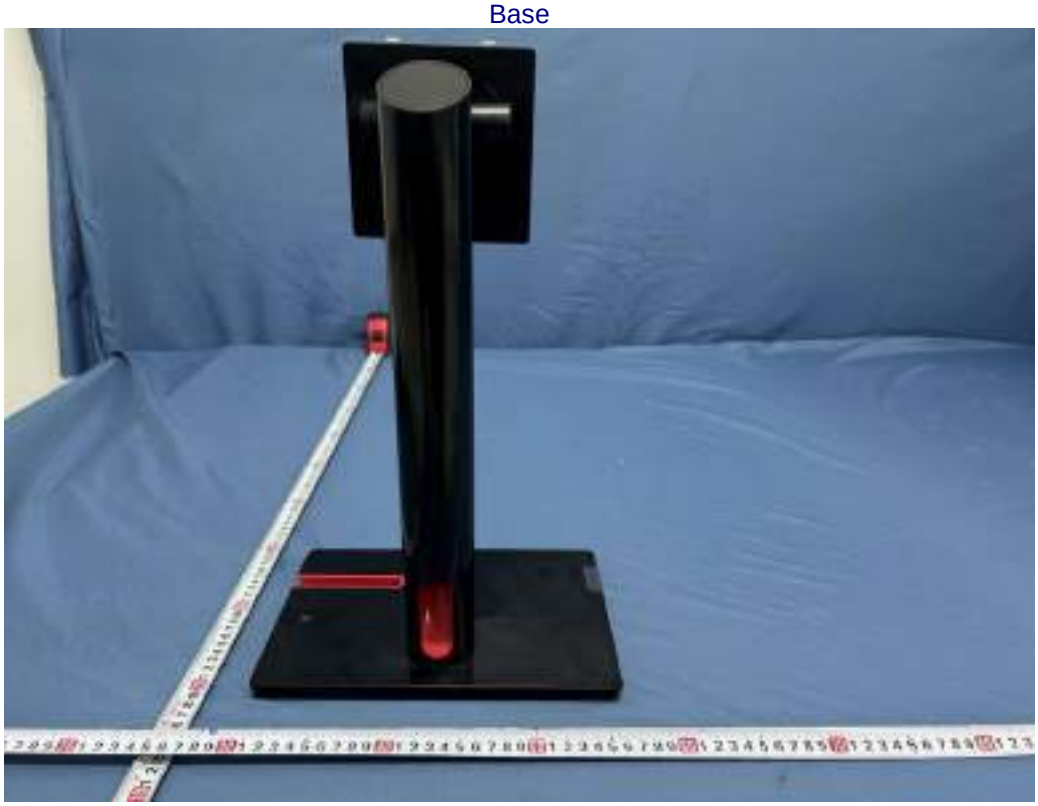


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Base



Base



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ATTACHMENT: CHINESE DIFFERENCES
Test results according to CB BULLETIN

Clause	Requirement - Test	Result - Remark	Verdict
1.1.2	GB 4943.1-2011 applies to equipment for use at altitudes not exceeding 5000m above sea level, primarily in regions with moderate or tropical climates. Amend the third dashed paragraph of 1.1.2 as: ——equipment intended to be used in vehicles, on board ships or aircraft, at altitudes greater than 5000m;	See main test report	N/A
1.4.5	After the third paragraph, add a paragraph: If the equipment is intended for direct connection to an AC mains supply, the tolerances on RATED VOLTAGE shall be taken as +10%,-10% unless a wider tolerance is declared by the manufacturer. The first dash paragraph "-the RATED VOLTAGE is 230V single -phase or 400V three-phase, in which case the tolerance shall be taken as +10% and -10%" of IEC 60950-1:2005 is deleted in GB 4943.1-2011		N/A
1.4.12.1	Tma in clause 1.4.12.1 amended as: Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 35 ℃, whichever is greater. Add note 1: For equipment not to be operated at tropical climatic conditions, Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 25 ℃, whichever is greater. Add note 2: For equipment is to be operated at 2000m-5000m above sea leave, its temperature test conditions and temperature limits are under consideration.	Considered.	P
1.5. 2	Add a note behind the first break off section in Clause 1.5.2: A component used shall comply with related requirements corresponding altitude of 5000m.	Must check with marketing china.	—
1.7	Add one paragraph before the last paragraph: The required marking and instruction should be given in normative Chinese unless otherwise specified.	Must be considered when market to China.	—

1.7.1	Based on the AC mains supply of China, the RATED VOLTAGE should be 220V (single phase) or 380V (three-phases) for single rated voltage, for RATED VOLTAGE RANGE, it should cover 220V or 380V (three-phases), for multiple RATED VOLTAGES, one of them should be 220V or 380V (three-phases) and set on 220V or 380V (three-phases) when manufactured. And the RATED FREQUENCY or RATED FREQUENCY RANGE should be 50Hz or include 50Hz.	Class III equipment supplied by a separately certified adaptor.	N/A

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1.7.2.1	Add requirements of warning for equipment intended to be used at altitudes not exceeding 2000m or at non-tropical climate regions: For equipment intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used at altitude not exceeding 2000m."  For equipment intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used in not-tropical climate regions."  If only the symbol used, the explanation of the symbol shall be contained in the instruction manual. The above statements shall be given in a language acceptable to the regions where the apparatus is intended to be used. If only the symbol used, the explanation of the symbol shall be contained in the instruction manual. The above statements shall be given in a language acceptable to the regions where the apparatus is intended to be used.	5000m and tropical.	N/A
2.7.1	Amended the first paragraph as: Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except special provisions. And the protective device shall meet the requirement of Clause 5.3. Delete note of Clause 2.7.1.	No such protective device	N/A

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2.9.2	First section of Clause 2.9.2 amended as two sections: Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature 40±2℃ and a relative humidity of (93±3)%. During this conditioning the component or subassembly is not energized. For equipment not to be operated at tropical climatic conditions, Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 48 h in a cabinet or room containing air with a relative humidity of (93±3) %. Th e temperature of the air, at all places where samples can be located, is maintained within 2 ℃ of a ny convenient value between 20 ℃ and 30 ℃ such that condensation does not occur. Due to pretreatment of equipment operated at high altitude area is humidity conditioning withstand hot shock, specific requirements are to be considered. Add note: For equipment to be operated at 2000 m - 5000m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered.	Class III equipment	N/A
2.10.3.1	Amend the third paragraph of Clause 2.10.3.1 to be: These requirements apply for equipment to be operated up to 2000 m above sea level. For equipment to be operated at more than 2000 m above sea level and up to 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of IEC 60664-1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.	Class III equipment	N/A
2.10.3.3 & 2.10.3.4	Add "(applicable for altitude up to 2000m)" in header of Table 2K、2L and 2M.	Class III equipment	N/A

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2.10.3.4	Add a new section above Table 2K and in Clause 2.10.3.4: Minimum CLEARANCES determined by above rules apply for equipment to be operated up to 2000m above sea level. For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1（ IEC 60664-1）. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of GB/T16935.1.	Class III equipment	N/A
3.2.1.1	Add a paragraph before the last paragraph: Plugs connected to AC mains supply shall comply with GB 1002 or GB 1003 or GB/T 11918 as applicable.	Class III equipment	N/A
4.2.8	Clause 4.2.8 cathode ray tubes quoted Clause 18 of GB8898-2011. Delete note of Clause 4.2.8.	No such equipment.	N/A
Annex E	Last section of Annex E amended as: For comparison of winding temperatures determined by the resistance method of this annex with the temperature limits of Table 4B, 35 °C shall be added to the calculated temperature rise. And add note: for equipment not to be operated at tropical climatic conditions, 25 ℃ shall be ad ded to the calculated temperature rise to compare with the temperature of Table 4B.	Thermocouple measurement method	N/A
Annex G.6	Change the second section of Clause G.6 to be: For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.	Must check with marketing into China.	—
Annex BB (informative)	Amended as : The differences between Chinese national standards GB 4943.1-2011 and GB 4943-2001.		P

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Annex DD (normative)	Added annex DD: Instructions for the new safety warning labels. DD.1 Altitude warning label  Meaning of the label: Evaluation for apparatus only based on altitude not exceeding 2000m, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used at altitude above 2000m . DD.2 Climate warning label  Meaning of the label: Evaluation for apparatus only based on temperate climate condition, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used in tropical climate region.	5000m and tropical	N/A
Annex EE (informative)	Added annex EE: Illustration relative to safety explanation in normative Chinese、Tibetan、Mongolian、Zhuang Language and Uighu.	Must be considered when market into China.	—
Other amendments	In accordance with the relevant CTL decisions and the amendments of IEC 60950-1, the specific requirements or mistakes in IEC standard are corrected or editorially modified in this part, Including clause 1.7, 2.1.1.7, 2.9.2, Table 2H, Figure 2H, F.8, F.9, M.3 and Annex U.	Considered.	P

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Quoting standards and reference documents	The principles of quoting and referring to other standards in Annex P and reference documents of IEC 60950-1 are as follows: If the date of the reference document is given, only that edition applies, excluding any subsequent corrigenda and amendments. However, parties to agreements based on this part are encouraged to investigate the possibility of applying the most recent editions of the reference documents. For undated references, the latest edition of the referenced document applies, including any corrigenda and amendments. For the usage of international standards in Chinese national standards and industry standards is various, in the aim of achieving easy operation and based on the requirements of GB/T 1.1 and GB/T 20000.2, when quoting an entire international standard in the normative quoting files and reference documents of Annex P of this part, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted; - If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted; - If the date of the national standard or industry standard is not given, the latest edition of the standard applies; - The national standard or industry standard number, corresponding international standard number and the consistency level code should be identified in parentheses behind the listed national standard or industry standard. When quoting several chapters or clauses of the international standard, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted;	Considered.	P

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	- If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted. Meanwhile, in order to retain the relevant information on international standards, informative annex CC is increased, which gives the table about the comparison of the normative quoting files and reference documents in IEC 60950-1: 2005 and GB4943.1-2011.		

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IEC60950_1G ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT **IEC 60950-1** **SINGAPORE NATIONAL DIFFERENCES** INFORMATION TECHNOLOGY EQUIPMENT – SAFETY – PART 1: GENERAL REQUIREMENTS			
Differences according to ..... :	Special National Conditions		
TRF template used:..... :	IECEE OD-2020-F3, Ed. 1.1		
Attachment Form No. ..... : **Attachment Originator**..... : **Master Attachment**..... :	SG_ND_IEC60950_1G Intertek Testing Services (Singapore) Pte Ltd 2022-07-08		
Copyright © 2022 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		
Chapter 4.2	**Special national conditions (if any)** Controlled goods under the Consumer Protection (Safety Requirements) Registration Scheme (CPS) are required to be tested to additional requirements stipulated by the Consumer Product Safety Office (CPSO) of Enterprise Singapore in Chapter 4.2 of the CPS information booklet. The CPS information booklet is updated on an ongoing basis. At the point of testing, refer to the latest copy of the CPS information booklet for the minimum edition of standard to apply for testing of products under the CPS scheme and any new requirements. Link to CPS information booklet: https://www.consumerproductsafety.gov.sg/files/cps-info-booklet.pdf		-
Clause 1	All appliances must be tested to 230 VAC, 50 Hz.	Class III equipment	N/A
2	Circuit diagrams must be indicated with component's values for products tested to IEC 60065 and IEC 60950.		P
4	Appliance fitted with voltage selector shall be tested as follows: Connect appliance to 230 VAC mains with voltage selector switch to settings not suitable for operation at 230 VAC.		N/A
5	All appliances (with tropical test requirements in applicable Standards) shall comply with the tropical condition test as stated in the relevant IEC Standards.		P

IEC60950_1G ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
7	All Class I appliances must be fitted with 3-pin mains plugs that are registered with the CPSO.	Class III equipment	N/A
8	a) All Class II appliances must be fitted with 2-pin mains plug complying with EN 50075. b) Class II appliances that are fitted with 3-pin mains plugs must use plugs that are registered with the CPSO.	Class III equipment	N/A
9	Detachable power cord set must be listed in the test report critical component list.		N/A
14	AC Adaptor incorporated with 13A socket-outlet to be tested to additional tests clauses 13, 17 and 18 of SS 145-3: 2020.		N/A
15	Supplier who is supplying AC adaptors with detachable interchangeable plug pins must include with its products, written instructions to inform customers on the type of detachable interchangeable plug pins that are approved and suitable to use in Singapore. These instructions are to be submitted to the Conformity Assessment Body for verification when applying for Certificate of Conformity.		N/A
16	For AC Adaptors supplied together with Personal Mobility Devices: 1. Registered Supplier to declare the model of the AC adaptor that is to be used with/ bundled together with the PMDs; 2. Registered Supplier to provide valid IEC 60950-1 or IEC 62368-1 test reports for certification and registration of the declared AC adaptor under the CPS scheme; and 3. Registered Supplier to provide the UL 2272 test report as a supporting document, showing that the listed AC adaptor in the UL 2272 test report is the model declared to be used with/ bundled together with the PMDs.		N/A
18	CD/ DVD ROMs (used in personal computers) to have test certificate showing that CD/DVD ROM drive has complied with IEC 60825- 1.		N/A
19	Modem card incorporated in the personal computer must be tested at set level (sub-clauses 5.1 & 6 of IEC 60950) or at component level.		N/A
20	Powerline Ethernet Adaptor incorporated with 13A socket-outlet, to be tested to additional test clauses 13, 17 & 18 of SS 145-3: 2020.		N/A

IEC60950_1G ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
46	Plasma/LCD display monitor tested to IEC 60950 would require additional test to clauses 9 (related to antenna only), 10.1, 10.2, 10.3 and 12.5 of IEC 60065.		N/A
	Other additional requirements which may be included in Chapter 4.2 of the information booklet in ongoing basis at the time of testing.		N/A

IEC60950_1G ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT **IEC 60950-1** **KOREA NATIONAL DIFFERENCES** (Information technology equipment – Safety – Part 1: General requirements)			
Differences according to ..... :	K 60950-1(2011-12)		
TRF template used: ..... :	IECEE OD-2020-F3, Ed. 1.1		
Attachment Form No..... : Attachment Originator ..... : Master Attachment..... :	KR_ND_IEC60950_1G KTL 2022-05-20		
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1.5.1	Plugs for the connection of the apparatus to the supply mains shall comply with the Korean plug standard sheets(KSC 8305)		N/A

	Special national conditions		
Voltage	The marking of rated voltage or rated voltage range, for appliances intended to be connected to the supply mains, shall include 110 V, 220 V or 380 V.	Class III equipment	N/A
Frequency	Only appliances having supply frequency of 60Hz or a frequency range including 60Hz are accepted.	Class III equipment	N/A
Instruction	Instruction manuals shall be in Korean	Should be checked when market into the country.	—

ATTACHMENT TO TEST REPORT
IEC 60950-1:2005, IEC 60950- 1:2005/AMD1:2009, IEC 60950-1:2005/AMD2:2013
ISRAELI NATIONAL DIFFERENCES
(INFORMATION TECHNOLOGY EQUIPMENT – SAFETY: GENERAL REQUIREMENTS)

Differences according to .....:	SI 60950 Part 1 (2015)
Attachment Form No. .....:	IL_ND_IEC60950_1F
Attachment Originator .....:	Standards Institution of Israel
Master Attachment .....:	Date 2018-08-02

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	National Differences		—
1.6	**Power interface**		—
1.6.1	**AC Power distribution systems** At the end of the clause, the following note shall be added: Note: In Israel, the clause is subject to the Electricity Law. 1954, Electricity Regulations (Earthings and protective means against electrification for voltages up to 1,000 V), 1991, with their updates.	Must be considered when marketing into Israel.	—
1.7	**Marking and instructions**		—
1.7.1	**Power rating and identification markings** At the beginning of the clause, subclause 1.7.1.201 shall be added as follows:		—
1.7.1.201	**Marking in the Hebrew language** The marking in the Hebrew language shall be in accordance with the Consumer Protection Order (Marking of goods), 1983. In addition to the marking required by clause 1.7.1, the following details shall be marked in the Hebrew language: 1.Name of the apparatus and its commercial designation; 2.Manufacturer's name and his address; if the apparatus is imported, also the importer's name and his address; 3.Manufacturer's registered trademark, if any; 4.Name of the model and serial number; 5.Country of manufacture. The details shall be marked on the apparatus or on its packaging, or on a label well attached to the apparatus or its packaging, by bonding or sewing, such that the label cannot be easily removed.	Must be considered when marketing into Israel.	—
1.7.2	**Safety instructions and marking**		—
1.7.2.1	**General** - The following shall be added at the end of the clause: All the instruction and all the warnings related to safety shall also be written also in the Hebrew language.	Must be considered when marketing into Israel.	—
-	At the end of clause 1, clause 1.201 shall be added as follows:		

1.201	**Power consumption in standby mode** The equipment shall comply with the requirements of the Energy Sources Regulations (Maximum electrical power in standby mode for domestic and office electrical appliances), 2011, with a permitted deviation of up to 10 %	Must be considered before marketed in Israel.	—
2	**Protection from hazards** At the end of the clause, clause 2.201 shall be added as follows:		—
2.201	**Prevention of electromagnetic interferences**		—
2.201.1	Emission of electromagnetic interferences shall be tested in accordance with Israeli Standard SI 961 Part 6.1 or in accordance with the Israeli Standard that is an adoption of the International Standard CISPR 32. Note: At the time of writing this Standard, the Israeli Standard that is an adoption of the International Standard CISPR 32 is in preparation. Until publication of the Israeli Standard. the International Standard CISPR 32 may be used for testing the emission of electromagnetic interference. If the apparatus contains transmitters, it shall be tested according to Israeli Standard SI 961 Part 48.1 and according to another relevant part of the SI 961 Part 48 series or from the EN 301 489 series, according to the type of transmitter in the apparatus.	Must be considered before marketed in Israel.	—
2.201.2	Immunity to emission of electromagnetic interferences shall be tested in accordance with Israeli Standard SI 961 Part 6.2.	Must be considered before marketed in Israel.	—
2.201.3	Emission of electromagnetic interferences to the public electricity network shall be tested in accordance with the Israeli Standards SI 961 Parts 12.3 and 12.5 or in accordance with the Israeli Standards SI 61000 Part 3.12 and SI 961 Part 12.11, according to the current consumption of the equipment.	Must be considered before marketed in Israel.	—
3	**Wiring, connections and supply**		—
3.2	**Connection to a mains supply**		—
3.2.1	**Means of connection**		—
3.2.1.1	**Connection to an a.c. mains supply** After the NOTE, the following note shall be added: Note: In Israel, the supply plug shall comply with the requirements in Israeli Standard SI 32 Part I.I.	Refer to Summary of Testing in main test report.	—

	Special national conditions (if any)		—
	ANNEX P **Normative references** In place of some of the International Standards cited in the Standard and noted in this annex, the following Israeli Standards shall apply:	Must be considered before marketed in Israel.	—

The referenced International Standard	The substituted Israeli Standard	Comments
IEC 60065: 2001 Amendment 1	SI 60065 - Audio, video and similar electronic apparatus – Safety requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60065 - Edition 8.0: 2014-06
IEC 60227-1: 2007	SI 60227 Part l – Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60227-1 - Edition 3.0: 2007-10
IEC 60227-2: 1997 Amendment 1: 2003	SI 6022 7 Part 2 – Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V: Test methods	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60227-2 Edition 2.1: 2003-04
IEC 60245 (all parts)	SI 60245 (all parts) - Rubber insulated cables - Rated voltages up to and including 450/750 V	The Israeli Standard series, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard series IEC 60245 (all parts)
IEC 60309 (all parts) [(a)]	SI 1109 Part l - Plugs, socket-outlets and couplers for industrial purposes: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60309-1 - Fourth edition: 1999-02
	SI 1109 Part 2 - Plugs, socket- outlets and couplers for industrial purposes: Dimensional interchangeability requirements for pin and contact-tube accessories	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60309-2 - Fourth edition: 1999-4

The referenced International Standard	The substituted Israeli Standard	Comments
IEC 60317 (all parts) [a]	SI 1067 Part 1 – Enamelled [b] round copper wires with high mechanical properties	The Israeli Standard is identical to the International Electrotechnical Commission Standard IEC 317-1: 1980-02
	SI 1067 Part 2 – Self-fluxing enamelled [b] round copper wires	The Israeli Standard is identical to the International Electrotechnical Commission Standard IEC 317-1: 1980-02
	SI 1067 Part 3 – enamelled [b] round copper wires with a temperature index of 180 ℃	The Israeli Standard is identical to the International Electrotechnical Commission Standard IEC 317-1: 1980-02
IEC 60320 (all parts) [a]	SI 60320 Part 1 – Appliance couplers for household and similar general purposes: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60320-1 - Edition 2.1: 2007-11
	SI 60320 Part 2.1 – Appliance couplers for household and similar general purposes: Sewing machine couplers	The Israeli Standard, excluding nation al modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60320-2-1 - Second edition: 2000-07
	SI 60320 Part 2.2 – Appliance couplers for household and similar general purposes: Interconnection couplers for household and similar equipment	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60320-2-2 - Second edition: 1998-08
	SI 60320 Part 2.3 – Appliance couplers for household and similar general purposes: appliance coupler with a degree of protect ion higher than IPX0	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60320-2-3 - First edition: 1998-09
IEC 60364-1: 2001	Electricity Law, 1954, with its Regulations and updates	
IEC 60730-1: 1999 Amendment 1 (2003)	SI 60730 Part I - Automatic electrical controls: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60730-1 - Edition 5.0: 2013-11

The referenced International Standard	The substituted Israeli Standard	Comments
IEC 60825-1	SI 60825 Part 1 – Safety of laser products: Equipment classification and requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60825-1 – Second edition: 2007-03
IEC 60825-2	SI 60825 Part 2 – Safety of laser products: Safety of optical fibre communication systems (OFCS)	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60825-2 – Edition 3.2: 2010-12
IEC 60825-12	SI 60825 Part 2 – Safety of laser products: Safety of free space optical communication systems used for transmission of information	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60825-12 – First Edition: 2004-02
IEC 60947-1: 2004	SI 60947 Part l – Low-voltage switchgear and controlgear: General rules	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60947-1 – Edition 5.0: 2007-06
IEC 60998-1	SI 60998 Part 1 – Connecting devices for low-voltage circuits for household and similar purposes: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60998-1 – Second Edition: 2002-12
IEC 60999-1	SI 60999 Part 1 – Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units: General requirements and particular requirements for clamping units for conductors from 0.2 mm^2 up to 35 mm^2 (included)	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60999-1 – Second Edition: 1999
IEC 60999-2	SI 60999 Part 2 – Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units: Particular requirements for clamping units for conductors above 35 mm^2 up to 300 mm^2 (included)	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60999-2 – Second Edition: 2003-05

The referenced International Standard	The substituted Israeli Standard	Comments
IEC 61058-1: 2000	SJ 61058 Part l - Switches for appliances: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 61058-1 – Edition 3.2: 2008-04
IEC 62471: 2006	SI 62471 – Photobiological safety of lamps and lamp systems	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 62471 (CIE S 009: 2002) – First edition: 2006-07
ISO 262	SI 876 – ISO general purpose metric screw thread: Basic dimension and selected sizes for screws	The Israeli Standard is based on the International Organization for Standardization publications ISO R 724 - 1968 ISO 262 - 1973
ISO 3864 (all parts) [(a)]	SI 3864 Part l – Graphic symbols – Safety colours and safety signs: Design principles for safety signs in workplaces and public areas	The Israeli Standard, excluding national modifications and additions, is identical to the International Organization for Standardization Standard ISO 3864-1: First edition: 2002-05-15
Notes: (a) In the International Standard series, there are parts not yet adopted as Israeli Standards. This table notes the existing Israeli Standards, and in the Comments column, the corresponding parts of the International Standard series. (b) Not relevant to the translation.		

The following shall be added to the annex:	
Israeli Standards	
SI 32 Part 1.1	Plugs and socket-outlets for household and similar purposes: Plugs and socket-outlets for single phase up to 16A – General requirements
SI 961 Part 6.1	Electromagnetic compatibility: Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement
SI 961 Part 6.2	Electromagnetic compatibility: Information technology equipment – Immunity characteristics - Limits and methods of measurement
SI 961 Part 12.3	Electromagnetic compatibility: Limits – Limits for harmonic current emissions (equipment input current ≦16 A per phase)
SI 961 Part 12.5	Electromagnetic compatibility: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≦ 16 A per phase and subject to conditional connection
SI 961 Part 12.11	Electromagnetic compatibility: Limits – Limitation of voltage changes voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current ≦ 75 A and subject to conditional connection
SI 961 Part 48 (all parts)	Electromagnetic compatibility: Electromagnetic compatibility (EMC) for radio equipment and services
SI 961 Part 48.1	Electromagnetic compatibility: Electromagnetic compatibility (EMC) for radio equipment and services – Common technical requirements
SI 61000 Part 3.12	Electromagnetic compatibility: Limits – Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and ≦ 75 A per phase

Israeli Laws, Regulations and documents Electricity Law, 1954, with its Regulations and updates Consumer Protection Order (Marking of goods), 1983, Kovetz HaTakanot 4465 dated 1983-02-24, with its updates Electricity Regulations (Earthings and protective means against electrification for voltages up to 1,000 V), 1991, with their updates Energy Sources Regulations (Maximum electrical power in standby mode for domestic and office electrical appliances), 2011, with its updates	
European Standards	
EN 301 489 (all parts)	Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services

Product Noise Declaration in Compliance with ISO 7779 and ISO 9296

ThinkCentre M70q Gen 5

Ⅰ.Configuration Information[1]

Components	High Configuration
FFs	1L
CPU	Intel i7-14700T 1.3GHz/20C/32T/33M 35W vPro
Memory	32GB 5600 DDR5 SODIMM
SSD	M.2 2280 Performance 1TB PCIe Gen4
VGA	Onboard graphic
PSU	Tiny PC 135W 89% adapter
FSC Mode	BP

Ⅱ.Machine Types

MT	12TD,12TE,12TF,12TG,12TN,12TQ,12TR,12TS

Ⅲ.Acoustic Noise Emissions Declaration[2]

High Configuration			
Stress Mode	L_{WAd}(bels)	L_{pAm}(dBA)	
		Operator	Bystander
Idle	2.8	19	18
Disk Operating	2.9	21	20
Test Photos			

Legend:

L_{WAd} -Declared (upper limit) A-weighted sound power levels for a random sample of machines, in bels.

L_{pAm} -Measured A-weighted sound pressure levels for a random sample of machines, in dBA

Operator -Mean value of A-weighted sound pressure levels at the operator position, for a random sample of machines, in dBA. The operator position is located 0.5m away from the front of unit.

Bystander -Mean value of A-weighted SPLs averaged over four bystander positions, for a random sample of machines, in dBA. The bystander position is located 1.0m away from the edge of unit

Idle -Indicates idle condition (system is powered on, but no disk activity).

Disk Operating -Indicates HDD or SSD operating condition (disk drive is randomly seeking).

Notes:

1. All test are performed according to ISO 7779 and declared according to ISO 9296.
2. The declared acoustic noise value is based on a typically configured product. If optional items be added or removed, the acoustic noise value should be changed correspondingly.

Approved by:Sophia Liu ***Signed by: yangwp3***

Issued Date: 2024/3/1

Ⅳ.Appendix: CNAS 17025 certificate



China National Accreditation Service for Conformity Assessment

LABORATORY ACCREDITATION CERTIFICATE

(Registration No. CNAS L2356)

Lenovo (Beijing) Co., Ltd. Reliability Laboratory

(Legal Entity: Lenovo (Beijing) Co., Ltd.)

Building 2, No.10, Xibeiwang East Road, Haidian District, Beijing, China

is accredited in accordance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence to undertake the service described in the schedule attached to this certificate.

The scope of accreditation is detailed in the attached schedule bearing the same registration number as above. The schedule forms an integral part of this certificate.

Effective Date: 2023-01-18

Expiry Date: 2029-01-18

Signed on behalf of China National Accreditation Service for Conformity Assessment

China National Accreditation Service for Conformity Assessment (CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation scheme for conformity assessment. CNAS is a signatory of the International Laboratory Accreditation Cooperation Mutual Recognition Arrangement (ILAC-MRA) and the Asia Pacific Accreditation Cooperation Mutual Recognition Arrangement (APAC MRA).

The validity of the certificate can be checked on CNAS website at http://www.cnas.org.cn/english/findanaccreditedbody/index.shtml

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Broadband Forum (BBF) (https://www.broadband-forum.org/)

China Communications Standards Association (http://www.ccsa.org/cn/english)

China Electronics Standardization Institute (CESI) (http://www.en.cesi.cn/)

CXL Consortium (https://www.computeexpresslink.org/)

ETSI-NFV (http://portal.etsi.org/portal/server.pt/community/NFV/367)

HDBaseT (https://hdbaset.org/)

MIPI Alliance (https://www.mipi.org/)

NVM Express (http://nvmexpress.org/)

OMG-Cloud Working Group (http://www.cloud-council.org)

Open Compute Project (OCP) (http://www.opencompute.org/)

Open Data Center Committee (ODCC) (http://www.opendatacenter.cn/)

Open Fabrics Alliance (OFA) (https://www.openfabrics.org/)

Open Grid Forum (http://ogf.org)

OpenInfra Foundation (https://openinfra.dev/)

PCI Industrial Computer Manufacturer Group (PICMG) (https://www.picmg.org/)

PCI-SIG (https://pcisig.com/)

SNIA (http://www.snia.org/)

TeleManagement Forum (http://www.tmforum.org/)

The Green Grid (http://www.thegreengrid.org)

The Open Group (http://www.opengroup.org)

Unified Extensible Firmware Interface (http://www.uefi.org/)

Universal Chiplet Interconnect Express (UCIe) (https://www.uciexpress.org/)

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"Gheorghe Asachi" Technical University of Iaşi (http://www.tuiasi.ro/en/)

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Logitrain (https://logitrain.edu.au)

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National Technical University of Athens (http://www.ntua.gr/)

Paul Sabatier University (https://www.univ-tlse3.fr/)

Research Center on Scientific and Technical Information (CERIST) (http://www.cerist.dz/index.php/en/)

Ruprecht-Karls-University Heidelberg (https://www.uni-heidelberg.de/en)

Shanghai Jiao Tong University (http://en.sjtu.edu.cn/)

Swami Rama Himalayan University (http://www.srhu.edu.in/)

Technische Universitaet Dresden (https://tu-dresden.de/)

Texas Tech University (http://www.ttu.edu/)

Universidade de Sao Paulo (https://www5.usp.br)

University of California (https://www.universityofcalifornia.edu/)

University of New Hampshire (http://unh.edu)

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HP, Inc (http://www.hp.com/)

IBM (http://www-03.ibm.com/systems/power/)

Inspur Electronic Information Industry Co.,Ltd. (https://zh.ieisystem.com/)

Intel Corporation (http://www.intel.com)

Lenovo (http://www.lenovo.com)

Microsoft Corporation (http://www.microsoft.com)

Supermicro (http://www.supermicro.com)

Verizon (http://www.verizon.com)

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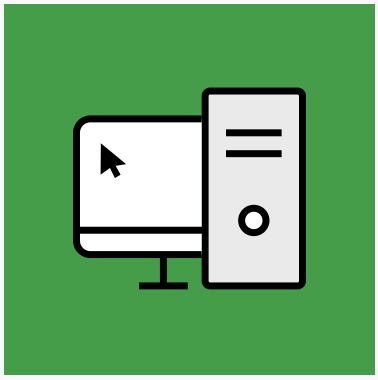
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ThinkCentre M70q Gen 5



COMPUTERS & DISPLAYS

Product Summary:

Product Type:	Desktop
Registered In:	United States
Manufacturer:	Lenovo
EPEAT Tier:	Gold
Registration Date:	2024-06-14
Product Status:	Active
EPEAT Climate+:	Achieved 2024-06-14
Manufacturer Part Number(s):	12TD, 12TE, 12TF, 12TG, 13E2

All unique product identifiers existing for this product may not be listed here. If the unique product identifier you are looking for is not listed, please contact EPEAT at EPEAT@GEC.org.

EXPORT PRODUCT SUMMARY

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable "required" criteria. Click here to see a list of the required criteria for this product category.

This product has met the necessary required criteria.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

Products that meet all required criteria and	Products that meet all required criteria and	Products that meet all required criteria and

achieve **less than 50%** of the optional points are rated at **EPEAT Bronze**	achieve **50 - 74%** of the optional points are rated at **EPEAT Silver**	achieve **75 - 100%** of the optional points are rated at **EPEAT Gold**

The optional criteria for this product category and optional points achieved by this product are listed below.

Optional Criteria	Scores
4.1 Substance Management	**11 / 16**
(4.1.2.1) Restrictions of the use of cadmium	1
(4.1.4.1) Restriction of the use of beryllium	1
(4.1.5.2) Further reduction of bromine and chlorine content of plastic materials	0
(4.1.6.1) Avoidance or elimination of substances on EU REACH Annex XIV (authorization list)	1
(4.1.6.2) Reduction of substances on the EU REACH Candidate List of SVHCs	0
(4.1.8.1) Chemical assessment and selection	0
(4.1.9.1) IEC 62474 declarable substances	1
(4.1.9.2) Requesting substance inventory	1
(4.1.9.3) Acquiring substance inventory	2
(4.1.10.1) Reduce fluorinated gas emissions from flat panel display manufacturing	2
(4.1.10.2) Reduce fluorinated greenhouse emissions from semiconductor production	2
4.4 Product longevity/life-cycle extension	**2 / 2**
(4.4.2.2) Publicly available service information	1
(4.4.2.5) Product upgradeability and repairability	1
4.5 Energy Conservation	**1 / 3**

(4.5.1.4) Energy efficiency for external power supplies exceeding International External Power Supply Efficiency Level VI	1
(4.5.1.5) Product energy consumption less than the ENERGY STAR Maximum Energy Limit	0

4.7 Packaging — 2 / 2

(4.7.3.2) Packaging composed of recycled, and/or biobased, and/or sustainably forested content	1
(4.7.4.1) Offering of a bulk packaging option	1

4.8 Life cycle assessment and carbon footprint — 6 / 6

(4.8.1.1) Product life cycle assessment and public disclosure of analyses	2
(4.8.1.2) Product specific greenhouse gas emissions—product carbon footprint	2
(4.8.2.1) Corporate carbon footprint	1
(4.8.2.2) Greenhouse gas emissions from product transport	1

4.9 Corporate Environmental Performance — 9 / 9

(4.9.1.2) Third party certified environmental management system (EMS) for supplier manufacturing facilities	1
(4.9.2.2) Corporate environmental performance reporting by suppliers	1
(4.9.3.1) Energy management system/energy performance improvement –manufacturers	1
(4.9.3.2) Energy management system/energy performance improvement for suppliers	2
(4.9.4.1) Renewable energy use by manufacturer	2
(4.9.4.2) Renewable energy use by manufacturer suppliers	2

4.10 Corporate social responsibility	**2 / 6**
▪ (4.10.1.1) Socially responsible manufacturing: Labor	0
▪ (4.10.1.2) Socially responsible manufacturing: OHS	0
▪ (4.10.2.2) Participation in an in-region program that advances responsible sourcing of conflict minerals	1
▪ (4.10.2.3) Smelter and refiner participation in OECD-aligned third party mechanisms	1
TOTAL OPTIONAL CRITERIA SCORE:	**33 / 44**

Please note that it is not required for a product to achieve any optional points.

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A) to the product are not included in the Total Optional Criteria Score, and are not reflected above.

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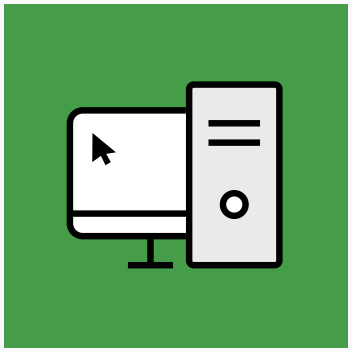
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Lenovo ThinkCentre Tiny-In-One 24 Gen 5



RETURN TO SEARCH

ThinkCentre Tiny-in-One (TIO) 24 Gen 5



COMPUTERS & DISPLAYS

Product Summary:

Product Type:	Monitors
Registered In:	United States
Manufacturer:	Lenovo
EPEAT Tier:	Gold
Registration Date:	2023-06-14
Product Status:	Active
EPEAT Climate+:	Achieved 2023-10-18
Manufacturer Part Number(s):	12NA

All unique product identifiers existing for this product may not be listed here. If the unique product identifier you are looking for is not listed, please contact EPEAT at EPEAT@GEC.org.

EXPORT PRODUCT SUMMARY

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable "required" criteria. Click here to see a list of the required criteria for this product category.

This product has met the necessary required criteria.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

Products that meet all required criteria and achieve **less than 50%** of the optional points are rated at **EPEAT Bronze**	Products that meet all required criteria and achieve **50 - 74%** of the optional points are rated at **EPEAT Silver**	Products that meet all required criteria and achieve **75 - 100%** of the optional points are rated at **EPEAT Gold**

The optional criteria for this product category and optional points achieved by this product are listed below.

Optional Criteria	Scores
4.1 Substance Management	**13 / 16**
(4.1.2.1) Restrictions of the use of cadmium	1
(4.1.4.1) Restriction of the use of beryllium	1
(4.1.5.2) Further reduction of bromine and chlorine content of plastic materials	0
(4.1.6.1) Avoidance or elimination of substances on EU REACH Annex XIV (authorization list)	1
(4.1.6.2) Reduction of substances on the EU REACH Candidate List of SVHCs	0
(4.1.8.1) Chemical assessment and selection	2
(4.1.9.1) IEC 62474 declarable substances	1
(4.1.9.2) Requesting substance inventory	1
(4.1.9.3) Acquiring substance inventory	2
(4.1.10.1) Reduce fluorinated gas emissions from flat panel display manufacturing	2
(4.1.10.2) Reduce fluorinated greenhouse emissions from semiconductor production	2
4.2 Materials Selection	**3 / 3**
(4.2.1.2) Higher post-consumer recycled, ITE-derived post-consumer recycled plastic, or bio-based content	2
(4.2.1.3) Post-consumer recycled, ITE-derived post-consumer recycled plastic	1
4.4 Product longevity/life-cycle extension	**1 / 2**
(4.4.2.2) Publicly available service information	1
(4.4.2.5) Product upgradeability and repairability	0
4.5 Energy Conservation	**1 / 2**
(4.5.1.5) Product energy consumption less than the ENERGY STAR Maximum Energy Limit	1
4.7 Packaging	**1 / 2**

(4.7.3.2) Packaging composed of recycled, and/or biobased, and/or sustainably forested content	1
(4.7.4.1) Offering of a bulk packaging option	0
4.8 Life cycle assessment and carbon footprint	**6 / 6**
(4.8.1.1) Product life cycle assessment and public disclosure of analyses	2
(4.8.1.2) Product specific greenhouse gas emissions—product carbon footprint	2
(4.8.2.1) Corporate carbon footprint	1
(4.8.2.2) Greenhouse gas emissions from product transport	1
4.9 Corporate Environmental Performance	**9 / 9**
(4.9.1.2) Third party certified environmental management system (EMS) for supplier manufacturing facilities	1
(4.9.2.2) Corporate environmental performance reporting by suppliers	1
(4.9.3.1) Energy management system/energy performance improvement –manufacturers	1
(4.9.3.2) Energy management system/energy performance improvement for suppliers	2
(4.9.4.1) Renewable energy use by manufacturer	2
(4.9.4.2) Renewable energy use by manufacturer suppliers	2
4.10 Corporate social responsibility	**2 / 6**
(4.10.1.1) Socially responsible manufacturing: Labor	0
(4.10.1.2) Socially responsible manufacturing: OHS	0
(4.10.2.2) Participation in an in-region program that advances responsible sourcing of conflict minerals	1
(4.10.2.3) Smelter and refiner participation in OECD-aligned third party mechanisms	1
TOTAL OPTIONAL CRITERIA SCORE:	**36 / 46**

Please note that it is not required for a product to achieve any optional points.

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A) to the product are not included in the Total Optional Criteria Score, and are not reflected above.

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Annex B2 - Product environmental attributes
Computers and computer monitors

The declaration may be published only when all rows and/or fields marked with * are filled-in (N/A for not applicable). Additional information regarding each item may be found under P15.

Brand *	***Lenovo***	Logo
Company name *	***Lenovo***	
Contact information * e-mail address	***Lenovo Environmental Social and Governance*** ***environment@lenovo.com***	
Internet site *	***https://www.lenovo.com/us/en/sustainability-resources/***	
Additional information	***The latest version of this document can be found at:*** ***http://www.lenovo.com/ecodeclaration***	

The company declares (based on product specification or test results based obtained from sample testing), that the product conforms to the statements given in this declaration.	
Type of product *	***Desktop Computer***
Commercial name *	***ThinkCentre M70q Gen5***
Model number *	***12TD,12TE,12TF,12TG***
Issue date *	***2024-04-08***
Intended market *	☒ **Global** ☒ **Europe** ☒ **Asia, Pacific & Japan** ☒ **Americas** ☐ **Other**
Additional information	***EPEAT(12TD,12TE,12TF,12TG);Energy Star(12TD,12TE,12TF,12TG);TCO(12TD,12TE,12TF,12TG)***

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

About Annex B2
Annex B2 reflects Product environmental attributes relevant for Computers and Computer Monitors. The following items from the ECMA-370 Main body are not shown in the template:
P4.1 – P4.3 Consumable materials
P9.1 TEC and Print speed
P10.2 - P10.3 Chemical emissions from printing products
P11.1 - P11.3 Consumable materials for printing products.

Anexo PROPOSTA ITEM 1 - ER SOLUÇÕES (1661785) SEI 2025.001317 / pg. 384

Model number *	***12TD,12TE,12TF,12TG***	**Logo**	Lenovo
Issue date *	***2024-04-08***		

Product environmental attributes - Legal requirements		**Requirement met**		
Item		Yes	No	N/A
P1	**Hazardous substances and preparations**			
P1.1*	Products comply with current European RoHS Directive. (See legal reference and NOTE B1)	☒	☐	
P1.2*	Products do not contain Asbestos (See legal reference) Comment: Legal reference has no maximum concentration value.	☒	☐	
P1.3*	Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide (See legal reference). Comment: Legal reference has no maximum concentration values	☒	☐	
P1.4*	Products do not contain more than; 0,005% polychlorinated biphenyl (PCB), 0,005% polychlorinated terphenyl (PCT) in preparations (See legal reference)	☒	☐	
P1.5*	Products do not contain more than 0,1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP (See legal reference)	☒	☐	
P1.6*	Parts with direct and prolonged skin contact do not release nickel in concentrations above 0,5 μg/cm²/week (See legal reference) Comment: Max limit in legal reference when tested according to EN1811:2011-5	☒	☐	☐
P1.7*	REACH Article 33 information about substances in articles is available at (add URL or mail contact): ***https://www.lenovo.com/us/en/Lenovo-REACH-SVHC-Disclosure***	☒	☐	☐
P2	**Batteries**			
P2.1*	If the product contains a battery or an accumulator, the battery/accumulator is labeled with the disposal symbol. Information on proper disposal is provided in user manual. (See legal reference)	☒	☐	☐
P2.2*	Batteries or accumulators do not contain more than 0,0005% of mercury or 0,002% of cadmium. (See legal reference)	☒	☐	☐
P2.3*	Batteries and accumulators are readily removable. (See legal reference)	☒	☐	☐
P2.4*	Documentation includes the number of cycles the (secondary) battery can withstand. (See legal reference)	☒	☐	☐
P2.5*	When internal batteries of a notebook computer cannot be “accessed and replaced by a nonprofessional user”, the related text is present and legible on the external packaging (See legal reference)	☒	☐	☐
P3	**Conformity verification & Eco design (ErP)**			
P3.1*	The product is CE-marked to show conformance with applicable legal requirements (see legal reference). The Declaration of Conformity can be requested at (add link or e-mail address): ***https://www.lenovo.com/us/en/compliance/eu-doc for EU*** ***https://www.lenovo.com/us/en/compliance/uk-doc for UK***	☒	☐	☐
P3.2*	The product complies with the applicable Eco design requirements for energy-related products, (See legal reference)	☒	☐	☐
	Required information is; ☒ given in item P15 or added to this document, ☒ available at (add URL): ***http://www.lenovo.com/ecodeclaration***	☒	☐	☐
P5	**Product packaging**			
P5.1*	Packaging and packaging components do not contain more than 0,01% lead, mercury, cadmium and hexavalent chromium by weight of these together	☒	☐	
P5.2*	The packaging materials are marked with abbreviations and numbers indicating the nature of the material(s) used (See legal reference)	☒	☐	☐
P5.3*	The product packaging material is free from ozone depleting substances as specified in the Montreal Protocol (See legal reference) Comment: Legal reference has no maximum concentration values	☒	☐	☐
P6	**Treatment information**			
P6.1*	Information for recyclers/treatment facilities is available (***https://lenovo.com/recycling***).	☒	☐	☐

NOTE B1 Restriction applies to the homogeneous material, unless other specified and expressed in weight %. Stating “Yes” means that the product is compliant with the mandatory requirements.

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 385

Model number *	***12TD,12TE,12TF,12TG***	**Logo**	Lenovo
Issue date *	***2024-04-08***		

Product environmental attributes - Market requirements (See General NOTE GN below) **- Environmental conscious design**		**Requirement met**		
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.	Yes	No	N/A
P7	**Design** **Disassembly, recycling**			
P7.1*	Parts that have to be treated separately are easily separable	☒	☐	☐
P7.2*	Plastic materials in covers/housing have no surface coating	☐	☒	☐
P7.3*	Plastic parts > 100 g consist of one material or of easily separable materials	☐	☐	☒
P7.4*	Plastic parts > 25 g have material codes according to ISO 11469 referring ISO 1043-4	☐	☐	☒
P7.5	Plastic parts are free from metal inlays or have inlays that can be removed with commonly available tools	☒	☐	☐
P7.6*	Labels are easily separable (This requirement does not apply to safety/regulatory labels)	☒	☐	☐
	Product lifetime			
P7.7*	Upgrading can be done e.g. with processor, memory, cards or drives	☒	☐	☐
P7.8*	Upgrading can be done using commonly available tools	☒	☐	☐
P7.9	Spare parts are available after end of production for: ***4*** years			☐
P7.10	Service is available after end of production for: ***4*** years			☐
	Material and substance requirements			
P7.11*	Product cover/housing material type (e.g. plastics, metal, aluminum): Material type: ***SGCC*** Material type: ***PC/PC+ABS*** Material type: ***PC*** Material type: ***ABS*** Material type: ***PC+ABS*** Material type:			
P7.12	Insulation materials of external electrical cables are PVC free	☐	☒	☐
P7.13	Insulation materials of internal electrical cables are PVC free	☐	☒	☐
P7.14	External plastic casing/cover parts > 25 g contain no more than 0,1% weight (1000 ppm) bromine and 0,1% weight (1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame retardants, and polyvinyl chloride or 0,3% weight (3000 ppm) bromine and 0,3% weight (3000 ppm) chlorine in parts containing more than 25% post-consumer recycled content	☐	☐	☒
P7.15	Printed circuit boards, PCBs (without components) are low halogen as defined in IEC 61249-2-21. (See NOTE B2): Only PCBs > 25g ☐ or All PCBs ☐	☐	☒	☐
P7.16	Flame retarded plastic parts > 25 g in covers / housings are marked according to ISO 1043-4: Marking:	☐	☐	☒
P7.17	Alt. 1: Chemical specifications of flame retardants in printed circuit boards > 25 g (without components): TBBPA (additive) ☐, TBBPA (reactive) ☒ (See NOTE B3), Other; chemical name: , CAS #: Alt. 2: Chemical specifications of flame retardants in printed circuit boards (without components) > 25 g according to ISO 1043-4:	☒ ☒	☐ ☐	☐ ☐
P7.18	Alt. 1: Flame retarded plastic parts > 25 g contain the following flame retardant substances/preparations in concentrations above 0,1%: 1. Chemical name: , CAS #: (See NOTE B4) 2. Chemical name: , CAS #: " 3. Chemical name: , CAS #: " Alt. 2: Chemical specifications of flame retardants in plastic parts > 25 g according to ISO 1043-4:	☐ ☐	☐ ☐	☒ ☒
P7.19	In plastic parts > 25 g, flame retardant substances/preparations above 0,1% are used which have been assigned the following Risk phrases; and Hazard statements: The source(s) for these classifications is/are found at (add URL(s)): , (See NOTE B5)	☐	☐	☒

GENERAL NOTE Standard references should direct to the latest version of a standard. If an older version of a standard is used, section P15 shall be used for explanation.

NOTE B2 IEC 61249-2-21 defines maximum limits of 900 ppm for each of the substances chlorine and bromine and a maximum limit of 1500ppm of these substances combined. The standard does not address fluorine, iodine and astatine which are included in the group of halogens.

NOTE B3 and B4 A Guidance document on Chemical substances is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm.

NOTE B5 If a certain substance has been assigned a certain risk phrases / hazard statement in the referenced source, this does not necessarily mean the substance has been tested for all of the hazards referred to by a certain customer.

Anexo PROPOSTA ITEM 1 - ER SOLUÇÕES (1661785) SEI 2025.001317 / pg. 386

Model number *	12TD,12TE,12TF,12TG	Logo	Lenovo
Issue date *	2024-04-08		

Product environmental attributes - Market requirements (continued)		Requirement met		
Item		Yes	No	N/A
	Material and substance requirements (continued)			
P7.20*	Postconsumer recycled plastic material content is used in the product (See NOTE B6): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the postconsumer recycled plastic material content (calculated as a percentage of total plastic by weight) is ***15.96*%.** b) The weight of recycled material is ***11.2*** g	☒	☐	☐
P7.21*	Biobased plastic material content is used in the product (See NOTE B7): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the biobased plastic material content (calculated as a percentage of total plastic by weight) is %. or b) The weight of the biobased plastic material is g	☐	☒	☐
P7.22*	Light sources are free from mercury, i.e. less than 0,1 mg/lamp If mercury is used specify: Number of lamps: and maximum mercury content per lamp: mg	☐	☐	☒
P7.23*	If product includes an integral display, the total mercury content in the integrated display: mg	☐	☐	☒
P8	**Batteries**			
P8.1*	Battery chemical composition: ***Lithium Manganese Dioxide***			☐
P9	**Energy consumption (See NOTE B8)**			
P9.1	For the product the following power levels or energy consumptions are reported:			

Energy mode *		Power level at **100** V AC	Power level at **115** V AC	Power level at **230** V AC	Reference/Standard for energy modes and test method *	
Peak (On-Max)		***135*** W	***135*** W	***135*** W	***Full Load***	
Device Category I1						
Short Idle State – WOL Enabled (P_{short_idle})		***7.14*** W	***6.98*** W	***6.89*** W	***ENERGY STAR Computers V8.0***	
Long Idle State – WOL Enabled (P_{long_idle})		***4.56*** W	***4.49*** W	***4.78*** W	***ENERGY STAR Computers V8.0***	
Sleep (S3) – WOL Enabled (P_{Sleep})		***0.96*** W	***0.97*** W	***0.96*** W	***ENERGY STAR Computers V8.0***	
Off Mode (S5) – WOL Enabled (P_{off})		***0.54*** W	***0.54*** W	***0.54*** W	***ENERGY STAR Computers V8.0***	
Device Category I2						
Short Idle State – WOL Enabled (P_{short_idle})		***7.06*** W	***7.39*** W	***7.44*** W	***ENERGY STAR Computers V8.0***	
Long Idle State – WOL Enabled (P_{long_idle})		***5.41*** W	***5.18*** W	***5.41*** W	***ENERGY STAR Computers V8.0***	
Sleep (S3) – WOL Enabled (P_{Sleep})		***0.95*** W	***0.96*** W	***0.95*** W	***ENERGY STAR Computers V8.0***	
Off Mode (S5) – WOL Enabled (P_{off})		***0.54*** W	***0.54*** W	***0.54*** W	***ENERGY STAR Computers V8.0***	
PS No-load (External power supply / charger plugged in the wall outlet but disconnected from the product.)		***0.061*** W	***0.061*** W	***0.061*** W		☒
ETEC * Annual Energy Consumption	***I1***:	***27.25*** kWh/year	***26.81*** kWh/year	***26.79*** kWh/year	Mode Weighting ***Conventional - Desktop / AIOs***	☐
	I2:	***27.75*** kWh/year	***28.45*** kWh/year	***28.75*** kWh/year		
	:	kWh/year	kWh/year	kWh/year		
External Power Supply Efficiency Level (International Efficiency Marking Protocol) * :					***International Efficiency Marking Protocol* (IEMP) for *External Power Supplies***	☒
Display resolution * : megapixels						☒
Default time to enter energy save mode: ***25*** minutes					***ENERGY STAR Computers V8.0***	☐
P9.2*	Information about the energy save function is provided with the product				☒ ☐	☐
P9.3	Energy efficiency class (monitors only):					☒

NOTE B6 Applies to a product containing plastic parts whose combined weight exceeds 100 g with the exception of printed circuit boards, cables, connectors and electronic components and bio-based plastic material.

NOTE B7 The following is to be excluded from the calculation of percentage: printed circuit boards, labels, cables, connectors and electronic components and postconsumer recycled plastic

NOTE B8 A Guidance document on Energy Efficiency is available;

see http://www.ecma-international.org/publications/standards/Ecma-370.htm.

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Model number *	***12TD,12TE,12TF,12TG***	**Logo**	Lenovo
Issue date *	***2024-04-08***		

Product environmental attributes - Market requirements (continued)				**Requirement met**		
Item				Yes	No	N/A
P10	**Emissions**					
	Noise emission – Declared according to ISO 9296 (See NOTE **B9**)					
P10.1	Mode	Mode description	Statistical upper limit A-weighted sound power level, $L_{WA,c}$ (B)			
	Idle	* ***Idle Mode***	* ***2.8***			☐
	Operation	* ***Operating (SSD/HDD)*** * ***Operating (CPU)***	* ***2.9*** *			☐
	Other Mode	***Declared A-weighted sound pressure level (dB)***	***19 (operator position – idle)***			
	Other mode	***Declared A-weighted sound pressure level (dB)***	***21 (operator position – operating-HDD/SSD)*** ***(operator position – operating-CPU)***			
	Measured according to: ☒ ISO 7779 ☐ ECMA-74 ☐ Other (only if not covered by ECMA-74)					
	Electromagnetic emissions					
P10.4	Computer display meets the requirement for low frequency electromagnetic fields of the following voluntary program(s):			☐	☐	☒
P12	**Ergonomics for computing products**					
P12.1*	The display meets the ergonomic requirements of ISO 9241-307 for visual display technologies			☐	☐	☒
P12.2*	The physical input device meets the requirements of ISO 9995 and ISO 9241-410			☒	☐	☐
P13	**Packaging and documentation**					
P13.1*	Product packaging material type(s): ***Paper - Corrugated single wall*** weight (kg): ***0.30*** Product packaging material type(s): ***Paper - Corrugated single wall*** weight (kg): ***0.175*** Product packaging material type(s): ***Plastic - Laminated (Fabricated) EPE*** weight (kg): ***0.107*** Product packaging material type(s): ***Plastic - PE (polyethylene)*** weight (kg): ***0.0106*** Product packaging material type(s): weight (kg):					
P13.2*	Product plastic primary packaging is free from PVC			☒	☐	☐
P13.3*	For product primary corrugated fiberboard packaging, specify the contained percentage of minimum post-consumer recovered fiber content: ***90*** %					☐
P13.4*	Specify media for user and product documentation (tick box): Electronic ☒, Paper ☒, Other ☐					☐
P13.5	(Please only complete this item if paper documentation used) User and product documentation on paper media is chlorine-free: If Yes, please specify: Totally chlorine-free Elemental chlorine-free Processed chlorine-free			☒ ☒ ☐ ☐	☐	
P14	**Voluntary programs**					
P14.1	The product meets the requirements of the following voluntary program(s): ENERGY STAR® Eco-label: ***EPEAT*** Eco-label: ***TCO***	Criteria version: ***8.0*** Criteria version: Criteria version: ***9.0***	Date: ***2024.3.26*** Date: Date: ***2024.4.26***	Product category: ***Desktop Computer*** Product category: ***Desktop Computer*** Product category: ***Desktop Computer***		
P15	**Additional information (See NOTE B10)**					
P9	***Energy consumption of computer products; description of the tested product configuration: I1:Intel 300T+64G memory+2T SSD+2T SSD+135W*** ***I2:I5-14500T+64G memory+2T SSD+2T SSD+135W***					
P7.7 ***P7.8***	***In further explanation of Upgradability (P7.7/P7.8), the following components can be upgraded:*** ***Processor*** ***Upgradeable with special tools*** ***Memory*** ***Upgradeable using common tools*** ***Cards*** ***Upgradeable using common tools*** ***Drives/Storage*** ***Upgradeable using common tools***					
	NOTE: Supplier makes no representations, guarantees, assurances or warranties whether express or implied, regarding the information contained in this document. All information provided by supplier in this document is provided based on supplier's knowledge available at the time of completion, and supplier shall have no obligation to update such information. The information provided here is approximate and provided for informational purposes only. See a Lenovo Account Representative for more information.					

NOTE B9 A Guidance document on Acoustic Noise is available;
see http://www.ecma-international.org/publications/standards/Ecma-370.htm.

NOTE B10 Additional lines may be inserted to declare further items, by positioning the cursor at the far right of the row and hitting the <Enter> key.

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Legal references Europe Annex B2

Reference	Declaration item
Directive 2011/65/EU (RoHS Directive)* * Specific exemptions apply for certain products and applications.	P1.1, P3.1
Regulation (EC) 1907/2006 (REACH Regulation), annex XVII	P1.2, P1.4, P1.6, P1.7
Regulation (EC) 2037/2000, 2038/2000, 2039/2000 (Marketing and use of Ozone layer depleting substances)	P1.3, P5.3
Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002	P1.5
Directive 2006/66/EC (Battery and accumulators Directive), as amended.* * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	P2.1, P2.2, P2.3, P8.1
Directive 2014/35/EU (Low Voltage Directive)	P3.1
Directive 2014/30/EU (EMC Directive)	P3.1
Directive 2014/53/EU (RE Directive)	P3.1
Regulation (EC) 801/2013 amending Regulation (EC) No 1275/2008 with regard to ecodesign requirements for standby, off mode electric power consumption of electrical and electronic household and office equipment, and amending Regulation (EC) No 642/2009 with regard to ecodesign requirements for televisions	P3.1, P3.2
Commission Regulation (EC) No 278/2009 of 6 April 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for no-load condition electric power demand and average active efficiency of external power supplies	P3.1, P3.2, P9.1
COMMISSION REGULATION (EU) No 617/2013 of 26 June 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for computers and computer servers	P2.4, P2.5, P3.1, P3.2, P7.23, P9.1
Regulation（EC）No 1272/2008 (CLP Regulation)	P7.19
Directive 2004/12/EC (Packaging Directive)	P5.1
Decision 97/129/EC (Secondary packaging legislation)	P5.2
Directive 2012/19/EU (WEEE directive) Implementing Regulation (EU) 2019/290 establishing the format for registration and reporting of producers of electrical and electronic equipment to the register. Commission Implementing Regulation 2017/699 establishing a common methodology for the calculation of the weight of electrical and electronic equipment (EEE) placed on the national market in each Member State and a common methodology for the calculation of the quantity of waste electrical and electronic equipment (WEEE) generated by weight in each Member State.	P6.1

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Lenovo ErP Lot3 Information Sheet
- PC / Notebook -

As required by COMMISSION REGULATION (EU) No 617/2013 of 26 June 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for computers and computer servers (ErP Lot3).

Products scope of this sheet:
Desktop computer, integrated desktop computer, and notebook computer

This document is only valid in connection with the IT Eco Declaration of the specific Product.

Commercial name	***ThinkCentre M70q Gen5***	**Logo**
Model Number	***12TD,12TE,12TF,12TG***	
Issue Date	***2024-04-08***	
Additional information	***EPEAT(12TD,12TE,12TF,12TG);Energy Star(12TD,12TE,12TF,12TG);TCO(12TD,12TE,12TF,12TG)***	

P7.1.1 Product environmental attributes

(d) year of manufacture: ***2024***

(e) **Etec value** (kWh) per ErP Lot 3 Category and capability adjustments applied when **all discrete graphics cards (dGfx) are disabled** and if the system is tested with switchable graphics mode with UMA driving the display

(f) **Etec value** (kWh) per ErP Lot 3 Category and capability adjustments applied when **all discrete graphics cards (dGfx) are enabled**

		Category A (according to ErP Lot 3)	**Category B** (according to ErP Lot 3)	**Category C** (according to ErP Lot 3)	**Category D** (according to ErP Lot 3)
capability adjustments applied during testing	Memory over base [GB]		***64***		***64***
	Additional internal storage	***(Yes / No)***	***Yes*** ***(Yes / No)***	***(Yes / No)***	***Yes*** ***(Yes / No)***
	Discrete television tuner	***(Yes / No)***	***No*** ***(Yes / No)***	***(Yes / No)***	***No*** ***(Yes / No)***
	Discrete Audio Card	***(Yes / No)***	***No*** ***(Yes / No)***	***(Yes / No)***	***No*** ***(Yes / No)***
	Discrete graphics Card(s) [number / #]	***#:*** ***(Yes / No)***	***No #:*** ***(Yes / No)***	***#:*** ***(Yes / No)***	***No #:*** ***(Yes / No)***
	Category of discrete graphics Card(s)		***N/A***		***N/A***
Test results	**Etec Value (kWh) - dGfx disabled** **all discrete graphics cards (dGfx) are disabled/ UMA is active for switchable graphics/ product has no graphics cards (dGfx)**		***26.86***		***30.51***
	Etec Value (kWh) - dGfx enabled **all discrete graphics cards (dGfx) are enabled**		***N/A***		***N/A***

(g) Idle state power demand (Watts); ***7.87*** **W**

(h) Sleep mode power demand (Watts); ***0.99*** **W**

(i) Sleep mode with WOL enabled power demand (Watts) (where enabled); ***0.98*** **W**

(j) Off mode power demand (Watts); ***0.52*** **W**

(k) Off mode with WOL enabled power demand (Watts) (where enabled); ***0.52*** **W**

(l) Internal power supply efficiency at 10%, 20%, 50% and 100% of rated output power (if applicable):

Internal Power Supply Model	Output Power	10% Load Efficiency	20% Load Efficiency	50% Load Efficiency	100% Load Efficiency
	W				
	W				
	W				
	W				
	W				

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(m) external power supply efficiency (if applicable)*:

Power Adapter Model	Output Power	Average Active Efficiency
ADP-65ME BA	***65*** W	*91%*
ADP-90ME BA	***90*** W	*91%*
ADL135SDC3A	***135*** W	*91%*
ADL135SLC3A	*135* W	*89%*
ADL135SCC3A	*135* W	*92%*

*internal note: show values for all available external power supplies

(o)	Minimum number of loading cycles that the batteries can withstand (applies only to notebook computers):	***cycles***
(p-1)	Measurement methodology used to determine information mentioned in points (l) – internal PSU efficiency:	***Not Applicable***
(p-2)	Measurement methodology used to determine information mentioned in points (m) – external PSU efficiency:	***EN 50563:2011***
(p-3)	Measurement methodology used to determine information mentioned in points (o) – loading cycles batteries: ***EN 50563:2011***	
(p-4)	Measurement methodology used to determine information mentioned in maximum, idle, sleep, off mode power as defined in Point P9.1 in the Product IT Eco Declaration:	***ENERGY STAR Computers V8 / IEC 62632:2013***
(q)	Sequence of steps for achieving a stable condition with respect to power demand: ***Based on user manual/Power on->Wait 5 minutes->Stable condition***	
(r)	Description of how sleep and/or off mode was selected or programmed: ***Based on user manual-Set power button behaviors***	
(s)	Sequence of events required to reach the mode where the equipment automatically changes to sleep and/or off mode: ***Based on user manual/Control Panel->Power Options-> Change Settings-> Restore default settings for this plan***	
(t)	**Duration of idle state condition before the computer automatically reaches sleep mode**, or another condition which does not exceed the applicable power demand requirements for sleep mode (in minutes):	***25*** minutes
(u)	**Length of time after a period of user inactivity in which the computer automatically reaches a power mode that has a lower power** demand requirement than sleep mode (in minutes):	***N/A*** minutes
(v)	**Length of time before the display sleep mode is set to activate** after user inactivity (in minutes):	**10** minutes
(w)	Information on the energy-saving potential of power management functionality: ***N/A***	
(x)	user information on how to enable the power management functionality: ***Based on user manual-Set the power plan***	

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(z) Test parameters for measurements: — test voltage in V and frequency in Hz, — total harmonic distortion of the electricity supply system, — information and documentation on the instrumentation, set-up and circuits used for electrical testing:

Test Voltage and Frequency ***230V / 50Hz***

Power Measurement Circuit

Test Parameters

Temperature	***25.0*** ° C
Humidity Range	***46%***
Total Harmonic Distortion of Electrical Supply System	***2.0%***

Test Instruments

Instrument Type	Make/model of Equipment	Date of Last Calibration
AC power Source	***Testo;622;SN:39504298/305***	***2023-09-11***
Power Meter	***YOKOGAWA;WT310;SN:C2RD 07008V***	***01/09/23***
Timer	***CASIO; HS-80W; SN: J111Q01***	***11/09/23***

Additional Notebook Battery Information:

	Battery[ies] **not** user replaceable The battery[ies] in this product cannot be easily replaced by users themselves. (1)	Battery[ies] **are** user replaceable	N/A
Internal/built-in Battery	☐	☐	☒
External/detachable Battery	☐	☐	☒
Bios Backup Battery	☒	☐	☐
Other:	☐	☐	☒

Additional information

1)
The battery[ies] in this product cannot be easily replaced by users themselves.
Акумулаторната[ите] батерия[и] в този продукт не може да се замени[ят] лесно от самите потребители.
Las baterías de este producto no pueden ser sustituidas fácilmente por los propios usuarios.
Výměnu baterie/baterií v tomto výrobku by neměli provádět sami uživatelé.
Brugeren kan ikke uden videre udskifte batteriet/batterierne i dette produkt.
Der Akku/die Akkus dieses Produkts kann/können nicht ohne weiteres vom Benutzer selbst ausgetauscht werden.
Kasutajad ei saa selle toote akut/akusid ise hõlpsasti asendada.
Η μπαταρία[-ες] στο προϊόν αυτό δεν μπορούν να αντικατασταθούν εύκολα από τους ίδιους τους χρήστες
La/les batterie(s présente(s) dans ce produit ne peuvent être facilement remplacée(s) par les utilisateurs eux-mêmes.
Korisnik ne može lako zamijeniti Bateriju sam u ovom proizvodu.
La batteria/le batterie in questo prodotto non può/possono essere facilmente sostituita/e dall'utente.
Lietotāji paši nevar nomainīt šā ražojuma akumulatoru(-us).
Šio gaminio baterijos [baterijų] pats vartotojas negali lengvai pakeisti.
A termék akkumulátorát/akkumulátorait a felhasználó nem tudja egyedül egyszerűen kicserélni.
Il-batterija/batteriji f'dan il-prodott ma tistax/jistgħux tiġi/jiġu sostitwita/i mill-utenti stess.
Batteriet [ene] i dette produktet kan ikke lett erstattes av brukerne selv.
De batterij(en) in dit product is (zijn) door de gebruiker niet gemakkelijk vervangbaar.
Użytkownik nie może sam w łatwy sposób wymienić baterii w tym produkcie.
A ou as baterias deste produto não podem ser facilmente substituídas pelos próprios utilizadores.
Bateria (bateriile) din acest produs nu poate (pot) fi ușor înlocuită (înlocuite) de utilizatorii înșiși.
Batériu(-ie) v tomto výrobku nemôže vymieňať používateľ.
Baterij/baterije v tem izdelku uporabniki sami ne morejo zlahka zamenjati.
Tämän tuotteen akku [akut] ei[vät] ole helposti käyttäjän vaihdettavissa.
Det är inte enkelt för kunden att själv byta ut batteriet/batterierna.
Bu üründeki batarya(lar) kullanıcılar tarafından kolaylıkla değiştirilemez.

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THE ECO DECLARATION

ecma

ECMA/TC38-TG3/2015/026
(Rev. 1 – 15 April 2015)

Annex B2 - Product environmental attributes
Computer Monitors

The declaration may be published only when all rows and/or fields marked with * are filled-in (n.a. for not applicable).
Additional information regarding each item may be found under P15.

Brand *	*Lenovo*	**Logo**
Company name *	*Lenovo*	
Contact information * **e-mail address**	*Lenovo Global Environmental Affairs* *Alvin L Carter* alcarter@lenovo.com	
Internet site *	*http://www.lenovo.com/social_responsibility/us/en/environment.html*	
Additional information		

The company declares (based on product specification or test results based obtained from sample testing), that the product conforms to the statements given in this declaration.	
Type of product *	*Monitor*
Commercial name *	*ThinkCentre TIO24Gen5/TIO24Gen5Touch*
Model number *	*12NA/12NB/12NC*
Issue date *	*2023/3/1*
Intended market *	☒ **Global** ☐ **Europe** ☐ **Asia, Pacific & Japan** ☐ **Americas** ☐ **Other**
Additional information	

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

About Annex B2

Annex B2 reflects Product environmental attributes relevant for Computers and Computer Monitors. The following items from the ECMA-370 Main body are not shown in the template:
P4.1 – P4.3 Consumable materials
P9.1 TEC and Print speed
P10.2 - P10.3 Chemical emissions from printing products
P11.1 - P11.3 Consumable materials for printing products.

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Model number *	***12NA/12NB/12NC***	**Logo**	
Issue date *	***2023/3/1***		

Product environmental attributes - Legal requirements		**Requirement met**		
Item		Yes	No	n.a.
P1	**Hazardous substances and preparations**			
P1.1*	Products do comply with current European RoHS Directive. (See legal reference and NOTE B1)	☒	☐	
P1.2*	Products do not contain Asbestos (see legal reference). Comment: Legal reference has no maximum concentration value.	☒	☐	
P1.3*	Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	
P1.4*	Products do not contain more than; 0,005% polychlorinated biphenyl (PCB), 0,005% polychlorinated terphenyl (PCT) in preparations (see legal reference).	☒	☐	
P1.5*	Products do not contain more than 0,1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP (see legal reference).	☒	☐	
P1.6*	Parts with direct and prolonged skin contact do not release nickel in concentrations above 0,5 µg/cm^2/week (see legal reference). Comment: Max limit in legal reference when tested according to EN1811:2011-5.	☒	☐	☐
P1.7*	REACH Article 33 information about substances in articles is available at (add URL or mail contact): *https://www.lenovo.com/us/en/Lenovo-REACH-SVHC-Disclosure*	☒	☐	☐
P2	**Batteries**			
P2.1*	If the product contains a battery or an accumulator, the battery/accumulator is labeled with the disposal symbol. Information on proper disposal is provided in user manual. (See legal reference)	☐	☐	☒
P2.2*	Batteries or accumulators do not contain more than 0,0005% of mercury or 0,002% of cadmium. (See legal reference)	☐	☐	☒
P2.3*	Batteries and accumulators are readily removable. (See legal reference)	☐	☐	☒
P3	**Conformity verification & Eco design (ErP)**			
P3.1*	The product is CE-marked to show conformance with applicable legal requirements (see legal reference). The Declaration of Conformity can be requested at (add link or e-mail address): *https://www.lenovo.com/us/en/compliance/eu-doc*	☒	☐	☐
P3.2*	The product complies with the Eco design requirements for energy-related products, (see legal reference).	☒	☐	☐
	Required information is; ☐ given in item P15 or added to this document, ☒ available at (add URL): ***https://www.lenovo.com/us/en/compliance/eco-declaration***	☒	☐	☐
P5	**Product packaging**			
P5.1*	Packaging and packaging components do not contain more than 0,01% lead, mercury, cadmium and hexavalent chromium by weight of these together.	☒	☐	
P5.2*	The packaging materials are marked with abbreviations and numbers indicating the nature of the material(s) used (see legal reference).	☒	☐	☐
P5.3*	The product packaging material is free from ozone depleting substances as specified in the Montreal Protocol (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	☐
P6	**Treatment information**			
P6.1*	Information for recyclers/treatment facilities is available (see legal reference).	☒	☐	☐

NOTE B1 Restriction applies to the homogeneous material, unless other specified and expressed in weight %. Stating "Yes" means that the product is compliant with the mandatory requirements.

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Model number *	***12NA/12NB/12NC***	**Logo**	
Issue date *	***2023/3/1***		

Product environmental attributes - Market requirements (See General NOTE GN below) **- Environmental conscious design**		**Requirement met**		
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.	Yes	No	n.a.
P7	**Design** **Disassembly, recycling**			
P7.1*	Parts that have to be treated separately are easily separable	☒	☐	☐
P7.2*	Plastic materials in covers/housing have no surface coating.	☒	☐	☐
P7.3*	Plastic parts > 100 g consist of one material or of easily separable materials.	☒	☐	☐
P7.4*	Plastic parts > 25 g have material codes according to ISO 11469 referring ISO 1043-4.	☒	☐	☐
P7.5	Plastic parts are free from metal inlays or have inlays that can be removed with commonly available tools.	☒	☐	☐
P7.6*	Labels are easily separable. (This requirement does not apply to safety/regulatory labels).	☒	☐	☐
	Product lifetime			
P7.7*	Upgrading can be done e.g. with processor, memory, cards or drives	☐	☐	☒
P7.8*	Upgrading can be done using commonly available tools	☐	☐	☒
P7.9	Spare parts are available after end of production for: 5 years			☐
P7.10	Service is available after end of production for: 5 years			☐
	Material and substance requirements			
P7.11*	Product cover/housing material type (e.g. plastics, metal, aluminum): Material type: ***ABS*** Material type: ***PC*** Material type:			
P7.12	Insulation materials of external electrical cables are PVC free.	☐	☒	☐
P7.13	Insulation materials of internal electrical cables are PVC free.	☐	☒	☐
P7.14	External plastic casing/cover parts > 25 g contain no more than 0,1% weight (1000 ppm) bromine and 0,1% weight (1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame retardants, and polyvinyl chloride or 0,3% weight (3000 ppm) bromine and 0,3% weight (3000 ppm) chlorine in parts containing more than 25% post-consumer recycled content.	☒	☐	☐
P7.15	Printed circuit boards, PCBs (without components) are low halogen: all ☒ PCBs > 25 g ☐ are low halogen as defined in IEC 61249-2-21. (See 1NOTE B2)	☐	☒	☐
P7.16	Flame retarded plastic parts > 25 g in covers / housings are marked according ISO 1043-4: Marking:	☐	☐	☒
P7.17	Alt. 1: Chemical specifications of flame retardants in printed circuit boards > 25 g (without components): ☐TBBPA (additive), ☒TBBPA (reactive) (See NOTE B3), ☐Other:, CAS #:	☒	☐	☐
	Alt. 2: Chemical specifications of flame retardants in printed circuit boards (without components) > 25 g according ISO 1043-4:	☐	☐	☒
P7.18	Alt. 1: Flame retarded plastic parts > 25 g contain the following flame retardant substances/preparations in concentrations above 0,1%: 1. Chemical name: , CAS #: (See NOTE B4) 2. Chemical name: , CAS #: " 3. Chemical name: , CAS #: "	☐	☐	☒
	Alt. 2: Chemical specifications of flame retardants in plastic parts > 25 g according ISO 1043-4:	☐	☐	☒
P7.19	In plastic parts > 25 g, flame retardant substances/preparations above 0,1% are used which have been assigned the following Risk phrases; and Hazard statements: The source(s) for these classifications is/are found at (add URL(s)): , (See note B5)	☐	☐	☒
P7.20*	Postconsumer recycled plastic material content is used in the product (See Note B6): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the postconsumer recycled plastic material content (calculated as a percentage of total plastic by weight) is ***82.3%. (EPEAT calculation) / 85% (TCO calculation)*** or b) The weight of recycled material is ***995.52*** g.	☒	☐	☐

GENERAL NOTE Standard references should direct to the latest version of a standard. If an older version of a standard is used, section P15 shall be used for explanation.

NOTE B2 IEC 61249-2-21 defines maximum limits of 900 ppm for each of the substances chlorine and bromine and a maximum limit of 1500ppm of these substances combined. The standard does not address fluorine, iodine and astatine which are included in the group of halogens.

NOTE B3 and B4 A Guidance document on Chemical substances is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm

NOTE B5 If a certain substance has been assigned a certain risk phrases / hazard statement in the referenced source, this does not necessarily mean the substance has been tested for all of the hazards referred to by a certain customer.

NOTE B6 Applies to a product containing plastic parts whose combined weight exceeds 100 g with the exception of printed circuit boards, cables, connectors and electronic components and bio-based plastic material.

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Model number *	***12NA/12NB/12NC***	**Logo**	
Issue date *	***2023/3/1***		

Product environmental attributes - Market requirements (continued)		**Requirement met**		
Item		Yes	No	n.a.
	Material and substance requirements (continued)			
P7.21*	Biobased plastic material content is used in the product (See NOTE B7): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the biobased plastic material content (calculated as a percentage of total plastic by weight) is *0*%. or b) The weight of the biobased plastic material is *0*g.	☐	☒	☐
P7.22*	Light sources are free from mercury, i.e. less than 0,1 mg/lamp. If mercury is used specify: Number of lamps: and maximum mercury content per lamp: mg	☒	☐	☐
P8	**Batteries**			
P8.1*	Battery chemical composition:			☒
P9	**Energy consumption (See NOTE B8)**			
P9.1	For the product the following power levels or energy consumptions are reported:			

Energy mode *	Power level at 100V 50HzAC	Power level at 100V /60Hz	Power level at **115** V AC	Power level at **230** V AC	Reference/Standard for energy modes and test method *	
ENERGY STAR® On Mode* (System Idle)	**11.82**	**11.83**	**11.8**	**11.85**	ENERGY STAR® Program Requirements for Computer Monitors: Ver. 8.0	
ENERGY STAR® Low Power Sleep Mode*	**0.27**	**0.27**	**0.27**	**0.29**	ENERGY STAR® Program Requirements for Computer Monitors: Ver. 8.0	
ENERGY STAR® Off / Apparent Off Mode*	**0.19**	**0.19**	**0.19**	**0.21**	ENERGY STAR® Program Requirements for Computer Monitors: Ver. 8.0	
PTEC * Typical Energy Consumption	W	W	W	W	***PTEC = Pon x 0.35 + Psleep x 0.65***	☒
ETEC * Annual Energy Consumption	***37.78***kWh /year	***37.81***kWh /year	***37.72*** kWh/year	***37.98***kWh/year	***E_{TEC} = 8.76x (0.35xPon +0.65x Psleep)***	☐
External Power Supply Efficiency Level (International Efficiency Marking Protocol) * :						☒
Display resolution* : ***1920*1080*** megapixels					ENERGY STAR® Program Requirements for Computer Monitors: Ver. 8.0	
Default time to enter energy save mode: 15 seconds					ENERGY STAR® Program Requirements for Computer Monitors: Ver. 8.0	

P9.2*	Information about the energy save function is provided with the product.	☒	☐	☐
P9.3*	The product meets the energy requirements of the following voluntary program/s: ENERGY STAR® version: 8.0 Product category: **Display**.	☒	☐	☐
P10	**Emissions**			
	Noise emission – Declared according to ISO 9296 (See NOTE B9)			

P10.1	Mode	Mode description	Statistical upper limit A-weighted sound power level, $L_{WA,c}$ (B)	
	Idle	* ***HDD: Idle***	*	☒
	Operation	* ***HDD: Operating***	*	☒
	Other mode	***Declared A-weighted sound pressure level (dB)*** L_{pAm}	***(operator position desktop – idle)***	
	Other mode	***Declared A-weighted sound pressure level (dB)*** L_{pAm}	***(operator position desktop – operating)***	
	Measured according to: ☒ ISO 7779 ☐ ECMA-74 ☐ Other (only if not covered by ECMA-74)			

NOTE B7 The following is to be excluded from the calculation of percentage: printed circuit boards, labels, cables, connectors and electronic components and postconsumer recycled plastic

NOTE B8 A Guidance document on Energy Efficiency is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm

NOTE B9 A Guidance document on Acoustic Noise is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm

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Model number *	***12NA/12NB/12NC***	**Logo**	
Issue date *	***2023/3/1***		

Product environmental attributes - Market requirements (continued)		**Requirement met**		
Item		Yes	No	n.a.
	Electromagnetic emissions			
P10.4	Computer display meets the requirement for low frequency electromagnetic fields of the following voluntary program(s):	☐	☒	☐
P12	**Ergonomics for computing products**			
P12.1*	The display meets the ergonomic requirements of ISO 9241-307 for visual display technologies.	☒	☐	☐
P12.2*	The physical input device meets the requirements of ISO 9995 and ISO 9241-410.	☐	☐	☒
P13	**Packaging and documentation**			
P13.1*	Product packaging material type(s): ***Carton Box*** weight (kg): ***1.505*** Product packaging material type(s): ***paper+pulp*** weight (kg): ***1.33*** Product packaging material type(s): ***Bag*** weight (kg): ***0.03*** Product packaging material type(s): weight (kg):			
P13.2*	Product plastic primary packaging is free from PVC.	☒	☐	☐
P13.3*	For product primary corrugated fiberboard packaging, specify the contained percentage of minimum post-consumer recovered fiber content: ***90***%			☐
P13.4*	Specify media for user and product documentation (tick box): ☒ Electronic, ☒ Paper, ☐ Other			☐
P13.5	(Please only complete this item if paper documentation used) User and product documentation on paper media is chlorine-free: If Yes, please specify:	☒	☐	
	Totally chlorine-free	☒		
	Elemental chlorine-free	☐		
	Processed chlorine-free	☐		
P14	**Voluntary programs**			
P14.1	The product meets the requirements of the following voluntary program(s): ENERGY STAR® Criteria version: ***8.0*** Date: ***2023-03-27*** Product category: TCO Criteria version: ***TCO9*** Date: ***2023-03-28*** Product category: Eco-label: Criteria version: Date: Product category:			
P15	**Additional information (See NOTE B10)**			
P9	***Energy consumption of specific configuration may vary; description of the tested product configuration:***			
	NOTE: Supplier makes no representations, guarantees, assurances or warranties whether express or implied, regarding the information contained in this document. All information provided by supplier in this document is provided based on supplier's knowledge available at the time of completion, and supplier shall have no obligation to update such information. The information provided here is approximate and provided for informational purposes only. See a Lenovo Account Representative for more information.			
P9	See Energy Star Qualified Monitors & Displays for the latest information: https://www.energystar.gov/products/office_equipment/displays			

NOTE B10 Additional lines may be inserted to declare further items, by positioning the cursor at the far right of the row and hitting the <Enter> key.

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Legal references Europe Annex B2

Reference	Declaration item
Directive 2011/65/EU (RoHS Directive) * * Specific exemptions apply for certain products and applications.	P1.1
Regulation (EC) 1907/2006(REACH, Annex XVII	P1.2, P1.4, P1.6, P1.7
Regulation (EC) 2037/2000, 2038/2000, 2039/2000 (Marketing and use of Ozone layer depleting substances)	P1.3, P5.3
Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002	P1.5
Directive 2013/56/EC (Battery and accumulators Directive) * * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	P2.1, P2.2, P2,3, P8.1
Directive 2006/95/EC (Low Voltage Directive)	P3.1
Directive 2004/108/EC (EMC Directive)	P3.1
Directive 1999/5/EC (R&TTE Directive)	P3.1
Regulation (EC) 801/2013 amending Regulation (EC) No 1275/2008 with regard to ecodesign requirements for standby, off mode electric power consumption of electrical and electronic household and office equipment, and amending Regulation (EC) No 642/2009 with regard to ecodesign requirements for televisions	P3.1, P3.2
Regulation（EC）No 1272/2008 (CLP Regulation)	P7.19
Directive 2004/12/EC (Packaging Directive)	P5.1
Decision 97/129/EC (Secondary packaging legislation)	P5.2
Directive 2012/19/EU (WEEE directive)	P6.1

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OVERVIEW



1. DisplayPort 1.2	6. USB 3.2 Gen 1
2. HDMI 1.4	7. Audio-out (3.5mm)
3. VGA	8. USB 3.2 Gen 1
4. USB-B 3.2 Gen 1	9. USB 3.2 Gen 1
5. USB 3.2 Gen 1	

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PERFORMANCE

Panel

Panel

3-side NearEdgeless, In-Plane Switching

Backlight

WLED

Display Size

23.8 inches

Max View Area

WxH: 527.0 x 296.5 mm

Resolution

1920 x 1080

Aspect Ratio

16:9

Pixel Pitch

0.275 x 0.275 mm

Dot / Pixel Per Inch

93 dpi

Brightness

250 cd/m²

Contrast Ratio

- Dynamic Contrast Ratio: 3000000:1
- Contrast Ratio: 1000:1

View Angle (H / V)

Horizontal: 178°, Vertical: 178°

Response Time

- Extreme Mode: 4 ms
- Normal Mode: 6 ms

Refresh Rate

60Hz

Color Gamut

- Coverage Ratio: 99% sRGB
- Color Area Ratio: 110% sRGB

Color Support

16.7 Million

Color Depth

6-bit (Hi+FRC)

Screen Surface Treatment

Anti-glare

Operating System

Operating System

- Windows® 11 Support
- Windows® 10 Support

Power Supply

Power Consumption

- Typical / Max: 14W / 51W
- Sleep / Off mode: <0.5W
- Switch-off Mode: <0.3W
- Energy Star Power On: 12W
- Energy Star TEC: 38kWh

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- Internal Power Supply

Voltage Required

AC 100 to 240 V (50-60Hz)

Special Features

Special Features

- Lenovo® ThinkColour (Lenovo® Accessories and Display Manager) Support
  Lenovo® ThinkColour supports Windows® 10 & 11, Mac OS, and Windows® On Arm (functions vary across systems).
  Lenovo® Accessories and Display Manager is formerly Lenovo® Display Control Center.
- Natural Low Blue Light

DESIGN

Mechanical

ThinkCentre® M Series Support

ThinkCentre® M Series Tiny Support
For supporting Tiny devices, additional Tiny Clamp Bracket Mounting Kit III (PN: 4XF1K72399) are needed (sold separately).

Bezel Width

- Side: 2mm
- Top / Bottom: 2mm / 17.1mm

Cable Management

Support

Case Color

Raven black

Dimensions (WxDxH)[1]

Models	Dimensions
Lowest Position	539.8 x 199.7 x 349.8mm (21.25 x 7.86 x 13.77 inches)
Highest Position	539.8 x 199.7 x 504.8mm (21.25 x 7.86 x 19.87 inches)
Head Only	539.8 x 49.0 x 321.4 mm (21.25 x 1.93 x 12.65 inches)

Packaging Dimensions (WxDxH)

592 x 152 x 422 mm (23.31 x 5.98 x 16.61 inches)

Weight[2]

Models	Weight
Monitor With Stand	5.4 kg (11.9 lbs)
Monitor Head Only	3.4 kg (7.5 lbs)

Packaging Weight

7.8 kg (17.2 lbs)

Mounting

Supports VESA mount 100mm

Stand

Supports -5° to +23.5° tilt, left & right 45 swivel, 90° pivot, up to 155mm lift

In the Box

- Monitor with Stand
- 1x HDMI® Cable (1.8m)
- 1x USB-A to USB-B Cable (1.8m)
- 1x Power Cable (1.8m)
- Quick Setup Guide
- Warranty Booklet

Notes:

[1] The system dimensions may vary depending on configurations.

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[2] The system weight is approximate and based on results in Lenovo® lab, which varies depending on the source of component, variance of the distribution of each component, and manufacturing process. It may not be the exact weight for each specific model.

CONNECTIVITY

Ports[1]

Rear Ports

- 1x USB-B 3.2 Gen 1, USB upstream
- 4x USB 3.2 Gen 1, USB downstream
- 1x HDMI® 1.4[2]
- 1x DisplayPort™ 1.2
- 1x VGA
- 1x Power Connector
- 1x audio-out (3.5mm)

Notes:

[1] The transfer speed of following ports will vary and, depending on many factors, such as the processing speed of the host device, file attributes and other factors related to system configuration and your operating environment, will be slower than theoretical speed.
USB 2.0: 480 Mbit/s;
USB 3.2 Gen 1 (SuperSpeed USB 5Gbps, formerly USB 3.0 / USB 3.1 Gen 1): 5 Gbit/s;
USB 3.2 Gen 2 (SuperSpeed USB 10Gbps, formerly USB 3.1 Gen 2): 10 Gbit/s;
USB4® 20Gbps / USB 3.2 Gen 2x2 (SuperSpeed USB 20Gbps): 20 Gbit/s;
USB4® 40Gbps (USB 40Gbps): 40 Gbit/s;
Thunderbolt™ 3/4: 40 Gbit/s.
[2] Supports 1920x1080@60Hz as specified in HDMI® 1.4

SECURITY & PRIVACY

Security

Physical Locks

Kensington® Security Slot™

SERVICE

Warranty

Base Warranty

3-year limited warranty

CERTIFICATIONS

Green Certifications[1]

Green Certifications

- ENERGY STAR® Certified
- EPEAT™ Gold Registered[2]
- RoHS compliant
- TCO Certified 9.0
- TCO edge 2.0
- Volatile Organic Compound Certification

Notes:

[1] The items listed under the "Green Certifications" section may not only refer to certification but also registration or self-declaration. For ESG & regulatory compliance documents, please visit https://compliance.lenovo.com.
[2] EPEAT™ is registered where applicable, please visit epeat.net for registration status by country.

Other Certifications

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Other Certifications

- Eyesafe® Certified 2.0
- TÜV Rheinland® Low Blue Light
- TÜV Rheinland® Low Blue Light (Hardware Solution)

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Ref. Certif. No.

NO122743

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI DACCEPTATION MUTUELLE DE CERTIFICATS DESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product Produit	LCD Monitor
Name and address of the applicant Nom et adresse du demandeur	TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Name and address of the manufacturer Nom et adresse du fabricant	Lenovo (Beijing) Limited 201-H2-6, Floor 2, Building 2, No.6 Shangdi West Road, Haidian District, Beijing, 100085 China
Name and address of the factory Nom et adresse de l'usine Note: When more than one factory, please report on page 2 Note: Lorsque il y plus d'une usine, veuillez utiliser la deuxième page	☑ Additional information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	1.5A 100-240V~ 50/60Hz Cl. I.
Trademark (if any) Marque de fabrique (si elle existe)	Lenovo
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	
Model / Type Ref. Ref. De type	A22238***, *24*-**,TIO Flex 24*
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire, peuvent être indiqués sur la deuxième page	The symbol '*' in the model name can be A to Z, a to z, 0 to 9, '+', '–', '\', '/' or blank, for marketing use only. ☐ Additional information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1:2005, IEC 60950-1:2005/AMD1:2009, IEC 60950-1:2005/AMD2:2013
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport dessais numéro de référence qui constitue partie de ce Certificat	466746

This CB Test Certificate is issued by the National Certification Body
Ce Certificat dessai OC est établi par l'Organisme **National de Certification**

Nemko

Philip Pedersens vei 11,
NO-1366 Lysaker, Norway

Date: 09-06-2022

Signature: Okhyun Jeon
Certification Department

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TPV Electronics (Fujian) Co., Ltd.
Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, P.R.
China

Fábrica Austral de Productos Eléctricos S.A.
Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, ANTÁRTIDA E ISLAS DEL ATLÁNTICO SUR
Argentina

TPV Display Technology (Beihai) Co., Ltd.
China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi,P.R.
China

TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.
China

TPV Electronics (Fujian) Co., Ltd.
Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.
China

TPV TECHNOLOGY (THAILAND) COMPANY LIMITED
No.267 Mu7, Tha Tum Sub- District, Si Maha Pho District, Prachin Buri Province,
Thailand

Dixon Technologies (India) Ltd.
EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post, Revenue Vikruthamala, Yerpedu Mandelam, District-Chittoor, Andhra Pradesh, 517526
India

TPV Display Technology (Wuhan) Co. Ltd.
Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,P.R.
China

L&T Display Technology (Fujian) Ltd.
Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.
China

TPV Display Technology (China) Co., Ltd.
No.106 Jinghai 3 Rd., BDA, Beijing City 100176 P.R.
China

Envision Indústria de Produtos Eletrônicos Ltda.
Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM
Brazil

TREND SMART CE MEXICO S. DE R.L. DE C.V.
Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana Baja California, C.P. 22435
Mexico

GeneTouch Corporation
No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012
Taiwan

Nemko
Philip Pedersens vei 11,
NO-1366 Lysaker, Norway

Date: 09-06-2022

Signature: Okhyun Jeon
Certification Department

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TEST REPORT IEC 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Number. ..... :	466746
Date of issue ..... :	2022-06-09
Total number of pages ..... :	96 pages, other attachments refer to page 4
Name of Testing Laboratory preparing the Report..... :	Nemko Shanghai Ltd. Shenzhen Branch
Applicant's name ..... :	TPV Electronics (Fujian) Co., Ltd.
Address ..... :	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China
Test specification:	
Standard ..... :	IEC 60950-1:2005, AMD1:2009, AMD2:2013
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1G
Test Report Form(s) Originator .... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2019-07

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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

This Test Report, when bearing the Nemko name and logo is only valid when issued by a Nemko laboratory, or by a laboratory having special agreement with Nemko.

Test item description .....:	LCD Monitor
Trade Mark .....:	Lenovo
Manufacturer .....:	Lenovo (Beijing) Limited 201-H2-6, Floor 2, Building 2, No.6 Shangdi West Road, Haidian District, Beijing, China 100085
Model/Type reference .....:	A22238***, *24*-**, TIO Flex 24* (The symbol '*' in the model name can be A to Z, a to z, 0 to 9, '+', '–', '\', '/' or blank, for marketing use only.)
Ratings .....:	1.5A 100-240V ~ 50/60Hz, Cl. I

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Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ **CB Testing Laboratory**:	Nemko Shanghai Ltd. Shenzhen Branch	
Testing location/ address.....:	Unit CD, Floor 2 & Floor 10, Tower 2, Kefa Road 8#, Hi-Technology Park, Nanshan District, Shenzhen, Guangdong, China	
☐ **Associated CB Laboratory:**		
Testing location/ address.....:		
Tested by (name + function + signature) .....:	Eason Yang (Project handler)	Eason Yang
Approved by (name + function + signature).....:	Jane Sun (Verificator)	Jane Sun
☐ **Testing procedure: TMP/CTF Stage 1:**		
Testing location/ address.....:		
Tested by (name + signature) .....:		
Approved by (name + signature)..:		
☐ **Testing procedure: WMT/CTF Stage 2:**		
Testing location/ address.....:		
Tested by (name + signature) .....:		
Witnessed by (name + signature).:		
Approved by (name + signature)..:		
☐ **Testing procedure: SMT/CTF Stage 3 or 4:**		
Testing location/ address.....:		
Tested by (name + signature) .....:		
Approved by (name + signature)..:		
Supervised by (name + signature):		

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List of Attachments (including a total number of pages in each attachment):

1. Main Test report (96 pages)
2. Photos (14 pages)
3. Canadian differences (5 pages)
4. Korean differences (1 page)
5. US differences (5 pages)
6. Chinese differences (7 pages)
7. Japanese differences (17 pages)
8. Israeli differences (7 pages)

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Summary of testing:

Tests performed (name of test and test clause):

Clause	Test(s)
1.6	Input Current Test
1.7	Marking and instructions
2.1	Access to energized parts
2.1	Protection from electric shock and energy hazards
2.2	SELV circuit
2.5	Limited power sources
2.6	Earthing conductor
2.9	Electrical insulation
2.10	Clearances, Creepage distances and distances through insulation
4.1	Stability
4.2	Mechanical strength
4.5	Thermal requirements
4.6	Openings in enclosure
5.1	Touch current and protective conductor current
5.2	Electric Strength Test
5.3	Abnormal operating and fault conditions
Annex C	Transformers

Load condition: Refer to general product information

Testing location:

See page 3

Radio and television interference suppression compliance with the EMC directive is necessary for achieving type certification. The appliance shall comply with the relevant EMC standards, depending on the equipment in question.	The LCD Monitor has not been tested for EMC and must be tested and considered before marketed into the country in which is to be sold.
1.5, 3.2.5 Power supply cord set	The equipment shall be provided with an approved mains cord set complying with the national regulations of the countries in which the appliance is to be sold.
1.7.2 Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.	The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: “Apparatet må tilkoples jordet stikkontakt In Sweden: “Apparaten skall anslutas till jordat uttag” In Denmark: “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.” The texts for Finland, Denmark Norway and Sweden were shown on the label.
1.7.2.1 Language of safety markings/instructions.	Instructions and equipment marking related to safety is applied and checked in English, the instruction and marking should be checked again when marketed in the countries using other

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	language.
1.7.2.4 The equipment is intended and tested for installation to IT power system (Norway)	The following information should be given (but it is not required) in the installation: “This Product is also designed for IT power system with phase to phase voltage 230 V”.
2.5 Limited Power Source.	Main board, key control board and LED driver supplied by +19V output comply with LPS requirement. The limited power sources complying with subclause 2.5 and the components mounted on V-1 or better PCB according to sub-clause 4.7.2.2. Refer to sub-clause 2.5 for detail.
2.7.5 Protection by several devices.	The standards require also a protective device in the neutral phase when connected to IT power system. For Norway, this is not required; refer to Lists of Decisions from OSM.
2.7.6 Warning to service personnel.	After operation of the protective device, the equipment is still under voltage if it is connected to an IT power system. A warning is required for service personnel. Norway does not require this warning.
4.2 wall or ceiling mounted equipment	VESA compatible wall mounting kit 100mm x 100mm, 4 piece screw M4 x 10mm used.

A. Wall Mounting (Optional)

NOTE: For use only with a UL Listed Wall Mount Bracket.

To obtain a wall-mounting kit or height adjustment base, contact your local dealer. Refer to the instructions that come with the base mounting kit. To convert your display from a desk-mounted to a wall-mounted display, do the following:

1. Find VESA compatible wall-mounting kit which meets the quaternions in section "Specifications".
2. Verify that the power button is turned Off, then disconnect the power cord.
3. Lay the display face down on a towel or blanket.
4. Remove the base. (Screws removal might be required.)
5. Attach the mounting bracket from the wall mounting kit using screws of the appropriate length.
6. Attach the display to the wall, following the instructions in the wall-mounting kit.

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Summary of compliance with National Differences (List of countries addressed):

The sample(s) tested compliance with the requirements of IEC 60950-1: 2005 (2nd Edition); Am1: 2009; Am2: 2013 and all CENELEC members as listed in EN 60950-1: 2006 +A11: 2009+A1: 2010+A12: 2011+ A2: 2013.
At the time of issuing this test report, not all countries are listed for IEC 60950-1:2005 (2nd Edition); Am1:2009; Am2:2013. Therefore this test report includes national differences for IEC 60950-1:2005(2nd Edition) Am1:2009, IEC 60950-1: 2005 (2nd Edition) .
All national differences listed in the IECEE Online CB Bulletin are covered by the Common Modifications, Special National Conditions, National Deviations, and the National Requirements noted above except for the countries which are documented in Attachment.
National Differences attached to this test report:
list from IEC 60950-1, 2nd edition: China.
list from IEC 60950-1: 2005 (2nd Edition); Am1: 2009: Korea.
list from IEC 60950-1: 2005 (2nd Edition); Am2: 2013: USA, Japan, Israeli and Canada

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Copy of marking plates:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

(Additional requirements for markings. See 1.7 NOTE)



Calibration	All instruments used in the tests given in this test report are calibrated and traceable to national or international standards. Further information about traceability will be given on request.
Measurement uncertainty	Measurement uncertainties are calculated for all instruments and instrument set-ups given in this report. Calculations are based on the principles given in the standard EA-4/02 (Dec. 1999), IEC Guide 115:2007 and other relevant internal Nemko-procedures. Further information about measurement uncertainties will be given on request.
Evaluation of results	If not explicitly stated otherwise in the standard, the test is passed if the measured value is equal to or below (above) the limit line, regardless of the measurement uncertainty. If the measured value is above (below) the limit line, the test is not passed - ref IEC Guide 115:2007. The instrumentation accuracy is within limits agreed by IECEE-CTL.

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Test item particulars..... :	
Equipment mobility.....:	[X] movable [] hand-held [] transportable [] stationary [] for building-in [] direct plug-in
Connection to the mains.....:	[X] pluggable equipment [X] type A [] type B [] permanent connection [X] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains
Operating condition.....:	[X] continuous [] rated operating / resting time:
Access location .....:	[X] operator accessible [] restricted access location
Over voltage category (OVC) .....:	[] OVC I [X] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values .....:	+10% / -10%
Tested for IT power systems .....:	[X] Yes [] No
IT testing, phase-phase voltage (V) .....:	230
Class of equipment .....:	[X] Class I [] Class II [] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) .....:	16A (20A for Canada and US)
Pollution degree (PD) .....:	[] PD 1 [X] PD 2 [] PD 3
IP protection class .....:	IPX0
Altitude during operation (m) .....:	< 5000m
Altitude of test laboratory (m) .....:	< 2000m
Mass of equipment (kg) .....:	Unit with base type A: Weight: The unit: 5.13kg with base, base: 2.06kg Dimension: Horizontal position of the unit: Approx.538mm x 190mm x max.502mm (min.354mm) with Base Vertical position of the unit: Approx.318mm x 190mm x max.628mm (min.551mm) with Base The base: Approx.255mm x 190mm x 430mm Unit with base type B: Weight: The unit: 6.27kg with base, base: 3.2kg Dimension: The unit: Approx.538mm x 222mm x max.512mm (min.388mm) with Base The base: Approx.340mm x 222mm x 430mm
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)

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- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item .....:	2022-04-25
Date(s) of performance of tests .....:	2022-04-25 to 2022-05-27

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General remarks:
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. **Throughout this report a ☐ comma / ☒ point is used as the decimal separator.**

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☒ **Yes** ☐ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	
1. TPV Electronics (Fujian) Co., Ltd.	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China
2. TPV Electronics (Fujian) Co., Ltd.	Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, P.R.China
3. TPV Electronics (Fujian) Co., Ltd.	Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.China
4. L&T Display Technology (Fujian) Ltd	Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, P.R.China
5. TPV Display Technology (China) Co., Ltd	No.106 Jinghai 3 Rd., BDA, Beijing City 100176 P.R. China
6. TPV Display Technology (Wuhan) Co., Ltd	Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,P.R.China
7. TPV Display Technology (Beihai) Co.,Ltd.	China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi,P.R.China
8. TREND SMART CE MEXICO S. DE R.L. DE C.V.	Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana, Baja California, C.P. 22435 Mexico
9. Envision Indústria de Produtos Eletrônicos Ltda.	Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM - Brasil
10. TPV TECHNOLOGY (THAILAND) COMPANY LIMITED	No.267 Mu7, Tha Tum Sub- District, Si Maha Pho District,Prachin Buri Province, Thailand
11. GeneTouch Corporation	No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012, Taiwan
12. Fábrica Austral de Productos Eléctricos S.A.	Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur, Argentina
13. Dixon Technologies (India) Ltd.	EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post, Revenue Vikruthamala, Yerpedu Mandelam, DistrictChittoor, Andhra Pradesh, 517526 India

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General product information:

The equipment under tests is LCD monitor with internal non-certified power supply for use in general office environment.

The built-in power supply model 715GD297 is an non-approved component, which was manufactured by Top Victory, see appended table 1.5.1 for the detail information.

The unit has the following features:
1. The internal metal chassis which covering building-in switching power supply is considered as a fire enclosure.
2. The external plastic enclosure is regarded as mechanical enclosure and electrical enclosure.
3. The unit is configured with LCD panel (with LED backlight)
4. The unit is configured with HDMI x 1, DP x 1, VGA x 1, USB 3.0 x 4, USB upstream x 1 and audio out x 1 ports, all data ports on main board are optional used.
5. The unit has two bases, type A and type B. Base type A can rotate clockwise 90 degree or anti-clockwise 90 degree. The base type B can be installed a PC which comply with L.P.S. to provide the signal. The PC has not evaluated in this report.

Load condition:
Full white display with Max. Brightness and contrast, picture provided from a computer and load 0.9A for all USB 3.0 port.

Unit with mode DP is considered as the worst case for testing, if not specified.

All the models have same design, except model name and can be any configure as below:

Power board	Main board	Base
715GD297	715GD288	Type A, type B

Additional information (requested by manufacturer):

1)The manufacturer declared that the product also fulfilled of the requirements of SANS 60950-1:2014 (Edition 2.2)/IEC 60950-1:2013 (Edition 2.2)

Maximum recommended ambient (Tmra): 40℃
Connection to the supply: Pluggable equipment type A with detachable power supply cord.
Circuit characteristics: The equipment contains Primary circuits, Secondary circuits (SELV).

1.1.2 – Additional requirements:
Exposure to extreme temperatures, excessive dust, moisture or vibration; to flammable gases; to corrosive or explosive atmospheres:
This equipment is intended to operate in a ”normal” environment (Offices and homes).
Electromedical equipment connected to the patient:
This equipment is not an electromedical equipment intended to be physically connected to a patient.

Equipment used in vehicles, ships or aircrafts, in tropical countries, or at elevations > 2000m:
This equipment is intended to operate in a "normal" environment (Offices and homes) and is intended to be operated under altitude up to 5000m, so the clearance is multiplied by the altitude correction factor (1.48 linear interpolation used), specified in table A.2 of IEC 60664-1.

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Abbreviations used in the report:

- normal conditions	**N.C.**	- single fault conditions	**S.F.C**
- functional insulation	**OP**	- basic insulation	**BI**
- double insulation	**DI**	- supplementary insulation	**SI**
- between parts of opposite polarity	**BOP**	- reinforced insulation	**RI**

Indicate used abbreviations (if any)

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	**GENERAL**		—
1.5	**Components**		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component standard. Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.	P
1.5.3	Thermal controls	No thermal controls.	N/A
1.5.4	Transformers	Transformer used are suitable for their intended applications and comply with relevant parts of this standard and particularly Annex C, see Annex C – Transformers.	P
1.5.5	Interconnecting cables	The interconnecting cables do not represent any hazard in the meaning of this standard.	P
1.5.6	Capacitors bridging insulation	X2, X1, Y1 or Y2 capacitors according to IEC 60384-14. (see appended table 1.5.1)	P
1.5.7	Resistors bridging insulation	Refer below:	—
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Bleeder resistors (R9901, R9908 in parallel; R9902, R9909 in parallel; R9903, R9910 in parallel, then three in series) between live and neutral located after main fuse.	P
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	No resistors bridging double or reinforced insulation between a.c mains and other circuits.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No resistors bridging double or reinforced insulation between a.c mains and antenna or coaxial cable.	N/A
1.5.8	Components in equipment for IT power systems	Certified capacitors connected between line and earth, ref. List of Critical Components and Sub-Cl.1.5.6.	P
1.5.9	Surge suppressors	No such component.	—
1.5.9.1	General	See below.	—
1.5.9.2	Protection of VDRs	See below.	N/A
1.5.9.3	Bridging of functional insulation by a VDR	No such component.	N/A
1.5.9.4	Bridging of basic insulation by a VDR	No such component.	N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No such component.	N/A
1.6	**Power interface**		P
1.6.1	AC power distribution systems	TN, and IT for Norway.	—
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	The equipment is not hand-held.	N/A
1.6.4	Neutral conductor	Neutral is insulated from earth with basic insulation throughout the equipment. Components connected between phases and earth are rated and certified for a working voltage: 250V.	P
1.7	**Marking and instructions**		P
1.7.1	Power rating and identification markings	The required marking is located on the outside surface of the equipment.	P
1.7.1.1	Power rating marking	See below	P
	Multiple mains supply connections.....:	Only one mains supply connections.	N/A
	Rated voltage(s) or voltage range(s) (V) ..... :	100-240V~	P
	Symbol for nature of supply, for d.c. only ..... :	The equipment is for a.c. supply.	N/A
	Rated frequency or rated frequency range (Hz) ... :	50/60Hz	—
	Rated current (mA or A)..... :	1.5A	—
1.7.1.2	Identification markings	See below.	P
	Manufacturer's name or trade-mark or identification mark ..... :	Lenovo	P

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Model identification or type reference ..... :	See page 2	—
	Symbol for Class II equipment only ..... :	The equipment is Class I.	N/A
	Other markings and symbols ..... :	The additional marking does not give rise to misunderstandings.	P
1.7.2	Safety instructions and marking	N, S, D and FI required marking for a unit which must be connected to protective earth only. The text is required because safety relies on connection to protective earth. The texts for Finland, Denmark Norway and Sweden were shown on the label.	P
1.7.2.1	General	Considered.	—
1.7.2.2	Disconnect devices	The equipment is provided with an appliance coupler.	P
1.7.2.3	Overcurrent protective device	Pluggable equipment Type A.	N/A
1.7.2.4	IT power distribution systems	The following or similar information should be given in the installation instruction: “This product is also designed for IT power distribution system with phase-to-phase voltage 230V”.	—
1.7.2.5	Operator access with a tool	All areas containing hazard(s) are inaccessible to the operator.	P
1.7.2.6	Ozone	The equipment does not produce Ozone.	N/A
1.7.3	Short duty cycles	The equipment is intended for continuous operation.	N/A
1.7.4	Supply voltage adjustment ..... :	No voltage selector.	N/A
	Methods and means of adjustment; reference to installation instructions ..... :		—
1.7.5	Power outlets on the equipment ..... :	No standard power outlet.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) ..... :	F9901, T3.15AL 250V (located on PSU primary side)	P
1.7.7	Wiring terminals	Refer below.	—
1.7.7.1	Protective earthing and bonding terminals ..... :	Equipment provided with appliance inlet. Marking of the protective earthing terminal is not applicable.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.7.2	Terminals for a.c. mains supply conductors	The equipment is not permanently connected or provided with a non-detachable power supply cord.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	The equipment is not supplied from d.c mains.	N/A
1.7.8	Controls and indicators	Refer below.	—
1.7.8.1	Identification, location and marking ..... :	No control.	N/A
1.7.8.2	Colours ..... :	No indicators with colours where safety is involved.	N/A
1.7.8.3	Symbols according to IEC 60417 ..... :	The standby switch is marked with the symbol " ⏻ " (IEC 60417-1 No. 5009).	P
1.7.8.4	Markings using figures ..... :	No controls.	N/A
1.7.9	Isolation of multiple power sources..... :	Only one connection supplying hazardous voltages and energy levels to the equipment.	N/A
1.7.10	Thermostats and other regulating devices ..... :	No thermostats or other regulating devices.	N/A
1.7.11	Durability	The marking withstands required tests.	P
1.7.12	Removable parts	No marking is placed on removable parts.	N/A
1.7.13	Replaceable batteries ..... :	No replaceable batteries in the equipment.	N/A
	Language(s) .....:		—
1.7.14	Equipment for restricted access locations ..... :	Equipment not intended for installation in RAL.	N/A

2	**PROTECTION FROM HAZARDS**		P
2.1	Protection from electric shock and energy hazards		—
2.1.1	Protection in operator access areas	Refer below:	—
2.1.1.1	Access to energized parts	There is adequate protection against operator contact with bare parts at ELV or hazardous voltage or parts separated from these with basic or functional insulation only (except protective earth), also after operator detachable parts are removed and doors and covers are opened. No hazardous voltages exceeding 1000V a.c. or 1500V d.c. Checked by test finger and test pin.	P

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Test by inspection ..... :	Complies.	P
	Test with test finger (Figure 2A) ..... :	Complies.	P
	Test with test pin (Figure 2B) ..... :	Complies	P
	Test with test probe (Figure 2C) ..... :	No TNV circuit in the equipment.	N/A
2.1.1.2	Battery compartments	No TNV circuits in the equipment.	N/A
2.1.1.3	Access to ELV wiring	No internal wiring at ELV accessible to the operator.	N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)	(see appended table 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring	No internal wiring at ELV accessible to the operator.	N/A
2.1.1.5	Energy hazards .....:	No energy hazard in operator access area. Checked by means of the test finger. (see appended table 2.1.1.5)	P
2.1.1.6	Manual controls	No shafts of knobs etc. at ELV or hazardous voltage or TNV.	N/A
2.1.1.7	Discharge of capacitors in equipment	The capacitance of the input circuit is > 0.1µF. The measurements were performed in worst case condition with regard to the fuse.	P
	Measured voltage (V); time-constant (s).....:	Max. time constant measured 564ms for 90V. 648ms for 264V. The X-capacitors and bleeding resistors used are at max. rated value, see Table 1.5.	—
2.1.1.8	Energy hazards – d.c. mains supply	Not connected to DC mains supply.	N/A
	a) Capacitor connected to the d.c. mains supply .. :		N/A
	b) Internal battery connected to the d.c. mains supply .....:		N/A
2.1.1.9	Audio amplifiers .....:		N/A
2.1.2	Protection in service access areas	Checked by inspection unintentional contact is unlikely during service operations.	P
2.1.3	Protection in restricted access locations	Equipment not intended for installation in RAL.	N/A

2.2	**SELV circuits**		P
2.2.1	General requirements	SELV limits are not exceeded under normal condition.	P

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.2.2	Voltages under normal conditions (V) ..... :	Within SELV limits. (see appended table 2.2)	P
2.2.3	Voltages under fault conditions (V) ..... :	Within SELV limits. (see appended table 2.2)	P
2.2.4	Connection of SELV circuits to other circuits ..... :	SELV circuits are only connected to other SELV circuits.	P
2.3	**TNV circuits**		N/A
2.3.1	Limits	No TNV circuits.	N/A
	Type of TNV circuits..... :		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions ..... :		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed..... :		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed..... :		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	**Limited current circuits**		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		N/A
	Frequency (Hz) ..... :		—
	Measured current (mA)..... :		—
	Measured voltage (V) ..... :		—
	Measured circuit capacitance (nF or µF) ..... :		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	**Limited power sources**		P
	a) Inherently limited output	(see appended table 2.5)	P
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		P
	Use of integrated circuit (IC) current limiters		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA) ..... :	(see appended table 2.5)	—
	Current rating of overcurrent protective device (A) .:		—
2.6	**Provisions for earthing and bonding**		P
2.6.1	Protective earthing	Accessible conductive parts are reliably connected to protective earth.	P
2.6.2	Functional earthing	Functional earthing is separated from hazardous voltages by basic insulation and protective earth or reinforced insulation.	P
2.6.3	Protective earthing and protective bonding conductors		—
2.6.3.1	General		—
2.6.3.2	Size of protective earthing conductors	Detachable power cord set provided. see Appended table 1.5.1.	P
	Rated current (A), cross-sectional area (mm^2), AWG ..... :	0.75mm^2	—
2.6.3.3	Size of protective bonding conductors		—
	Rated current (A), cross-sectional area (mm^2), AWG ..... :	Rated current of the circuit under test: 16A (20 A for Canada and US). Refer to sub-cl. 2.6.3.4	—
	Protective current rating (A), cross-sectional area (mm^2), AWG ..... :		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min) ..... :	From the appliance inlet to GND on metal chassis U=0.128V, R=4mΩ,32A/2min U=0.16V, R=4mΩ,40A/2min From the appliance inlet to GND on trace near C9903/C9904 U=0.256V,R=8mΩ,32A/2min U=0.32V, R=8mΩ,40A/2min From the appliance inlet to GND on trace near C9902 U=0.48V,R=15mΩ,32A/2min U=0.6V, R=15mΩ,40A/2min	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.5	Colour of insulation ..... :	Protective earth terminal and bonding conductors are in appliance inlet. No green/yellow insulated protective earth conductors are provided.	N/A
2.6.4	Terminals		—
2.6.4.1	General		—
2.6.4.2	Protective earthing and bonding terminals	The equipment is provided with an appliance inlet and the test of sub-clause 2.6.3.4 was performed for protective bonding conductor and their terminals.	N/A
	Rated current (A), type, nominal thread diameter (mm)..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	The equipment is provided with an appliance inlet.	P
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment	No interconnection of equipment.	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	There are no switches or overcurrent protective devices in the protective earthing / bonding conductors.	P
2.6.5.3	Disconnection of protective earth	It is not possible to disconnect protective earth without disconnecting mains; an appliance coupler is used as disconnect device.	P
2.6.5.4	Parts that can be removed by an operator	No operator removable parts with protective earth connection except supply cord.	P
2.6.5.5	Parts removed during servicing	Protective earthed parts cannot be removed in a way which impairs safety.	P
2.6.5.6	Corrosion resistance	No risk of corrosion.	P
2.6.5.7	Screws for protective bonding	Adequate connection of protective bonding.	P
2.6.5.8	Reliance on telecommunication network or cable distribution system	Protective earthing does not rely on a telecommunication network.	N/A
2.7	**Overcurrent and earth fault protection in primary circuits**		P
2.7.1	Basic requirements	Protective device is integrated in the equipment, see also Sub-clause 5.3.	P
	Instructions when protection relies on building installation	Protective device is integrated in the equipment.	P

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.2	Faults not simulated in 5.3.7	Considered.	N/A
2.7.3	Short-circuit backup protection	Adequate protective device.	P
2.7.4	Number and location of protective devices ..... :	In Norway, IT power distribution system is used. Equipment with a single protective device is accepted in Norway. Other countries (e.g. Germany and Belgium) may have additional requirements.	P
2.7.5	Protection by several devices	Only one protective device. See Sub-clause 2.7.4.	N/A
2.7.6	Warning to service personnel ..... :	After operation of the protective device, the equipment is still under voltage if it is connected to an IT-power distribution system. A warning is required for service persons. Norway does not require this warning. See also Sub-clause 2.7.4.	N/A
2.8	**Safety interlocks**		N/A
2.8.1	General principles	No safety interlocks.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) ..... :		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A
2.9	**Electrical insulation**		P

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.9.1	Properties of insulating materials	Neither natural rubber, materials containing asbestos nor hygroscopic materials are used as insulation. No driving belts or couplings used. After the humidity treatment of 2.9.2, the insulation is then subjected to the relevant electric strength test of 5.2.2.	P
2.9.2	Humidity conditioning	Humidity treatment performed for 120 hrs.	P
	Relative humidity (%), temperature (℃) ..... :	93%, 40℃ .	—
2.9.3	Grade of insulation	Insulation is considered to be functional, basic, supplementary, reinforced or double insulation.	P
2.9.4	Separation from hazardous voltages	See below	P
	Method(s) used ..... :	Method 1 and 2 are used.	—

2.10	**Clearances, creepage distances and distances through insulation**		P
2.10.1	General	See below.	P
2.10.1.1	Frequency ..... :	Considered.	P
2.10.1.2	Pollution degrees ..... :	Pollution Degree 2.	P
2.10.1.3	Reduced values for functional insulation	The functional insulation complied with clause 5.3.4. a) and c)	P
2.10.1.4	Intervening unconnected conductive parts	Considered.	—
2.10.1.5	Insulation with varying dimensions	No such transfomer used.	N/A
2.10.1.6	Special separation requirements	Special separation is not used.	N/A
2.10.1.7	Insulation in circuits generating starting pulses	The circuit will not generate starting pulse.	N/A
2.10.2	Determination of working voltage	(see appended table 2.10.2)	P
2.10.2.1	General	Refer below:	P
2.10.2.2	RMS working voltage	(see appended table 2.10.2)	P
2.10.2.3	Peak working voltage	(see appended table 2.10.2)	P
2.10.3	Clearances	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.1	General	Refer below:	—
2.10.3.2	Mains transient voltages	2500V	—
	a) AC mains supply ..... :	240V	P
	b) Earthed d.c. mains supplies ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	c) Unearthed d.c. mains supplies ..... :		N/A
	d) Battery operation ..... :		N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	Only the functional insulation in secondary circuits complied with clause 5.3.4.	N/A
2.10.3.5	Clearances in circuits having starting pulses	The circuit will not generate starting pulse.	N/A
2.10.3.6	Transients from a.c. mains supply ..... :	Considered.	P
2.10.3.7	Transients from d.c. mains supply ..... :	Not connected to d.c mains supply.	N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems ..... :	Not connected to telecommunication networks and cable distribution systems.	N/A
2.10.3.9	Measurement of transient voltage levels	See below.	—
	a) Transients from a mains supply	Measurement not relevant.	N/A
	For an a.c. mains supply ..... :		N/A
	For a d.c. mains supply ..... :		N/A
	b) Transients from a telecommunication network :	Not connected to telecommunication networks.	N/A
2.10.4	Creepage distances	See below.	—
2.10.4.1	General	Considered.	—
2.10.4.2	Material group and comparative tracking index	See below.	—
	CTI tests..... :	Material group IIIb is used.	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation	See below.	—
2.10.5.1	General	Considered.	—
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5	Cemented joints	Not used cemented joints.	N/A
2.10.5.6	Thin sheet material – General	(see appended table 2.10.5)	P
2.10.5.7	Separable thin sheet material	(see appended table 2.10.5)	P
	Number of layers (pcs) ..... :	2 layers provide for T901. (1 layer tested)	—
2.10.5.8	Non-separable thin sheet material	Not used.	N/A
2.10.5.9	Thin sheet material – standard test procedure	The sub-clause 2.10.5.10 is used.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure	(see appended table 2.10.5)	P
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.11	Insulation in wound components	Not used	N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage ..... :		N/A
	a) Basic insulation not under stress ..... :		N/A
	b) Basic, supplementary, reinforced insulation ..... :		N/A
	c) Compliance with Annex U ..... :		N/A
	Two wires in contact inside wound component; angle between 45° and 90° ..... :		N/A
2.10.5.13	Wire with solvent-based enamel in wound components	No wire with solvent-based enamel in wound components.	N/A
	Electric strength test		N/A
	Routine test		N/A
2.10.5.14	Additional insulation in wound components	No additional insulation used	N/A
	Working voltage ..... :		N/A
	- Basic insulation not under stress ..... :		N/A
	- Supplementary, reinforced insulation ..... :		N/A
2.10.6	Construction of printed boards	See below.	—
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	P
2.10.6.2	Coated printed boards	No special coating in order to reduce distances.	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs) ..... :		N/A
2.10.7	Component external terminations	Coatings not used over terminations to increase effective creepage and clearance distances.	N/A
2.10.8	Tests on coated printed boards and coated components	No special coating in order to reduce distance.	N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.9	Thermal cycling	Certified opto-coupler used	P
2.10.10	Test for Pollution Degree 1 environment and insulating compound	Certified opto-coupler used	P
2.10.11	Tests for semiconductor devices and cemented joints	Certified opto-coupler used	P
2.10.12	Enclosed and sealed parts	Certified opto-coupler used	P
3	**WIRING, CONNECTIONS AND SUPPLY**		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Adequate cross sectional areas on internal wiring.	P
3.1.2	Protection against mechanical damage	Wireways are smooth and free from edges. Wires are adequately fixed to prevent excessive strain on wire and terminals and avoiding damage to the insulation of the conductors.	P
3.1.3	Securing of internal wiring	Internal wiring is secured against excessive strain, loosening of terminals and damage to the conductor insulation.	P
3.1.4	Insulation of conductors	Insulation on internal conductors is considered to be of adequate quality and suitable for the application and the working voltage involved.	P
3.1.5	Beads and ceramic insulators	No beads or similar ceramic insulators on conductors.	N/A
3.1.6	Screws for electrical contact pressure	Electrical screw connection is only connecting protective earth to chassis. Metal screw engages more than 2 threads. Screws made of insulating material are not used where electrical connections, including protective earthing, are involved.	P
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material.	P
3.1.8	Self-tapping and spaced thread screws	Thread-cutting or space thread screws are not used for electrical connections.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.1.9	Termination of conductors	Terminations cannot become displaced so that clearances and creepage distances can be reduced.	P
	10 N pull test	Conducted.	P
3.1.10	Sleeving on wiring	Sleeves are not used as supplementary insulation.	N/A
3.2	**Connection to a mains supply**		P
3.2.1	Means of connection	Refer below:	—
3.2.1.1	Connection to an a.c. mains supply	The equipment is provided with an appliance inlet.	P
3.2.1.2	Connection to a d.c. mains supply	The equipment is not for connection to a d.c. mains supply.	N/A
3.2.2	Multiple supply connections	Only one supply connection.	N/A
3.2.3	Permanently connected equipment	The equipment is not intended for permanent connection to the mains.	N/A
	Number of conductors, diameter of cable and conduits (mm) .....:		—
3.2.4	Appliance inlets	The appliance inlet complies with IEC 60320 and is properly placed to avoid hazards after insertion of the appliance coupler.	P
3.2.5	Power supply cords	Refer below:	—
3.2.5.1	AC power supply cords	Detachable power cord set provided. see Appended table 1.5.1.	P
	Type .....:		—
	Rated current (A), cross-sectional area (mm^2), AWG .....:	0.75mm^2	—
3.2.5.2	DC power supply cords	The equipment is not for connecting to d.c. mains.	N/A
3.2.6	Cord anchorages and strain relief	Equipment provided with an appliance inlet.	N/A
	Mass of equipment (kg), pull (N) .....:		—
	Longitudinal displacement (mm) .....:		—
3.2.7	Protection against mechanical damage	No sharp points or cutting edges on the equipment surfaces.	P
3.2.8	Cord guards	The equipment is neither hand-held nor intended to be moved during operation.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Diameter or minor dimension D (mm); test mass (g) .....:		—
	Radius of curvature of cord (mm) .....:		—
3.2.9	Supply wiring space	Equipment provided with an appliance inlet.	N/A
3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals	Equipment provided with an appliance inlet.	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2) .....:		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm) .....:		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	**Disconnection from the mains supply**		P
3.4.1	General requirement	See Sub-clause 3.4.2.	P
3.4.2	Disconnect devices	The equipment is provided with an appliance coupler.	P
3.4.3	Permanently connected equipment	Not permanently connected equipment.	N/A
3.4.4	Parts which remain energized	No parts remain energized after the disconnect device.	N/A
3.4.5	Switches in flexible cords	No isolating switch in the cord set.	N/A
3.4.6	Number of poles - single-phase and d.c. equipment	The disconnect device disconnects both poles simultaneously.	P
3.4.7	Number of poles - three-phase equipment	Single phase equipment.	N/A
3.4.8	Switches as disconnect devices	No switches provided.	N/A
3.4.9	Plugs as disconnect devices	The appliance coupler is regarded as disconnect device, no warning is required.	N/A
3.4.10	Interconnected equipment	No interconnections using hazardous voltages.	N/A
3.4.11	Multiple power sources	One power source only.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.5	**Interconnection of equipment**		P
3.5.1	General requirements	Considered.	—
3.5.2	Types of interconnection circuits ..... :	SELV	P
3.5.3	ELV circuits as interconnection circuits	No ELV.	N/A
3.5.4	Data ports for additional equipment	SELV circuit of data ports on main board supplied by +20V limited power sources complying with 2.5 and mounted on PCB of more than FLAMMABILITY CLASS V-1 (Refer to Clause 2.5)	P
4	**PHYSICAL REQUIREMENTS**		P
4.1	Stability		P
	Angle of 10°	Unit does not overbalance at 10°. (Requested by manufacturer)	P
	Test force (N) ..... :	The unit is not floor-standing.	N/A
4.2	**Mechanical strength**		P
4.2.1	General	Complies with the requirement also after tests described below are applied.	P
	Rack-mounted equipment.	No rack-mounted equipment.	N/A
4.2.2	Steady force test, 10 N	No hazard, ref. comment in appended table 2.10.3 and 2.10.4	P
4.2.3	Steady force test, 30 N	No hazard, test is performed at internal metal chassis.	P
4.2.4	Steady force test, 250 N	No hazard. The test is performed at all source of plastic enclosure.	P
4.2.5	Impact test	Refer below:	—
	Fall test	500g steel ball falls freely from 1.3m on top, back and bottom of plastic enclosure, all source are tested, no access to hazardous parts.	P
	Swing test	No hazard as result from the steel sphere swing test.	P
4.2.6	Drop test; height (mm) ..... :	Drop test not applicable.	N/A
4.2.7	Stress relief test	Test is carried out at 70°C / 7hrs. No risk of shrinkage or distortion on enclosures due to release of internal stresses.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.8	Cathode ray tubes	CRT(s) not used in the equipment.	N/A
	Picture tube separately certified ..... :		N/A
4.2.9	High pressure lamps	No high pressure lamps in the equipment.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :	Mass of equipment=3.07kg (without base), tested=91N for 1min. 4 piece screws M4 x 10mm used, see summary of tesing for details. The equipment and its associated mounting means still remain secure during the test.	P
4.3	**Design and construction**		P
4.3.1	Edges and corners	All edges and corners are rounded and/or smoothed.	P
4.3.2	Handles and manual controls; force (N) .....:	No knobs, grips, handles, lever etc.	N/A
4.3.3	Adjustable controls	No hazardous adjustable controls.	N/A
4.3.4	Securing of parts	No loosening of parts impairing creepage distances or clearances is likely to occur.	P
4.3.5	Connection by plugs and sockets	SELV connectors do not comply with IEC 60320 or IEC 60083.	P
4.3.6	Direct plug-in equipment	Not intended to plug directly into a wall socket-outlet.	N/A
	Torque ..... :		—
	Compliance with the relevant mains plug standard ..... :		—
4.3.7	Heating elements in earthed equipment	No heating elements provided.	N/A
4.3.8	Batteries	No batteries in the equipment.	N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	Insulation is not exposed to oil, grease etc.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.10	Dust, powders, liquids and gases	The equipment does not generate ionizing radiation or use a laser, and does not contain flammable liquids or gases.	N/A
4.3.11	Containers for liquids or gases	No containers for liquids or gases in the equipment.	N/A
4.3.12	Flammable liquids ..... :	The equipment does not contain flammable liquid.	N/A
	Quantity of liquid (l) ..... :		N/A
	Flash point (°C) ..... :		N/A
4.3.13	Radiation	Refer below:	—
4.3.13.1	General	Refer below:	—
4.3.13.2	Ionizing radiation	The equipment does not generate ionizing radiation.	N/A
	Measured radiation (pA/kg) ..... :		—
	Measured high-voltage (kV)..... :		—
	Measured focus voltage (kV) ..... :		—
	CRT markings ..... :		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	The equipment does not produce significant UV radiation.	N/A
	Part, property, retention after test, flammability classification ..... :		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation ..... :	The equipment does not produce significant UV radiation.	N/A
4.3.13.5	Lasers (including laser diodes) and LEDs	No Laser product used.	N/A
4.3.13.5.1	Lasers (including laser diodes)	No laser.	N/A
	Laser class ..... :		—
4.3.13.5.2	Light emitting diodes (LEDs)	LEDs were diffusive type	—
4.3.13.6	Other types ..... :	The equipment does not generate other types of radiation.	N/A

4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General	No moving parts.	N/A
4.4.2	Protection in operator access areas ..... :	No moving parts.	N/A
	Household and home/office document/media shredders	Not intended for installation in RAL.	N/A
4.4.3	Protection in restricted access locations ..... :	Unintentional contact is not likely in service access areas.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.4.4	Protection in service access areas	No moving parts.	N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a)……:		N/A
	Is considered to cause pain, not injury. b) ……...:		N/A
	Considered to cause injury. c) ……...:		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning ……...:		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning ……...:		N/A
4.5	**Thermal requirements**		P
4.5.1	General	See below.	P
4.5.2	Temperature tests	(see appended table 4.5)	—
	Normal load condition per Annex L ..... :		P
4.5.3	Temperature limits for materials	(see appended table 4.5)	—
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat ..... :	(see appended table 4.5.5)	P
4.6	**Openings in enclosures**		P
4.6.1	Top and side openings	Combined openings with chassis and plastic enclosure in front, side, rear do not allow foreign objects entering the equipment to fall on bare parts. Also, openings are not located within 5ϑf fire hazardous par ts.	P
	Dimensions (mm) ..... :	(see appended table 4.6.1,4.6.2)	—
4.6.2	Bottoms of fire enclosures	Fire enclosure (metal bottom) construction is considered to comply with the requirements	P
	Construction of the bottom, dimensions (mm) ..... :	(see appended table 4.6.1,4.6.2)	—
4.6.3	Doors or covers in fire enclosures	No doors or covers in fire enclosure.	N/A
4.6.4	Openings in transportable equipment	The unit is not regarded as transportable equipment.	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.6.4.1	Constructional design measures	The unit is not regarded as transportable equipment.	N/A
	Dimensions (mm) ..... :		—
4.6.4.2	Evaluation measures for larger openings	The unit is not regarded as transportable equipment.	N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes	The adhesive for mylar sheet secure was used. All sources listed in table 1.5.1 were tested.	P
	Conditioning temperature (°C), time (weeks) ..... :	The tests were performed for mylar sheet secured. 1. 100°C for one week. 2. Remove from oven and leave at 25°C for 1h. 3.Place in freezer at -40°C for 4h. 4.Remove from freezer and allow come to 25°C for 8h. 5. Plase in a compartment at 95% relative humidity for 72h. 6.Remove and leave at 25°C for 1h. 7.Place in oven at 100°C for 4h. 8. Remove and allow sample to reach 25°C over 8h. For source of adhesive material, see appended table 1.5.1	—
4.7	**Resistance to fire**		P
4.7.1	Reducing the risk of ignition and spread of flame	Method 1 is used.	P
	Method 1, selection and application of components wiring and materials	(see appended table 1.5.1)	P
	Method 2, application of all of simulated fault condition tests	Not used method 2.	N/A
4.7.2	Conditions for a fire enclosure	Refer below.	—
4.7.2.1	Parts requiring a fire enclosure	The fire enclosure is required to cover all parts except key control board and main board.	P
4.7.2.2	Parts not requiring a fire enclosure	Key control board and main board are not required by a fire enclosure.	P
4.7.3	Materials		P

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.1	General	Components and materials have adequate flammability classification. See appended table 1.5.1.	P
4.7.3.2	Materials for fire enclosures	The fire enclosure is constructed metal.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	Min.HB material.	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	Other materials inside fire enclosure are minimum V-2 material.	P
4.7.3.5	Materials for air filter assemblies	No air filters in the equipment.	N/A
4.7.3.6	Materials used in high-voltage components	No parts exceeding 4kV.	N/A
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		P
5.1	**Touch current and protective conductor current**		P
5.1.1	General	Test conducted in accordance with 5.1.2 to 5.1.7.	P
5.1.2	Configuration of equipment under test (EUT)	See below.	—
5.1.2.1	Single connection to an a.c. mains supply	No interconnection of equipment.	N/A
5.1.2.2	Redundant multiple connections to an a.c. mains supply	No multiple power sources.	N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	No multiple power sources.	N/A
5.1.3	Test circuit	Tested for connection to IT power distribution system (also relevant for TN or TT power distribution system).	P
5.1.4	Application of measuring instrument	Measuring instrument D1 is used.	P
5.1.5	Test procedure	Considered.	—
5.1.6	Test measurements	See below	—
	Supply voltage (V) ..... :	264V,60Hz	—
	Measured touch current (mA) ..... :	(see appended table 5.1)	—
	Max. allowed touch current (mA) ..... :	(see appended table 5.1)	—
	Measured protective conductor current (mA) ..... :		—
	Max. allowed protective conductor current (mA) .. :		—
5.1.7	Equipment with touch current exceeding 3,5mA	The touch current does not exceed 3.5mA.	N/A
5.1.7.1	General ..... :	See below	—
5.1.7.2	Simultaneous multiple connections to the supply		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	Not connected to a telecommunication network nor a cable distribution system.	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) ..... :		—
	Measured touch current (mA) ..... :		—
	Max. allowed touch current (mA) ..... :		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports ..... :		—
	b) EUT whose telecommunication ports have no reference to protective earth		—
5.2	**Electric strength**		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure	(see appended table 5.2)	P
5.3	**Abnormal operating and fault conditions**		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	There is no motor in the equipment.	N/A
5.3.3	Transformers	(see appended Annex C)	P
5.3.4	Functional insulation ..... :	Complies with a) and c).	P
5.3.5	Electromechanical components	No electromechanical components in secondary circuits.	N/A
5.3.6	Audio amplifiers in ITE ..... :		N/A
5.3.7	Simulation of faults	(see appended table 5.3)	P
5.3.8	Unattended equipment	No thermostats, temperature limiters or thermal cut-outs.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	See below.	P
5.3.9.1	During the tests	No fire or molten metal occurred and no deformation of enclosure during the tests.	P

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.9.2	After the tests	No reduction of clearance and creepage distances. Electric strength test is made on functional ,basic, supplementary and reinforced insulation.	P
6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		—
6.1.1	Protection from hazardous voltages		—
6.1.2	Separation of the telecommunication network from earth		—
6.1.2.1	Requirements	No TNV circuit.	N/A
	Supply voltage (V) .....:		—
	Current in the test circuit (mA) .....:		—
6.1.2.2	Exclusions .....:		N/A
6.2	**Protection of equipment users from overvoltages on telecommunication networks**		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A
6.3	**Protection of the telecommunication wiring system from overheating**		N/A
	Max. output current (A) ..... :		—
	Current limiting method ..... :		—
7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		N/A
7.1	General	Not connected to Cable Distribution System.	N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
7.4.3	Impulse test		N/A
A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples ..... :		—
	Wall thickness (mm)..... :		—
A.1.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.1.3	Mounting of samples ..... :		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D ..... :		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A
A.2.1	Samples, material ..... :		—
	Wall thickness (mm)..... :		—
A.2.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.2.3	Mounting of samples ..... :		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C ..... :		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A
B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		N/A
B.1	General requirements		N/A
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) ..... :		—
	Electric strength test: test voltage (V) ..... :		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) ..... :		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V) ..... :		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V) ..... :		—
C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		P
	Position ..... :	Primary to SELV	—
	Manufacturer ..... :	(see appended table 1.5.1)	—

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Type ..... :	(see appended table 1.5.1)	—
	Rated values ..... :	(see appended table 1.5.1)	—
	Method of protection ..... :	Inherent protection	—
C.1	Overload test	(see appended table 5.3)	P
C.2	Insulation	The reinforced insulation fulfill the requirement in Sub-clause 2.10 and relevant tests of Sub-clause 5.2.2	P
	Protection from displacement of windings ..... :	Secured by tubing and insulation tape. (see appended table C.2)	P
D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		P
D.1	Measuring instrument	Figure D.1 used.	P
D.2	Alternative measuring instrument	Measuring instrument D1 is used.	N/A
E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**		N/A
F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)**		P
G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply ..... :		N/A
G.2.2	Earthed d.c. mains supplies ..... :		N/A
G.2.3	Unearthed d.c. mains supplies ..... :		N/A
G.2.4	Battery operation ..... :		N/A
G.3	Determination of telecommunication network transient voltage (V) ..... :		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks .... :		N/A
G.4.2	Transients from telecommunication networks ..... :		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances ..... :		N/A
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		N/A
J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		P
	Metal(s) used ..... :		—
K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)**		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V) ..... :		N/A
K.3	Thermostat endurance test; operating voltage (V) :		N/A
K.4	Temperature limiter endurance; operating voltage (V) ..... :		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)**		P
L.1	Typewriters	Not used.	N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		P
M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) .....:		—
M.3.1.2	Voltage (V) .....:		—
M.3.1.3	Cadence; time (s), voltage (V) .....:		—
M.3.1.4	Single fault current (mA) .....:		—

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.3.2	Tripping device and monitoring voltage .....:		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V) .....:		N/A
N	**ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)**		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	**ANNEX P, NORMATIVE REFERENCES**		—
Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		N/A
	- Preferred climatic categories .....:		N/A
	- Maximum continuous voltage .....:		N/A
	- Combination pulse current .....:		N/A
	Body of the VDR Test according to IEC60695-11-5.....:		—
	Body of the VDR. Flammability class of material (min V-1).....:		N/A
R	**ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		N/A
			—
U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		N/A
			—

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)**		P
V.1	Introduction	See below	—
V.2	TN power distribution systems	See sub-clause 1.6.1.	P

W	**ANNEX W, SUMMATION OF TOUCH CURRENTS**		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A

X	**Annex X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)**		**P**
X.1	Determination of maximum input current	Considered.	P
X.2	Overload test procedure		P

Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**		N/A
Y.1	Test apparatus .....:		N/A
Y.2	Mounting of test samples .....:		N/A
Y.3	Carbon-arc light-exposure apparatus .....:		N/A
Y.4	Xenon-arc light exposure apparatus .....:		N/A

Z	**ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)**	N/A

AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**	N/A
BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**	—

CC	**ANNEX CC, Evaluation of integrated circuit (IC) current limiters**		N/A
CC.1	General		N/A
CC.2	Test program 1.....:		N/A
CC.3	Test program 2.....:		N/A
CC.4	Test program 3.....:		N/A
CC.5	Compliance.....:		N/A

DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment**	N/A

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IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
DD.1	General		N/A
DD.2	Mechanical strength test, variable N……..:		N/A
DD.3	Mechanical strength test, 250N, including end stops……:		N/A
DD.4	Compliance……:		N/A
EE	**ANNEX EE, Household and home/office document/media shredders**		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols……:		N/A
	Information of user instructions, maintenance and/or servicing instructions……:		N/A
EE.3	Inadvertent reactivation test……:		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols……:		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A) ……:		N/A
	Test with wedge probe (Figure EE1 and EE2) ……:		N/A

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1.5.1	TABLE: List of critical components	P

object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
LCD panel (with LED backlight)	AUO	M238********* (* can be 0-9, a-z, A-Z, '.', -, or blank)	23.8”TFT (60.452cm), glass is min. 0.4 mm thickness	IEC60950-1	Tested in the equip.
Alt.)	BOE	MV238******** (* can be 0-9, a-z, A-Z, '.', -, or blank)	23.8”TFT (60.452cm), glass is min. 0.4 mm thickness	IEC60950-1	Tested in the equip.
Alt.)	LGD	LM238******** (* can be 0-9, a-z, A-Z, '.', -, or blank)	23.8”TFT (60.452cm), glass is min. 0.4 mm thickness	IEC60950-1	Tested in the equip.
Alt.)	Samsung	LTM238******** (* can be 0-9, a-z, A-Z, '.', -, or blank)	23.8”TFT (60.452cm), glass is min. 0.4 mm thickness	IEC60950-1	Tested in the equip.
Alt.)	INNOLUX	M238******** (* can be 0-9, a-z, A-Z, '.', -, or blank)	23.8”TFT (60.452cm), glass is min. 0.4 mm thickness	IEC60950-1	Tested in the equip.
Alt.)	TPV	TPM238WF********* (* can be 0-9, a-z, A-Z, '.', -, or blank)	23.8”TFT (60.452cm), glass is min. 0.4 mm thickness	IEC60950-1	Tested in the equip.

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Plastic Enclosure	LOTTE Chemical Corporation	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++) (RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), LS-1159(r), LS-1159SF, LS-1159F, NH-1036, SD-0150T, ABF-0200E	HB or better, thickness 1.5mm min.	UL94	UL
Alt.)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A			UL
Alt.)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S			UL
Alt.)	Mocom Compounds GmbH & Co KG	GP-35, GP-22, 495F			UL
Alt.)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series			UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG494(#), XG569(#), GP-1000, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#), GN-2101F(m)	HB or better, thickness 1.5mm min.	UL94	UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, thickness 1.5mm min.	UL94	UL
Alt.)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35			UL
Alt.)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000, ABS-340*(*=0~10), HIPS-2230+			UL
Alt.)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c), GA35, NC30, GA65, GA85			UL
Alt.)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+ (+: A to Z)			UL
Alt.)	GUO HENG(DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(####)(Y), YOUHO-1303B, YOUHO1312B, YOUHO(1304)(B), YOUHO(1333)(B), YOUHO(1303)(OP)			UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, thickness 1.5mm min.	UL94	UL
Alt.)	HUIZHOU WOTE	2100			UL
Alt.)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)			UL
Alt.)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065			UL
Alt.)	Trinseo Europe GmbH	STYRON A-TECH 1200			UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	INEOS STYROLUTION POLYMERS (FOSHAN) COMPANY LIMITED	3441, 260-XX	HB or better, thickness 1.5mm min.	UL94	UL
Alt.)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106			UL
Alt.)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)			UL
Alt.)	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK			UL
Alt.)	CHI LIN TECHNOLOGY CO LTD	GA-1(aaa), GA-1535, GA-1565			UL
Alt.)	SAMYANG CORPORATION	210NHF(@), 210NHF			UL
Alt.)	COVESTRO DEUTSCHLAND AG	GF99011 MF			UL
Alt.)	CHI MEI CORPORATION	PC-540(Y)(a)			UL
Alt.)	QING DAO GON TECHNOLOGY CO.,LTD	ABS21(xx)G-A, ABS2030A, ABS20(xx)B			UL
Alt.)	SHENZHEN FUHENG NEW MATERIAL CO LTD	HIPS-494, HIPS-568			UL
Alt.)	UNIC TECHNOLOGY CORP	UR-7085+(R90)			UL
Base type A and type B (Optional)	Interchangeable	Interchangeable	Metallic that covered by the plastic which HB or better	IEC 60950-1	Test in equipment.
Metal Chassis (for fire enclosure bottom)	Interchangeable	Interchangeable	Metal, Thickness min 0.5+0.5mm	IEC 60950-1	Test in equipment.
Metal Chassis (for bottom, except fire enclosure bottom)	Interchangeable	Interchangeable	Metal, Thickness min 0.5mm	IEC 60950-1	Test in equipment.
PCB	Interchangeable	Interchangeable	V-1 or better, 130 ºC	UL796	UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Mylar Sheet 1) Located between power supply board and panel 2) located on metal chassis	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR116ECO DFR117, DFR117ECO, DFR117ECOA, DFR117ECOB, DFR117ECOC	Thickness: 0.40mm min. V-0, 80 ℃	UL 94	UL
Alt.)	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, V42B	Thickness: 0.40mm min. V-0, 80 ℃	UL 94	UL
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-1870B, KLX FRPC-1860B, KLX FRPC-1860, KLX FRPC-83B, KLX FRPC-83	Thickness: 0.40mm min. V-0, 80 ℃	UL 94	UL
Alt.)	JINGMEN GORUN TECHNOLOGY CO LTD	HF70, HE42, HE70	Thickness: 0.40mm min. V-0, 80 ℃	UL 94	UL
Alt.)	KUNSHAN DOBESTY OPTOELECTRONIC	PC9842B PC9821B, PC9832B, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1	Thickness: 0.40mm min. V-0, 80 ℃	UL 94	UL
Alt.)	SHENZHEN TEESUN TECHNOLOGY CO LTD	FR360, TS-FR370F	Thickness: 0.40mm min. V-0, 80 ℃	UL 94	UL
Adhesive for mylar sheet	XIAMEN LABAO OPTICS & ELECTRONICS CO LTD	TD-10	80 ℃ , 0.05mm Thickness min	UL 969 IEC 60950-1 Clause 4.6.5	UL Test in equipment
Alt.)	3M China Co ltd	55236, 9448A	80 ℃ , 0.05mm Thickness min	UL 969 IEC 60950-1 Clause 4.6.5	UL Test in equipment
Alt.)	SYMBIO	DS50-A, DS50L	100℃ , 0.05mm Thickness min	UL 969 IEC 60950-1 Clause 4.6.5	UL Test in equipment
Alt.)	Dexerials	G4000	80 ℃ , 0.05mm Thickness min	UL 969 IEC 60950-1 Clause 4.6.5	UL Test in equipment
The following components are located on power supply, type 715GD297					
AC Inlet (CN9901)	Inalways	0707-1, 0714, 0711-2	10A,250Vac 70℃	IEC 60320-1, UL498	VDE, UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S 7, SA-4S 9, SA-4S 12	10A,250Vac 70℃	IEC 60320-1, UL498	VDE, UL
Alt.)	Rong Feng	SS-120, SS-7B			VDE, UL
Alt.)	Shenzhen Delikang	CDJ-3, CDJ-3-1			VDE, UL
Alt.)	Shenzhen Delikang	CDJ-7, CDJ-7 1			VDE, UL
Alt.)	Solteam	ST-01			VDE, UL
Alt.)	TECX	TU-301 series			VDE, UL
Alt.)	Yueqing Hongchang	DB-14 series, DB-14, DB-14-05, DB-14-15, DB-14-11-L, DB-14-14-L, DB-14-14-R			VDE, UL
Main Fuse (F9901)	Conquer	MET, MST	T3.15AL, 250V	IEC 60127, UL248	VDE, UL
Alt.)	Littelfuse	392 series, 382 series			VDE, UL
Alt.)	COOPER	SR-5 series, SS-5 series			VDE, UL
Alt.)	Ever Island Electric Co., Ltd & Walter Electric	2000 series, 2010 series			VDE, UL
X-Capacitor (C9901) (X1or X2 type) (Optional)	KEMET	R.46	Max. 0.47uF, min. 250Vac, min. 110ºC	IEC/EN 60384-14, UL 60384-14	ENEC 03, UL
Alt.)	EUROPTRONIC (SUZHOU) CO LTD	MKP			VDE, UL
Alt.)	Liow Gu	GS-L			VDE, UL
Alt.)	Europtronic	MPX, MPX2			VDE, UL
Alt.)	Ultra Tech Xiphi	HQX			VDE, UL
Alt.)	Faratronic	MKP62			VDE, UL
Alt.)	EPCOS	B3292#			VDE, UL
Alt.)	RongGuangDa	MKP			VDE, UL
Alt.)	ZHUHAI SUNG HO ELECTRONICS	CMPP			VDE, UL
Alt.)	FARAD	PXK			VDE, UL
Alt.)	SHENZHEN JINGHAO CAPACITOR CO., LTD	CBB62B			VDE, UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	Interchangeable	Interchangeable	Max. 0.47uF, min. 250Vac, min. 110ºC	IEC/EN 60384-14, UL 60384-14	VDE, UL
Y-Capacitor (C9903, C9904) (Y1 type) (Optional)	Walsin	AH,AC	max.680pF, 250Vac, min. 85℃	IEC/EN 60384-14, UL 60384-14	VDE, UL
Alt.)	JYA-NAY	JN,JY			VDE, UL
Alt.)	TDK	CD,CS			VDE, UL
Alt.)	Murata	KX,KH			VDE, UL
Alt.)	Wansheng	CT7			VDE, UL
Alt.)	Yinan Don's Electronic	CT81			VDE, UL
Alt.)	Success	SE,SB			VDE, UL
Alt.)	Interchangeable	Interchangeable			VDE, UL
Y-Capacitor (C9902) (Y1 type) (Optional)	Walsin	AH,AC	max.1000pF, 250Vac, min. 85ºC	IEC/EN 60384-14, UL 60384-14	VDE, UL
Alt.)	JYA-NAY	JN,JY			VDE, UL
Alt.)	TDK	CD,CS			VDE, UL
Alt.)	Murata	KX,KH			VDE, UL
Alt.)	Wansheng	CT7			VDE, UL
Alt.)	Yinan Don's Electronic	CT81			VDE, UL
Alt.)	Success	SE,SB			VDE, UL
Alt.)	Interchangeable	Interchangeable			VDE, UL
Photo Coupler (U902)	Lite-on Technlogy Corporation	LTV-817	See appendix, Opto Electronic Devices, min. 100℃	IEC 60950-1 UL 1577	VDE, UL
Alt.)	Everlight	EL817, EL817M			VDE, UL
Alt.)	Sharp	PC123			VDE, UL
Alt.)	Vishay	TCET1103			VDE, UL
Alt.)	TOSHIBA	TLP781, TLP781F, TLP421F			VDE, UL
Alt.)	Renesas Electronics Corporation	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1 PS2561DL1-1			VDE, UL
Line Choke (L9902) [2])	LIANZHEN	373G01740650Z	Min.130°C	IEC 60950-1	Test in equipment.

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.) - Bobbin of L9902	CHANNELON Changchun plastic	373G0174065H 4115(f1)	Min.130°C V-0, PBT, 120℃	IEC 60950-1 UL94	Test in equipment. UL
Bridging Diode (BD9901)	Interchangeable	Interchangeable	Min. 2.0A, min. 500V	IEC 60950-1	Test in equipment.
Thermistor NR9901 (Loc. after fuse)	Interchangeable	Interchangeable	Min.2A, Min.3Ω at 25°C	IEC 60950-1	Test in equipment.
Bleeder resistors (R9901, R9902, R9903, R9908, R9909, R9910)	Interchangeable	Interchangeable	Max.1.0MΩ, Min.1/4W (R9901, R9908 in parallel; R9902, R9909 in parallel; R9903, R9910 in parallel, then three in series.Loc. after fuse F9901)	IEC 60950-1	Test in equipment.
Ripple Cap. (C902)	Interchangeable	Interchangeable	10-180μF, min. 450V, 105°C	IEC 60950-1	Test in equipment.
Transistor (Q901)	Interchangeable	Interchangeable	Min. 500V, min. 2A	IEC 60950-1	Test in equipment.
Current sense resistor(R916)	Interchangeable	Interchangeable	Min. 0.68Ω, Min.2W	IEC 60950-1	Test in equipment.
Power Transformer (T901) [3])	LIANFENG DONGJIN	380GL19P533J	Class B	IEC 60950-1	Test in equipment.
-Bobbin	SUMITOMO	PM-9820	V-0, phenolic 150℃	UL94	UL
-Margin tape	YAHUA	WF* (c)(h)	130℃	UL510	UL
-Insulation tape	YAHUA	CT	130℃	UL510	UL
-Tube	GREAT HOLDING	TFL	200℃	UL224	UL
Power Transformer (T901) [3])	PHOENIX	380GL19P533P	Class B	IEC 60950-1	Test in equipment.
-Bobbin	SUMITOMO	PM-9820	V-0, phenolic 150℃	UL94	UL
-Margin tape	YAHUA	WF	130℃	UL510	UL
-Insulation tape	YAHUA SYMBIO	CT 35660 (a)	130℃ 130℃	UL510 UL510	UL UL
-Tube	GREAT HOLDING	TFL	200℃	UL224	UL

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Power Transformer (T901) [3])	TAI CHANG	380GL19P533S	Class B	IEC 60950-1	Test in equipment.
-Bobbin	SUMITOMO	PM-9820	V-0, phenolic 150℃	UL94	UL
-Margin tape	YAHUA	WF	130℃	UL510	UL
-Insulation tape	YAHUA	CT	130℃	UL510	UL
-Tube	GREAT HOLDING	TFL	200℃	UL224	UL
Power Transformer (T901) [3])	LI TAI	380GL19P533L	Class B	IEC 60950-1	Test in equipment.
-Bobbin	SUMITOMO	PM-9820	V-0, phenolic 150℃	UL94	UL
-Margin tape	YAHUA SYMBIO	WF 35661 (c)	130℃ 130℃	UL510 UL510	UL UL
-Insulation tape	YAHUA SYMBIO	CT 35660Y (e)	130℃ 130℃	UL510 UL510	UL UL
-Tube	GREAT HOLDING	TFL	200℃	UL224	UL
The following components are located on mainboard, type 715GD288					
Limited current IC U7811 for USB (CN1009), U7812 for USB (CN1010), U7808 for USB (CN1012)	Global Mixed-mode Technology Inc	G517******* series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage Range (Vdc): 2.7-5.5, Number of Outputs: 1 Operational Current Rating per output (A): 1.0A Overcurrent Protection Current Rating per output (A): 1.1A-1.5A Maximum ambient temperature (℃): -30 to 70	IEC 62368-1:2014 (Second Edition) EN 62368-1:2014+ A11:2017.	CB issued by TUV. Cert No. JPTUV-099276, and report No.50279098 001

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	ANPEC Electronics Corp	APL3553******* series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage Range: 2.7-5.5 Vdc Output Continuous Rating: 2.0A Current Limit Rating: 2.9A	IEC 62368-1:2014 (Second Edition)	CB issued by UL (CB report No. E328191-4789118295-1-Original and CB cert No. DK-87208-UL, CB report No. E328191-4789118295-1-Amendment-1 and CB cert No. DK-87208-M1-UL)
Alt.)	DIODES INC	AP22804****** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7 - 5.5 Vdc Outputs: Output Continuous Rating: 2.5 A Output Current Limit: 3.3A Ambient: -40 to 85℃	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL. Cert No. US-34018-UL and report No. E322375-A6009-CB-1
Alt.)	DIODES INC	AP2171***** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 1.5A Output Current Limit: 3.8A Operating Temperature: -40℃~ 85℃	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by NEMKO(CB report No. 375826 and CB cert No. NO107539)
Alt.)	DIODES INC	AP22814***** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 3.0A Output Current Limit: 3.8A Operating Temperature: -40℃~ 85℃	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL(CB report No. E322375-A6009-CB-1 and CB cert No. US-34018-UL)

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	DIODES INC	AP2552** series, AP2553** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 2.1A Output Current Limit: 3.02A Operating Temperature: -40℃~ 85℃	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL(CB report No. E322375-A6007-CB-1 and CB cert No. US-34481-UL)
Alt.)	ANPEC Electronics Corp	APL3553******* series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage Range: 2.7-5.5 Vdc Output Continuous Rating: 2.0A Current Limit Rating: 2.9A	IEC 62368-1:2014	CB issued by UL (CB report No. E328191-4789118295-1-Amendment-1 and CB cert No. DK-87208-M1-UL)
Alt.)	SILERGY TECHNOLOGY (TAIWAN) INC	SY6861***** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.5-5.5Vdc Output Continuous Rating: 3.0A Output Current Limit: 5A Operating Temperature: -40℃~ 85℃	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL (CB report No. E491480-4789092266-3- Original and CB cert No. DK 87012-UL)
Alt.)	JOULWATT TECHNOLOGY CO LIMITED	JW7115** series, JW7111** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 2.0A Output Current Limit: 2.4A Operating Temperature: -40℃~ 85℃	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL (CB report No. E497605-A6001-CB-1,CB cert No. DK-83242-UL)
Alt.)	Global Mixed mode Technology Inc.	G518******* series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 3.0A Output Current Limit: 4.0A Operating Temperature: -40℃~ 85℃	IEC 62368-1:2018 (Third Edition), EN IEC 62368-1:2018 + A11:2020	CB issued by TUV RH (CB report No. CN213F86001,CB cert No. JPTUV-127262,JPTUV-127277 and JPTUV-127281)

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	Global Mixed-mode Technology Inc	G524******* series (* can be 0-9, A-Z, a-z, -, \, /, + or blank)	Input Voltage Range (Vdc): 2.7-5.5, Number of Outputs: 1 Operational Current Rating per output (A): 1.1A Overcurrent Protection Current Rating per output (A): 1.2A-1.8A Maximum ambient temperature (℃): -30 to 70	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by TUV. Cert No. JPTUV-099276, and report No. 50279098 001
Alt.	Interchangeable	Interchangeable	Input Voltage: 2.5-5.5Vdc Output Continuous Rating: 104 – 3800mA Output Current Limit: Max: 5A	IEC/EN 62368-1, IEC/EN 60950-1	CB issued by NCB
Limited current IC U7803 for USB (CN1011)	DIODES INC	AP22814***** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 3.0A Output Current Limit: 3.8A Operating Temperature: -40℃~ 85℃	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL(CB report No. E322375-A6009-CB-1 and CB cert No. US-34018-UL)
Alt.)	Global Mixed-mode Technology Inc	G517******* series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage Range (Vdc): 2.7-5.5, Number of Outputs: 1 Operational Current Rating per output (A): 1.0A Overcurrent Protection Current Rating per output (A): 1.1A-1.5A Maximum ambient temperature (℃): -30 to 70	IEC 62368-1:2014 (Second Edition) EN 62368-1:2014+ A11:2017.	CB issued by TUV. Cert No. JPTUV-099276, and report No.5027909 8 001

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	ANPEC Electronics Corp	APL3553******* series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage Range: 2.7-5.5 Vdc Output Continuous Rating: 2.0A Current Limit Rating: 2.9A	IEC 62368-1:2014 (Second Edition)	CB issued by UL (CB report No. E328191-4789118295-1-Original and CB cert No. DK-87208-UL, CB report No. E328191-4789118295-1-Amendment-1 and CB cert No. DK-87208-M1-UL)
Alt.)	DIODES INC	AP22804 ****** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7 - 5.5 Vdc Outputs: Output Continuous Rating: 2.5 A Output Current Limit: 3.3A Ambient: -40 to 85℃	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL. Cert No. US-34018-UL and report No. E322375-A6009-CB-1
Alt.)	DIODES INC	AP2171***** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 1.5A Output Current Limit: 3.8A Operating Temperature: -40℃~ 85℃	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by NEMKO(CB report No. 375826 and CB cert No. NO107539)
Alt.)	DIODES INC	AP2552** series, AP2553** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 2.1A Output Current Limit: 3.02A Operating Temperature: -40℃~ 85℃	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL(CB report No. E322375-A6007-CB-1 and CB cert No. US-34481-UL)

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	ANPEC Electronics Corp	APL3553******* series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage Range: 2.7-5.5 Vdc Output Continuous Rating: 2.0A Current Limit Rating: 2.9A	IEC 62368-1:2014	CB issued by UL (CB report No. E328191-4789118295-1-Amendment-1 and CB cert No. DK-87208-M1-UL)
Alt.)	SILERGY TECHNOLOGY (TAIWAN) INC	SY6861***** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.5-5.5Vdc Output Continuous Rating: 3.0A Output Current Limit: 5A Operating Temperature: -40℃~ 85℃	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL (CB report No. E491480-4789092266-3- Original and CB cert No. DK 87012-UL)
Alt.)	JOULWATT TECHNOLOGY CO LIMITED	JW7115** series, JW7111** series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 2.0A Output Current Limit: 2.4A Operating Temperature: -40℃~ 85℃	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by UL (CB report No. E497605-A6001-CB-1,CB cert No. DK-83242-UL)
Alt.)	Global Mixed mode Technology Inc.	G518******* series (* can be 0-9, A-Z, a-z, -, \, /,+ or blank)	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 3.0A Output Current Limit: 4.0A Operating Temperature: -40℃~ 85℃	IEC 62368-1:2018 (Third Edition), EN IEC 62368-1:2018 + A11:2020	CB issued by TUV RH (CB report No. CN213F86001,CB cert No. JPTUV-127262,JPTUV-127277 and JPTUV-127281)

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Alt.)	Global Mixed-mode Technology Inc	G524******* series (* can be 0-9, A-Z, a-z, -, \, /, + or blank)	Input Voltage Range (Vdc): 2.7-5.5, Number of Outputs: 1 Operational Current Rating per output (A): 1.1A Overcurrent Protection Current Rating per output (A): 1.2A-1.8A Maximum ambient temperature (℃): -30 to 70	IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 + A11:2017	CB issued by TUV. Cert No. JPTUV-099276, and report No. 50279098 001
Alt.	Interchangeable	Interchangeable	Input Voltage: 2.5-5.5Vdc Output Continuous Rating: 104 – 3800mA Output Current Limit: Max: 5A	IEC/EN 62368-1, IEC/EN 60950-1	CB issued by NCB
Mains cord set (Saudi Arabia) (Optional)					
Plug:	Longwell	LP-61L, LP-61LA	10 A / 250 V	SASO 2203:2018	CVC
Connector:	Longwell	LS-60	10 A / 250 V	IEC/EN 60320-1	ENEC
Cord:	Longwell	H05VV-F	3 x 0.75mm^2 min.	EN 50525-2-11	CVC
Plug:	Volex	UK13A3	10 A / 250 V	SASO 2203:2018	Intertek (ASTA)
Connector:	Volex	V1625	10 A / 250 V	IEC/EN 60320-1	Intertek (ASTA)
Cord:	Volex	H05VV-F,	3 x 0.75mm^2 min.	EN 50525-2-11	Intertek (ASTA)
Plug:	ASAP	A12-0136-AC2, A12-0137-AC2	10 A / 250 V, 13A / 250V	SASO 2203:2018	CVC
Connector:	ASAP	A12-0120-AC2	10 A / 250 V	IEC/EN 60320-1	ENEC
Cord:	ASAP	H05VV-F, H05RR-F, H05RN-F	3 x 0.75mm^2 min.	EN 50525-2-11	CVC

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object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Plug: Connector: Cord:	Interchangeable	Interchangeable	10 A / 250 V, 10 A / 250 V 3 x 0.75mm^2 min.	SASO 2203, IEC/EN 60320-1, EN 50525-2-11	Intertek
Supplementary information:					
[1]) An asterisk indicates a mark which assures the agreed level of surveillance [2]) All line choke source L9902 have same construction [3]) All transformer source T901 have same construction.					

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1.5.1	TABLE: Opto Electronic Devices	P
Manufacturer	:	Sharp / Vishay / Everlight / Everlight / Lite-on / Toshoba / Toshiba / Toshiba / Renesas / Renesas / Renesas / Renesas / Renesas
Type	:	PC123 / TCET1103 / EL817 / EL817M / LTV-817 / TLP421F / TLP781 / TLP781F / PS2561-1 / PS2561L-1 / PS2561DL1-1 / PS2561L2-1 / PS2561L1-1
Separately tested	:	Tested by FIMKO, UL
Bridging insulation	:	Reinforced
External creepage distance	:	8 / 8.4 / 7.7 / 7.7 / 8.0 / 8.0 / 8.0 / 8.0 / 7.0 / 7.0 / 7.0 / 7.0 / 7.0mm
Internal creepage distance	:	*) / *) / *) / *) / *) / *) / *) / *) / *) / *) / *) / *) / *)mm
Distance through insulation	:	0.7 / 0.6 / 0.5 / 0.5 / >0.4 / 0.4 / 0.4 / 0.4 / 0.4 / 0.4 / 0.4 / 0.4 /0.4mm
Tested under the following conditions	:	Reinforced
Input	:	
Output	:	
supplementary information		
*) There is not any internal creepage distance. Test according to clause 2.10.9 is only from IEC 60950-1 has been carried out ten times for the components at 100°C / 25℃ / 0℃ / 25℃. Hu midity treatment of 48 hours as well as electric strength tests at 3000V / 1 minute and 5000V / 1 minute were carried out to the component after thermal cycling test.		

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1.6.2	TABLE: electrical data (in normal conditions)	P

fuse #	Irated (A)	U (V / Hz)	P (W)	I (A)	Ifuse (A)	condition/status
F9901	--	90/50	36.76	0.656	0.656	--
F9901	--	90/60	36.76	0.663	0.663	--
F9901	1.5	100/50	36.25	0.600	0.600	--
F9901	1.5	100/60	36.26	0.609	0.609	--
F9901	1.5	240/50	35.35	0.334	0.334	--
F9901	1.5	240/60	35.34	0.328	0.328	--
F9901	--	264/50	35.72	0.308	0.308	--
F9901	--	264/60	35.70	0.307	0.307	--
Supplementary information:						
Load condition as shown on general product information.						

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2.1.1.5 c1)	TABLE: max. V, A, VA test			P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
+19V output	--	17.9	2.7	47.68
supplementary information:				
The above measurements are the maximum values (max. V and max. A not obtained at the same time). -.Directly loaded to power supply board.				

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2.2	TABLE: evaluation of voltage limiting components in SELV circuits	P

Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V peak	V d.c.	
T901 pin7 – 9	58.5	--	N/A
After R9906/R907/R906/R908/R9911	53.2	--	N/A
After C903/D901	--	17.9	C903/D901
After L801	--	17.9	N/A
After D802	--	54.98	N/A
LED backlight to GND	--	55.10	N/A

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
R906 (s-c)	17.9Vdc (for Vout output)
C903 (s-c)	0Vdc (for Vout output)
D901 pin 1-2 (s-c) *)	0Vdc (for Vout output)
supplementary information:	
s-c=short circuit Input voltage: 264V, 60Hz. *) Unit shutdown.	

2.4	TABLE: Limited Current Circuits	N/A

Location	Voltage (V)	Current (mA)	Freq (KHz)	Limit (mA)
supplementary information:				

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2.5	TABLE: limited power sources	P

Circuit output tested: See below

	I_{sc} (A)		VA	
	Meas.	Limit	Meas.	Limit
Circuit output tested: +19V output				
normal condition (with table 2B), Uoc=17.93V	1.08	8	19.2	100
fault condition (U902 pin 1-2 S-C) (with table 2B), Uoc=0V *)	0	8	0	100
fault condition (U902 pin 3-4 S-C) (with table 2B), Uoc=0V *)	0	8	0	100
fault condition (U902 pin 3 O-C) (with table 2B), Uoc=0V *)	0	8	0	100
fault condition (R916 S-C) (with table 2B), Uoc=17.93V	1.2	8	21.3	100
Audio out port (CN603) all pins to sec GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
HDMI port (CN103) pin 15, 16 to sec GND, Normal condition (with table 2B), Uoc=3.3V *)	0	8	0	100
HDMI port (CN103) pin 18 to sec GND, Normal condition (with table 2B), Uoc=5.0V *)	0	8	0	100
HDMI port (CN103) other pins to sec GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
DP port (CN106) pin 15, 17, 18 to GND, Normal condition (with table 2B), Uoc=3.3V *)	0	8	0	100
DP port (CN106) pin 20 to GND, Normal condition (with table 2B), Uoc=3.26V	1.0	8	2.8	100
DP port (CN106) pin 20 to GND, Fault condition (U151 pin1-pin3 S-C) (with table 2B), Uoc=3.26V	1.7	8	3.2	100
DP port (CN106) other pins to GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
VGA port (CN112) pin 9, 12, 15 to sec GND, Normal condition (with table 2B), Uoc=5.0V *)	0	8	0	100
VGA port (CN112) pin 5 to sec GND, Normal condition (with table 2B), Uoc=2.7V *)	0	8	0	100
VGA port (CN112) other pins to sec GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
USB 3.0 port (CN1009) pin 1 to GND, Normal condition (with table 2B), Uoc=5.07V	1.2	8	5.3	100
USB 3.0 port (CN1009) other pins to GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100

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	I_{sc} (A)		VA	
	Meas.	Limit	Meas.	Limit
USB 3.0 port (CN1010) pin 1 to GND, Normal condition (with table 2B), Uoc=5.07V	1.2	8	5.3	100
USB 3.0 port (CN1010) other pins to GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
USB 3.0 port (CN1012) pin 1 to GND, Normal condition (with table 2B), Uoc=5.07V	1.2	8	5.3	100
USB 3.0 port (CN1012) other pins to GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
USB 3.0 port (CN1011) pin 1 to GND, Normal condition (with table 2B), Uoc=5.07V	3.8	8	12.2	100
USB 3.0 port (CN1011) other pins to GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
USB 3.0 port (CN1008) all pins to GND, Normal condition (with table 2B), Uoc=0V *)	0	8	0	100
supplementary information:				
S-C=Short circuit, O-C=Open circuit *) Cannot load				

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2.10.2	Table: working voltage measurement	P

Location	RMS voltage (V)	Peak voltage (V)	Comments
T901: Pin1 to pin 7	165	347	--
T901: Pin1 to pin 9	178	344	--
T901: Pin2 to pin 7	164	344	--
T901: Pin2 to pin 9	167	394	--
T901: Pin3 to pin 7	246	416	--
T901: Pin3 to pin 9	246	362	--
T901: Pin5 to pin 7	279	494	--
T901: Pin5 to pin 9	**289**	**519**	--
U902: Pin1 to pin 3	184	358	--
U902: Pin1 to pin 4	186	362	--
U902: Pin2 to pin 3	184	359	--
U902: Pin2 to pin 4	188	361	--
C9902	177	342	--
C9903	182	355	--
C9904	188	350	--
Supplementary information:			
Supply voltage: 240Vac, 60Hz. The highest measured working voltages in transformer are indicated with bold characters.			

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2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements	P

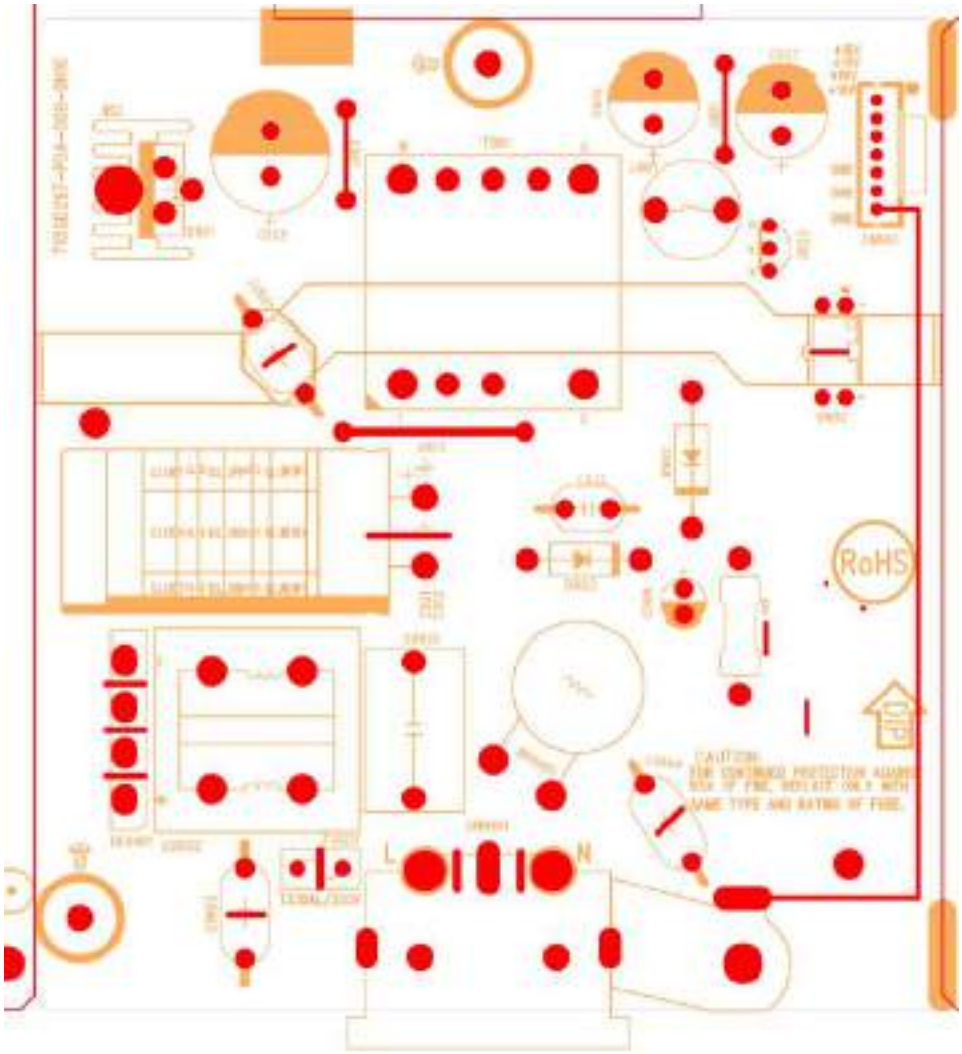
clearance cl and creepage distance dcr at/of/between:	Upeak (V)	U r.m.s. (V)	Required cl (mm) *)*	cl (mm)	Required cr (mm)	cr (mm)
Func.: L to N (before fuse) ***1) 2)***	340	240	2.3	6.0	2.5	6.0
Func.: F9901 pad 1 to F9901 pad 2 ***1) 2)***	340	240	2.3	2.6	2.5	2.6
Basic: Line to GND ***1) 2)***	340	240	3.0	3.0	3.0 *****)***	3.0
Basic: Neutral to GND ***1)2)***	340	240	3.0	3.0	3.0 *****)***	3.0
Basic: C9903 pri. to GND ***1)2)***	355	182	3.0	4.4	3.0 *****)***	4.4
Basic: C9904 pri. to GND ***1)2)***	350	188	3.0	3.0	3.0 *****)***	3.0
Basic: C9902 pri. to GND ***1)2)***	342	177	3.0	7.4	3.0 *****)***	7.4
Basic: F9901 to metal chassis of AC inlet ***3)***	340	240	3.0	3.0	3.0 *****)***	3.0
Basic: BD9901 to metal chassis ***2)***	340	240	3.0	4.2	3.0 *****)***	4.2
Basic: BD9901 to metal chassis ***3)***	340	240	3.0	3.2	3.0 *****)***	3.2
Basic: C902 to metal chassis ***3)***	340	240	3.0	5.0	3.0 *****)***	5.0
Basic: T901 core to metal chassis ***3)***	519	289	3.3	5.8	3.3 *****)***	5.8
Reinf.: primary solder side to panel ***2)***	519	289	6.6	8.0	6.6 *****)***	8.0
Reinf.: U902 pri to sec ***2)***	362	188	6.0	7.9	6.0 *****)***	7.9
Reinforced.: T901 pri to sec ***2)***	519	289	6.6	8.0	6.6 *****)***	8.0

supplementary information:

See appended table C.2 for internal distances of transformer.
1) There is a slot > 1mm under the PCB. ***2)*** Measured on PCB side. ***3)*** Measured on component side
****)*** This equipment is intended to be operated under altitude up to 5000m, so the clearance is multiplied by the altitude correction factor 1.48, specified in table A.2 of IEC 60664-1
*****)*** The requirement for the creepage distance is less than the requirement for the clearance, therefore the requirement for the clearance apply also for the creepage distance requirement.
-. The following component is tested with 10N force: C902, BD9901, mylar sheet and secondary wire.
-. C902 was fixed by glue.
-. There was one mylar sheet located between panel and power supply board.

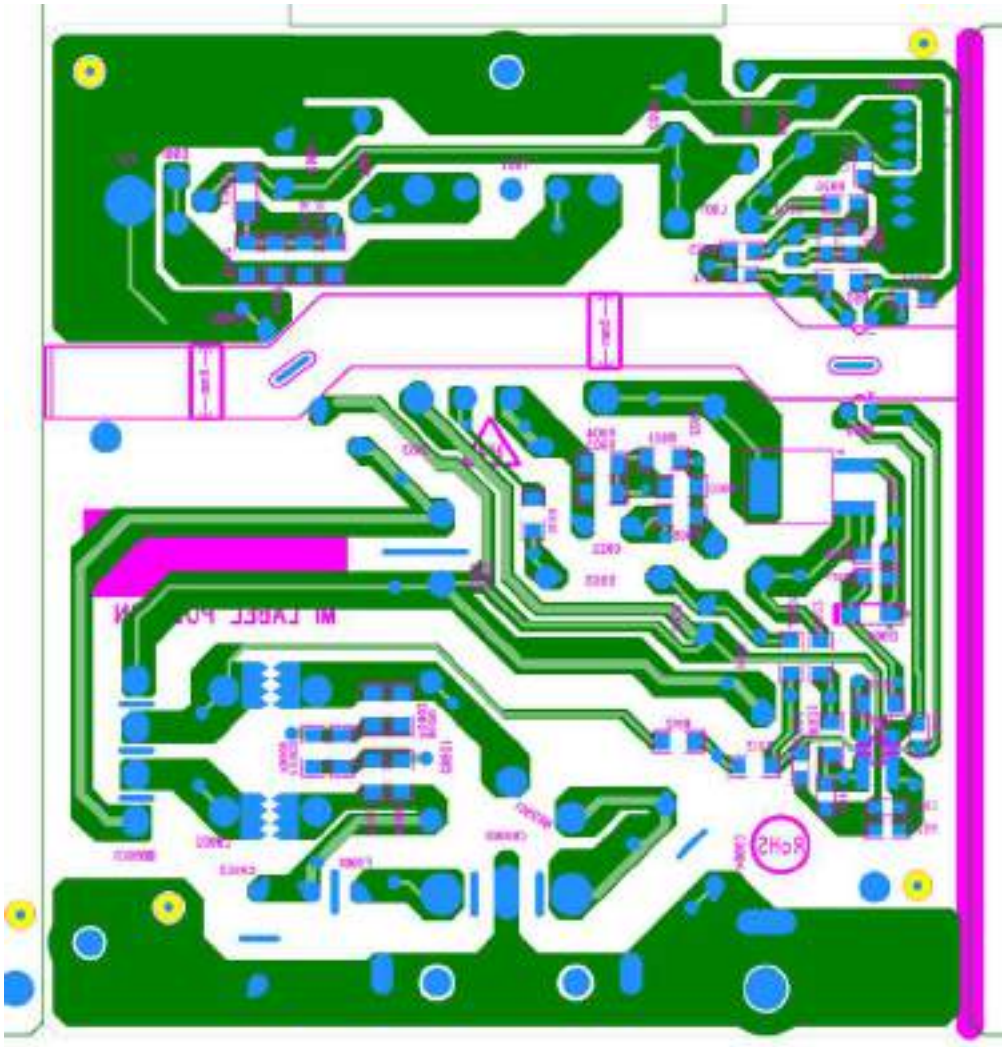
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Copy of PCB, layout of tracing (not to scale): for power supply board 715GD297



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Copy of PCB, layout of tracing (not to scale): for power supply board 715GD297



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2.10.5	TABLE: distance through insulation measurements	P

distance through insulation di at/of:	Up (V)	test voltage (V)	required di (mm)	di (mm)
Reinforced: Mylar sheet located between power supply board and panel, located on metal chassis	519	3000Vac	0.4	0.4
Reinforced: Insulation tape used for transformer (T901) Reinforced: 2 layers. (1 layer tested)	519	3000Vac	2 layers	2 layers
supplementary information:				

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4.3.8	TABLE: Batteries	N/A
Battery category : Manufacturer.....: Type / model.....: Voltage.....: Capacity.....: Tested and Certified by (incl. Ref. No.) .....: Circuit protection diagram:		
Max. Reverse charging current (during fault conditions)		
MARKINGS AND INSTRUCTIONS (1.7.13)		
Location of replaceable battery		
Close to the battery		
In the servicing instructions		
In the operating instructions		

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4.3.8	TABLE: Batteries								N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available									N/A
Is it possible to install the battery in a reverse polarity position?									N/A
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. Current	Manuf. Specs.		Meas. Current	Manuf. Specs.	Meas. Current	Manuf. Specs.	Meas. Current	Manuf. Specs.
Max. current during normal condition									
Test results:									Verdict
- Chemical leaks									N/A
- Explosion of the battery									N/A
- Emission of flame or expulsion of molten metal									N/A
- Electric strength tests of equipment after completion of tests									N/A
Supplementary information:									

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4.5	TABLE: maximum temperatures			P
	test voltage (V):	90V/60Hz	264V/50Hz	—

maximum temperature T of part/at:	T (°C)		allowed T_{max} (°C)
1. AC inlet near L	56.7	53.9	70
2. C9904 body	57.7	55.9	85
3. C9903 body	60.2	55.4	85
4. PCB near NR9901	83.7	78.5	130
5. PCB near BD9901	81.1	64.6	130
6. C9901 body	62.0	56.3	110
7. L9902 coil	91.1	65.9	120 *)
8. L9902 core	89.7	65.8	120 *)
9. C902 body	77.5	67.0	105
10. C9902 body	75.2	71.8	85
11. T901 coil	87.4	95.6	110 *)
12. T901 core	84.4	87.4	110 *)
13. U902 body	65.9	63.9	100
14. PCB near D901	86.1	87.2	130
15. Mylar sheet near T901	70.9	72.0	80
16. Metal enclosure inside near T901	57.5	57.4	70
17. Plastic enclosure inside near T901	51.5	51.9	--
18. Plastic enclosure outside near T901	46.8	47.1	95
19. Panel	47.7	48.5	80
20. Control keys	44.6	45.1	85
21. Accessible Metal enclosure	48.4	48.3	70
22. Base	40.9	41.4	85
23. Ambient	40.0	40.0	--

supplementary information:

Tmra = 40℃. Temp. Limits are adjusted according to Cl.1.4.12.3.
If no limit is stated, temperature is for reference only.
*) Temperature limits of winding less 10℃ for thermocouple measurement method.
-. Horizontal position

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4.5	TABLE: maximum temperatures			P
	test voltage (V):	90V/60Hz	264V/50Hz	—

maximum temperature T of part/at:	T (°C)		allowed T_{max} (°C)
1. AC inlet near L	62.4	56.8	70
2. C9904 body	61.9	58.6	85
3. C9903 body	69.4	60.8	85
4. PCB near NR9901	96.0	78.4	130
5. PCB near BD9901	91.1	70.6	130
6. C9901 body	67.1	61.7	110
7. L9902 coil	98.6	71.1	120 *)
8. L9902 core	98.3	70.4	120 *)
9. C902 body	82.2	71.9	105
10. C9902 body	82.1	78.3	85
11. T901 coil	88.3	96.6	110 *)
12. T901 core	86.0	88.8	110 *)
13. U902 body	62.6	61.0	100
14. PCB near D901	93.4	94.5	130
15. Mylar sheet near T901	72.2	72.8	80
16. Metal enclosure inside near T901	60.6	59.1	70
17. Plastic enclosure inside near T901	53.9	52.8	--
18. Plastic enclosure outside near T901	51.0	50.1	95
19. Panel	48.4	47.9	80
20. Control keys	46.3	45.0	85
21. Accessible Metal enclosure	50.9	50.7	70
22. Base	42.3	41.4	85
23. Ambient	40.0	40.0	--

supplementary information:

Tmra = 40℃. Temp. Limits are adjusted according to Cl.1.4.12.3.
If no limit is stated, temperature is for reference only.
*) Temperature limits of winding less 10℃ for thermocouple measurement method.
-. Vertical position rotating anti-clockwise 90 degree

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4.5	TABLE: maximum temperatures			P
	test voltage (V):	90V/60Hz	264V/50Hz	—

maximum temperature T of part/at:	T (°C)		allowed T_{max} (°C)
1. AC inlet near L	62.2	56.0	70
2. C9904 body	67.8	62.3	85
3. C9903 body	64.8	57.1	85
4. PCB near NR9901	90.5	78.4	130
5. PCB near BD9901	76.7	63.4	130
6. C9901 body	68.4	61.3	110
7. L9902 coil	92.9	66.2	120 *)
8. L9902 core	91.3	66.1	120 *)
9. C902 body	73.2	65.3	105
10. C9902 body	70.8	69.3	85
11. T901 coil	81.4	91.2	110 *)
12. T901 core	81.0	86.1	110 *)
13. U902 body	78.1	75.1	100
14. PCB near D901	79.1	80.6	130
15. Mylar sheet near T901	67.9	69.9	80
16. Metal enclosure inside near T901	53.9	53.8	70
17. Plastic enclosure inside near T901	49.4	49.4	--
18. Plastic enclosure outside near T901	45.7	45.7	95
19. Panel	47.9	47.8	80
20. Control keys	45.5	45.5	85
21. Accessible Metal enclosure	52.8	52.1	70
22. Base	45.7	45.8	85
23. Ambient	40.0	40.0	--

supplementary information:

Tmra = 40℃. Temp. Limits are adjusted according to Cl.1.4.12.3.
If no limit is stated, temperature is for reference only.
*) Temperature limits of winding less 10°C for thermocouple measurement method.
-. Vertical position rotating clockwise 90 degree

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4.5.5	TABLE: Ball pressure test of thermoplastic parts		P
	Allowed impression diameter (mm) ..... :	≤2mm	—

Part	Test temperature (°C)	Impression diameter (mm)
Plastic Enclosure, LOTTE: SD-0150(+)	75	1.3
Plastic Enclosure, LOTTE: VH-0810(+)	75	1.3
Plastic Enclosure, LOTTE: VE-0812(+)	75	1.3
Plastic Enclosure, LOTTE: NH-1000T(+)(&)	75	1.3
Plastic Enclosure, LOTTE: GC-0700(+++) (RR28)	75	1.3
Plastic Enclosure, LOTTE: GC-0700A(RR)	75	1.3
Plastic Enclosure, LOTTE: GC-0750(+)(RR70)	75	1.3
Plastic Enclosure, LOTTE: GC-1017(+)(RR30)	75	1.3
Plastic Enclosure, LOTTE: VE-1890(+)	75	1.3
Plastic Enclosure, LOTTE: BF-0675(+)	75	1.3
Plastic Enclosure, LOTTE: BF-0670(+)	75	1.3
Plastic Enclosure, LOTTE: NH-1017(p)	75	1.3
Plastic Enclosure, LOTTE: NH-1017T	75	1.3
Plastic Enclosure, LOTTE: NH-1017SG(+)	75	1.3
Plastic Enclosure, LOTTE: BF-0677(+)	75	1.3
Plastic Enclosure, LOTTE: HS-7000(+)	75	1.3
Plastic Enclosure, LOTTE: HG-0760(+)	75	1.3
Plastic Enclosure, LOTTE: NE-1030(+)	75	1.3
Plastic Enclosure, LOTTE: HR-1360(+)	75	1.3
Plastic Enclosure, LOTTE: LX-0951(+)	75	1.3
Plastic Enclosure, LOTTE: LX-0957(+)	75	1.3
Plastic Enclosure, LOTTE: TH-1100(+)	75	1.3
Plastic Enclosure, LOTTE: LS-1159(r)LS-1159SF	75	1.3
Plastic Enclosure, LOTTE: LS-1159F	75	1.3
Plastic Enclosure, LOTTE: NH-1036	75	1.3
Plastic Enclosure, LOTTE: SD-0150T	75	1.3
Plastic Enclosure, LOTTE: ABF-0200E	75	1.3
Plastic Enclosure, GRAND PACIFIC PETROCHEMIC AL CORP: D-150	75	1.2
Plastic Enclosure, GRAND PACIFIC PETROCHEMIC AL CORP: D-1000	75	1.2
Plastic Enclosure, GRAND PACIFIC PETROCHEMIC AL CORP: D-1000A	75	1.2
Plastic Enclosure, CHI MEI CORPORATION: PA-757(+)	75	1.4
Plastic Enclosure, CHI MEI CORPORATION: PH-88	75	1.4
Plastic Enclosure, CHI MEI CORPORATION: PA-756S	75	1.4

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Part	Test temperature (°C)	Impression diameter (mm)
Plastic Enclosure, Mocom Compounds GmbH & Co KG: GP-35	75	1.3
Plastic Enclosure, Mocom Compounds GmbH & Co KG: GP-22	75	1.3
Plastic Enclosure, Mocom Compounds GmbH & Co KG: 495F	75	1.3
Plastic Enclosure, COVESTRO DEUTSCHLAND AG [PC RESINS]: FR3000 series	75	1.2
Plastic Enclosure, COVESTRO DEUTSCHLAND AG [PC RESINS]: FR3005 series	75	1.2
Plastic Enclosure, QINGDAO HAIER NEW MATERIAL R & D CO LTD: HRABS-RS	75	1.2
Plastic Enclosure, QINGDAO HAIER NEW MATERIAL R & D CO LTD: HRABS-HG	75	1.2
Plastic Enclosure, QINGDAO HAIER NEW MATERIAL R & D CO LTD: CR-3002	75	1.2
Plastic Enclosure, DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD: HL-ABS-PCR85	75	1.3
Plastic Enclosure, DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD: HL-ABS-PCR65	75	1.3
Plastic Enclosure, DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD: HL-ABS-PCR35	75	1.3
Plastic Enclosure, ORINKO (HEFEI) ADVANCED PLASTIC CO LTD: ABS-3070H,	75	1.4
Plastic Enclosure, ORINKO (HEFEI) ADVANCED PLASTIC CO LTD: HIPS-2000,	75	1.4
Plastic Enclosure, ORINKO (HEFEI) ADVANCED PLASTIC CO LTD: HIPS-2230(+)	75	1.4
Plastic Enclosure, ORINKO (HEFEI) ADVANCED PLASTIC CO LTD: ABS-340*(*=0~10)	75	1.4
Plastic Enclosure, WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD: GA(M)(b)(c)	75	1.3
Plastic Enclosure, WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD: GA35	75	1.3
Plastic Enclosure, WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD: NC30	75	1.3
Plastic Enclosure, WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD: GA65	75	1.3
Plastic Enclosure, WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD: GA85	75	1.3
Plastic Enclosure, UNIC TECHNOLOGY CORP: UR- 3006+(RXX)	75	1.4
Plastic Enclosure, UNIC TECHNOLOGY CORP: UR-200+ (+: A to Z)	75	1.4
Plastic Enclosure, GUO HENG(DONGGUAN) PLASTIC TECHNOLOGY CO LTD: YOUHO(####)(Y)	75	1.2

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Part	Test temperature (°C)	Impression diameter (mm)
Plastic Enclosure, GUO HENG(DONGGUAN) PLASTIC TECHNOLOGY CO LTD: YOUHO-1303B	75	1.2
Plastic Enclosure, GUO HENG(DONGGUAN) PLASTIC TECHNOLOGY CO LTD: YOUHO1312B	75	1.2
Plastic Enclosure, GUO HENG(DONGGUAN) PLASTIC TECHNOLOGY CO LTD: YOUHO(1304)(B)	75	1.2
Plastic Enclosure, GUO HENG(DONGGUAN) PLASTIC TECHNOLOGY CO LTD: YOUHO(1333)(B)	75	1.2
Plastic Enclosure, GUO HENG(DONGGUAN) PLASTIC TECHNOLOGY CO LTD: YOUHO(1303)(OP)	75	1.2
Plastic Enclosure, LG CHEM LTD: HF350(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: HF380(m)	75	1.3
Plastic Enclosure, LG CHEM LTD: HF380NS	75	1.3
Plastic Enclosure, LG CHEM LTD: HF380(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: HF-380(m)	75	1.3
Plastic Enclosure, LG CHEM LTD: HF-380	75	1.3
Plastic Enclosure, LG CHEM LTD: HF-380NS	75	1.3
Plastic Enclosure, LG CHEM LTD: HF380X	75	1.3
Plastic Enclosure, LG CHEM LTD: AF312T1	75	1.3
Plastic Enclosure, LG CHEM LTD: AF342T1	75	1.3
Plastic Enclosure, LG CHEM LTD: LUPOY GN- 5001TF(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: GN-5001RFD	75	1.3
Plastic Enclosure, LG CHEM LTD: LUPOY GN-5008HF(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: LUPOY GP-5008BF(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: SE750(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: XG494(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: XG569(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: GP-1000	75	1.3
Plastic Enclosure, LG CHEM LTD: GP-1000F(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: GP-1000(m)(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: LUMILOY GP-1000(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: SE750(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: LUPOY GN- 5001RF(T)	75	1.3
Plastic Enclosure, LG CHEM LTD: SE885(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: HF388(#)	75	1.3
Plastic Enclosure, LG CHEM LTD: GN-2101F(m)	75	1.3
Plastic Enclosure, KINGFA SCI & TECH CO LTD: 4418	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: 5197	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: FRABS-518	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HIPS-5197	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HF-606	75	1.1

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Part	Test temperature (°C)	Impression diameter (mm)
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HF-626	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: FRABS-518	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-011C	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: JH960 6(M)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: FRHIPS-960	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: RS-900	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: RS-300	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: RS-400	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-011	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-011(L65)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-011(L85)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-011(HG6)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: CK-100	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: CK-900	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: CK-55111	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: JH960 6(M)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: FRHIPS-960	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HIPS-4418	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HIPS-3399	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HIPS-CM(ee)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HIPS-HG(ee)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HIPS-510 (o)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HIPS-550	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: CK-61(M) (##)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: RS-(hh)0	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: HP-126	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: ABS-660	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: ABS-122	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-322	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-332	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-220	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: H12	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: G360	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: CK-55(M) (##)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: CK-58(M) (##)	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-011C	75	1.1
Plastic Enclosure, KINGFA SCI & TECH CO LTD: GAR-011(ww)	75	1.1
Plastic Enclosure, HUIZHOU WOTE: 2100	75	1.5

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Part	Test temperature (°C)	Impression diameter (mm)
Plastic Enclosure, TEIJIN LIMITED RESIN AND PLASTIC: TN-7500(c)	75	1.3
Plastic Enclosure, TEIJIN LIMITED RESIN AND PLASTIC: TN-7500F(#)	75	1.3
Plastic Enclosure, TEIJIN LIMITED RESIN AND PLASTIC: MN-3600V(#)	75	1.3
Plastic Enclosure, TEIJIN LIMITED RESIN AND PLASTIC: MN-3600H(#)	75	1.3
Plastic Enclosure, INEOS STYROLUTION GROUP GMBH: 495F GR2	75	1.1
Plastic Enclosure, INEOS STYROLUTION GROUP GMBH: 495F KG2	75	1.1
Plastic Enclosure, INEOS STYROLUTION GROUP GMBH: 495F GR21,	75	1.1
Plastic Enclosure, INEOS STYROLUTION GROUP GMBH: 495F KG21	75	1.1
Plastic Enclosure, INEOS STYROLUTION GROUP GMBH: PC2065	75	1.1
Plastic Enclosure, Trinseo Europe GmbH: STYRON A- TECH 1200	75	1.3
Plastic Enclosure, INEOS STYROLUTION POLYMERS (FOSHAN) COMPANY LIMITED: 3441	75	1.2
Plastic Enclosure, INEOS STYROLUTION POLYMERS (FOSHAN) COMPANY LIMITED: 260-XX	75	1.2
Plastic Enclosure, DOOSAN CORPORATION ELECTRO-MATERIALS BG: DS-1107A	75	1.2
Plastic Enclosure, DOOSAN CORPORATION ELECTRO-MATERIALS BG: DS-1202G	75	1.2
Plastic Enclosure, DOOSAN CORPORATION ELECTRO-MATERIALS BG: DS-7106	75	1.2
Plastic Enclosure, SABIC JAPAN L L C: C6600(GG)(X)(VS)	75	1.3
Plastic Enclosure, SABIC JAPAN L L C: C6600E (VS)(X)	75	1.3
Plastic Enclosure, PONTEX POLYBLEND CO LTD: AFE5000N	75	1.2
Plastic Enclosure, PONTEX POLYBLEND CO LTD: AFE5100N	75	1.2
Plastic Enclosure, PONTEX POLYBLEND CO LTD: 9004BK	75	1.2
Plastic Enclosure, CHI LIN TECHNOLOGY CO LTD: GA-1(aaa)	75	1.1
Plastic Enclosure, CHI LIN TECHNOLOGY CO LTD: GA-1535	75	1.1
Plastic Enclosure, CHI LIN TECHNOLOGY CO LTD: GA-1565	75	1.1
Plastic Enclosure, SAMYANG CORPORATION: 210NHF(@)	75	1.3
Plastic Enclosure, SAMYANG CORPORATION: 210NHF	75	1.3
Plastic Enclosure, COVESTRO DEUTSCHLAND AG: GF99011 MF	75	1.2
Plastic Enclosure, CHI MEI CORPORATION: PC-540(Y)(a)	75	1.2
Plastic Enclosure, QINGDAO GUOEN TECHNOLOGY CO LTD: ABS21(xx)G-A	75	1.2
Plastic Enclosure, QINGDAO GUOEN TECHNOLOGY CO LTD: ABS2030A	75	1.2
Plastic Enclosure, QINGDAO GUOEN TECHNOLOGY CO LTD: ABS20(xx)B	75	1.2
Plastic Enclosure, SHENZHEN FUHENG NEW MATERIAL CO LTD: HIPS-568	75	1.2

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Part	Test temperature (°C)	Impression diameter (mm)
Plastic Enclosure, SHENZHEN FUHENG NEW MATERIAL CO LTD: HIPS-494	75	1.2
Plastic Enclosure, UNIC TECHNOLOGY CORP: UR-7085+(R90)	75	1.2
Bobbin of L9902, CHANG CHUN PLASTICS CO LTD: 4115(f1)	75	1.1
Supplementary information:		

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4.6.1, 4.6.2	TABLE: Enclosure openings	P

Location	Size(mm)	Comments
Metal enclosure		
Top side (Right side when clockwise 90 degree) (Left side when anti-clockwise 90 degree)	-numerous Ø1.6mm circular holes -two 6.8mm x 1.0mm rectangle hole	 Located on power supply board side, blocked by mylar sheet V-0
Rear side (Bottom at tilt backward position)	-one Ø1.6mm circular holes -eight Ø1.6mm circular holes -one 2.5mm x 21.0mm rectangle hole -one 2.5mm x 21.0mm rectangle hole -one 2.5mm x 22.0mm rectangle hole -one 2.5mm x 22.0mm rectangle hole -one 11.0mm x 2.2mm rectangle hole	Located on secondary side of power supply board supplied by LPS, after evaluated about 5deg projection, no hazard. Located on mainboard side, supplied by LPS Located on secondary side of power supply board side supplied by LPS, blocked by plastic enclosure, after evaluated about 5deg projection, no hazard. Located on mainboard side, supplied by LPS, blocked by plastic enclosure and power supply board was blocked by mylar sheet with V-0, after evaluated about 5deg projection, no hazard. Located on power supply board side, blocked by mylar sheet V-0 Located on mainboard side, supplied by LPS, blocked by plastic enclosure and power supply board was blocked by mylar sheet with V-0, after evaluated about 5deg projection, no hazard. Located on mainboard side, supplied by LPS, blocked by plastic enclosure and power supply board was blocked by mylar sheet with V-0, after evaluated about 5deg projection, no hazard.
Left side (Top side when clockwise 90 degree) (Bottom side when anti-clockwise 90 degree)	-one 64.0mm x 12.8mm rectangle hole	Located on mainboard side, supplied by LPS, blocked by plastic enclosure and power supply board was blocked by mylar sheet with V-0, after evaluated about 5deg projection, no hazard.

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Location	Size(mm)	Comments
	-two 10.4mm x 3.0mm rectangle hole	Located on mainboard side, supplied by LPS, blocked by plastic enclosure and power supply board was blocked by mylar sheet with V-0, after evaluated about 5deg projection, no hazard.
Right side (Top side under anti-clockwise) (Bottom side under clockwise) (Side when Panel upward position.)	No openings	
Bottom side (Right side under anti-clockwise) (Left side under clockwise)	-four 9.7mm x 1.0mm rectangle hole -two 6.8mm x 1.0mm rectangle hole	Located on mainboard side, supplied by LPS, blocked by plastic enclosure and power supply board was blocked by mylar sheet with V-0, after evaluated about 5deg projection, no hazard. Located on power supply board side, blocked by mylar sheet V-0
Plastic enclosure		
Top side (Right side when clockwise 90 degree) (Left side when anti-clockwise 90 degree)	-numerous 2.0mm x 25.4mm rectangle hole	All openings are vertical opening as below picture. After evaluated about 5 deg. Projection, no hazards 
Rear side (Bottom at 90°tilt b ackward position)	No openings	
Left side (Top side when clockwise 90 degree) (Bottom side when anti-clockwise 90 degree)	-numerous 1.8mm x 16.2mm rectangle hole	All openings are vertical opening as below picture. After evaluated about 5 deg. Projection, no hazards 
Right side (Bottom side when clockwise 90 degree) (Top side when anti-clockwise 90 degree)	-numerous 1.8mm x 16.2mm rectangle hole	All openings are vertical opening as below picture. After evaluated about 5 deg. Projection, no hazards 
Bottom side (Left side when clockwise 90 degree) (Right side when	-numerous 1.8mm x 25.2mm rectangle hole -one 21.2mm x 33.2mm rectangle hole -one 18.2 mm x 147.0mm rectangle	Blocked by metal chassis Blocked by metal chassis Blocked by metal chassis

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Location	Size(mm)	Comments
anti-clockwise 90 degree)	hole -two 2.7mm x 6.7mm rectangle hole	Blocked by metal chassis
Supplementary information:		

4.7	TABLE: resistance to fire			P
part	manufacturer of material	type of material	thickness (mm)	flammability class
Metal chassis (fire enclosure)	Interchangeable	Interchangeable	0.5+0.5	--
supplementary information:				

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5.1	TABLE: touch current measurement	P

Measured between:	Measured (mA)	Limit (mA)	Comments/conditions
Line – metal Chassis (GND)	0.182	3.5	System on
Neutral – metal Chassis (GND)	0.182	3.5	System on
Line –Signal connector	0.02	0.25	System on 1)
Neutral –Signal connector	0.02	0.25	System on 1)
Line – Plastic Enclosure with metal foil	0.005	0.25	System on
Neutral – Plastic Enclosure with metal foil	0.005	0.25	System on
supplementary information:			
All Y-cap are rated max. according to List of critical components. 1) e-switch closed. Vin= 264V/60Hz			

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5.2	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Functional: Line – Neutral(fuse opened)		AC	1500	No
Basic: Primary – PE		AC	1772	No
Basic: T901 Primary – core		AC	1772	No
Supplementary: T901 Secondary – core		AC	1772	No
Reinforced: T901 Primary – Secondary		AC	3000	No
Reinforced: Primary – Secondary		DC	4242	No
Reinforced: L/N – Plastic enclosure with metal foil		AC	3000	No
Supplementary information:				
-.No flash over or insulation breakdown after test. -.All sources of transformers (see list of critical components) were tested separately with 3000Vac / 60s from primary to secondary. -.The tests mentioned above were performed after humidity test.				

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5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C) ..... :	25°C, if not specify.	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Ventilation openings	Blocked	264	3.0hrs	F9901	0.308	Unit operated normally, Max. measured temp.: T901 coil =82.3℃, T901 core=73.5℃, Accessible plastic enclosure=33.7°C, Accessible metal chassis=35.4°C, Panel= 35.9℃ , Control key=29.5°C, Base=29.9°C, ambient=24.4℃, no damaged, no hazards. Test under horizontal position
T901 pin7 to 9 after D901 pin 2	o-l	264	4.0hrs	F9901	0.403	Unit shut down when load increase to 1.0A, No hazard.: T901 coil =100.7℃, T901 core=89.8℃, Accessible plastic enclosure=36.9℃, Accessible metal chassis=37.4°C, Panel=33.7℃, Control key=29.3°C, Base=29.7°C, ambient= 26.4℃, no damaged, no hazards. Test under horizontal position
USB 3.0 port (CN1011)	o-l	264	3.4hrs	F9901	0.356	Unit operated normally except USB output shut down when load increase to 3.8A, No hazard. T901coil =86.7℃, T901core=78.5℃, Accessible plastic enclosure=35.9°C, Accessible metal chassis=36.6°C, Panel= 36.8°C, Control key=29.4℃, Base=29.8℃, Ambient= 25.7℃, no damaged, no hazards.
BD9901 (AC - +)	s-c	264	< 1 sec	F9901	***1)***	Fuse F9901 open instantly, no hazard.
C902	s-c	264	< 1 sec	F9901	***1)***	Fuse F9901 open instantly, no hazard.

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Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
R916	s-c	264	5 min.	F9901	0.308	Unit operated normally, no damaged, no hazards.
U901 pin 2 to pin5	s-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
U901 pin 1 to pin5	s-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
Q901 (D - G)	s-c	264	5 min.	F9901	0.02	R916, Q901, U901 damaged. Test by three times, the same results. No hazards.
Q901 (G - S)	s-c	264	5 min	F9901	0.02	Unit shut down, no hazards.
Q901 (D - S)	s-c	264	5 min.	F9901	0.02	R916, Q901, U901 damaged. Test by three times, the same results. No hazards.
T901 pin1 to pin2	s-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
T901 pin3 to pin5	s-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
T901 pin7 to pin9	s-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
D901 pin 1 to pin 2	s-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
C906	s-c	264	5 min.	F9901	0.166	Unit operated normally, no damaged, no hazards.
U902 pin1 to pin 2	s-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
U902 pin3 to pin 4	s-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
U902 pin3	o-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
U902 pin1	o-c	264	5 min.	F9901	0.02	Unit shutdown, no damaged, no hazard.
19V output	s-c	264	5 min	F9901	0.02	Unit shutdown, no damaged, no hazard.
USB 3.0 port (CN1011)	s-c	264	5 min	F9901	0.291	Normal operation, except USB 3.0, no damaged, no hazard.
Supplementary information:						
s-c = short circuit, o-l = overload, o-c=open circuit ***1)*** Fuse current is more than fuse rating times 2.1. The tests repeated with all sources of fuse and same result came out.						

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C.2	TABLE: transformer	P

Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
T901	Reinforced: Primary Windings –Secondary windings	519	289	3000V ac	6.6 ***1)***	6.6 ***2)***	*)
T901	Reinforced: Primary Windings – core – Secondary windings	519	289	3000V ac	6.6	6.6	*)

Loc.	Tested insulation	Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T901	Primary Windings -Secondary Windings	3000V ac	8.0	8.0	3 layers
T901	Primary Windings – core - Secondary Windings	3000V ac	8.4	8.4	3 layers

supplementary information:

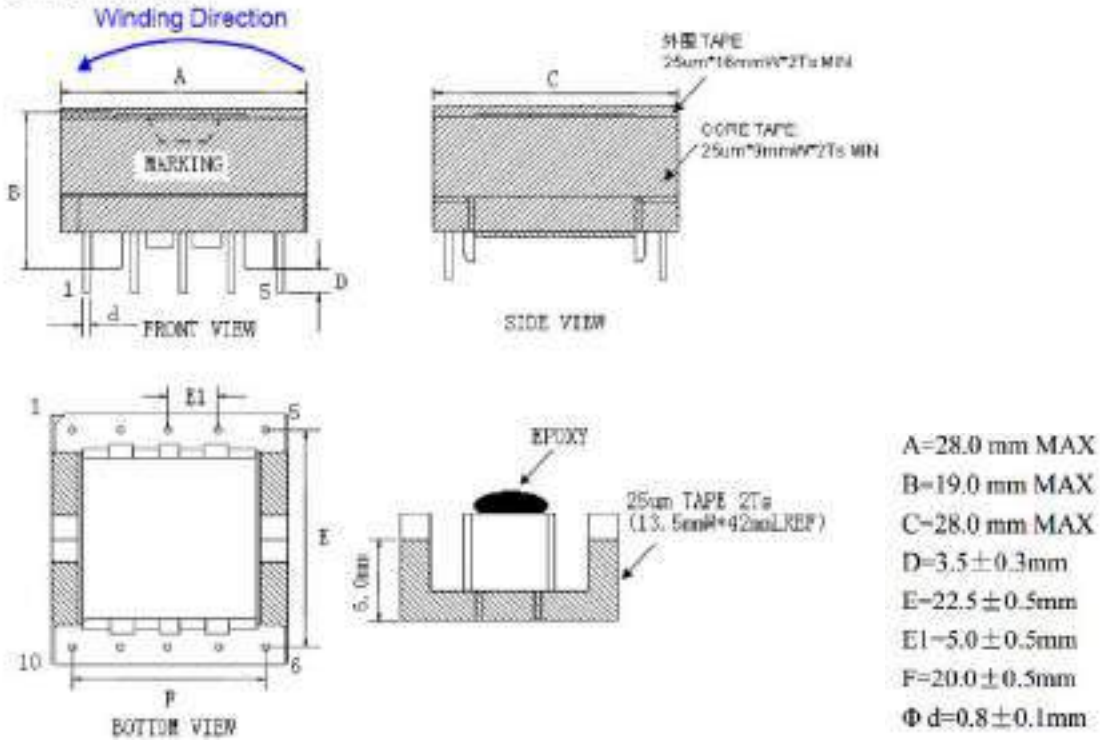
*) 2 or 3 layers / 0.4mm / Annex U
1) This equipment is intended to be operated under altitude up to 5000m, so the clearance is multiplied by the altitude correction factor 1.48, specified in table A.2 of IEC 60664-1
2) The requirement for the creepage distance is less than the requirement for the clearance, therefore the requirement for the clearance apply also for the creepage distance requirement.

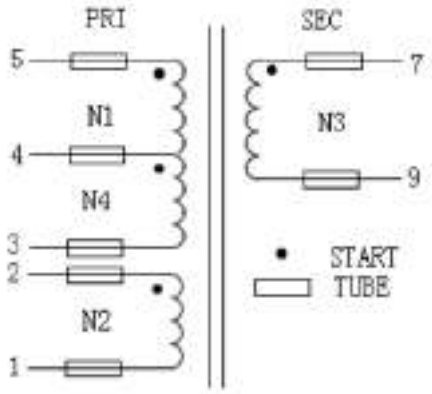
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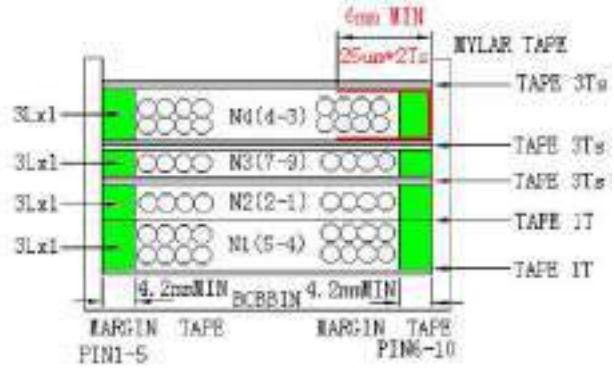
ANNEX C	Transformers specification	P

Construction / winding diagram / component part no.: T901(all sources with the same construction)

3.1 Dimension







PIN	TUBE LENGTH
1,2,3,4,5,7,9	8.0mm MIN

NO.	Winding	Terminal	Wire	Turns	Remark	TAPE
						1T
1	N1	5--4	2UEW φ0.30	23	CLOSED	1T
2	N2	2--1	2UEW φ0.28*3	8	CLOSED	3Ts
3	N3	7--9	2UEW φ0.35*3	7	CLOSED	3Ts
4	N4	4--3	2UEW φ0.30	22	CLOSED	3Ts

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ANNEX C	Transformers specification	P

Construction / winding diagram / component part no.: T901 for LIANFENG DONGJIN

ITEM	MATERIAL	UL NO.	FLAM	MANUFACTURER
BOBBIN	PM-9820 BLACK(94V-0) Thickness: 0.45mm MIN LENGTH: 26.5mm ± 0.5 mm WIDTH: 25.3mm ± 0.5 mm HEIGHT: 16.9mm ± 0.5 mm	E41429	150℃	SUMITOMO BAKELITE CO.,LTD
WIRE	TYAL-130(UEW/QA-B) MW75-C	E245514	130℃	HENG YA ELECTRIC KUN SHAN LTD
	UEW/130, QA/130 MW75-C	E194410	130℃	SHANDONG SAINT ELECTRIC CO LTD
CORE	FERRITE CORE EFD26 NH2C EFD26 MP4B LENGTH: 26.2mm±0.65mm WIDTH: 26.0mm±0.5mm HEIGHT: 9.2mm±0.3mm	N/A	N/A	HAINING LIANFENG MAGNET INDUSTRY CO.,LTD TAIZHOU MAOXIANG CO.,LTD
TAPE	NO. CT [CT(c) , CTI GROUP I, THICKNESS 0.06mm]	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD
MARGIN TAPE	NO. WF [WF *(c)(h) , CTI GROUP I]	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD
VARNISH	BC-346A	E317427	200℃	JOHN C.DOLPH CO
	WP-2952F-2G(Y)	E72979	130℃	HITACHI CHEMICAL CO., LTD
FLUX	803	N/A	N/A	LINAN GUITONG CHEMICAL TECHNOLOGY CO LTD
SOLDER	Sn99.95%	N/A	N/A	HAINING HUIPU WELDING MATERIALS CO LTD
LABEL	EX	N/A	N/A	HANGZHOU TOKA INK CHEMICAL CO LTD
	TOUMINGLONG	N/A	N/A	SHANGHAI JINDA PLASTICS CO LTD
TUBE	TEFLON TUBING TFL	E156256	200℃	GREAT HOLDING INDUSTRIAL CO.,LTD
EPOXY	H907-H##	E304477	130℃	DONG GUAN SHI PAI HUA CHUANG MATERIAL FTY

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ANNEX C	Transformers specification	P

Construction / winding diagram / component part no.: T901 PHOENIX

No.	ITEN	MATERIAL TYPE	UL No.	FLAM	MANUFACTURER
1	CORE	EFD26 NH2C LENGTH: 26.2mm±0.65mm WIDTH: 25.3mm±0.5mm HEIGHT: 9.2mm±0.3mm	N/A	N/A	HAINING LIANFENG MAGNET INDUSTRY CO .,LTD
		EFD26 DMR44 LENGTH: 26.2mm±0.65mm WIDTH: 25.3mm±0.5mm HEIGHT: 9.2mm±0.3mm	N/A	N/A	HENG DIAN GROUP DMEGC MAGNET CO.,LTD
2	BOBBIN	PM-9820 BLACK(94V-0) Thickness: 0.51mm MIN LENGTH: 26.5mm ± 0.5 mm WIDTH: 25.3mm ± 0.5 mm HEIGHT: 16.9mm ± 0.5 mm	E41429	150℃	SUMITOMO BAKELITE CO., LTD
3	WIRE	xUEW, QA-x/130 MW75-C	E326617	130℃	HANGZHOU HONGTONG WIRE & CABLE CO.,LTD
		+UEW/130 MW75-C	E194410	130℃	SHANDONG SAINT ELECTRIC CO,.LTD
4	MYLAR TAPE	No. CT [CT(c), CTI GROUP 1 Thickness: 0.06mm]	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD
		NO.35660 [NO.35660 (a) CTI GROUP II Thickness: 0.055mm]	E50292	130℃	SYMBIO INC
5	MARGIN TAPE	NO. WF [WF(c), CTI GROUP 1]	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD
6	TUBE	TEFLON TUBING TFL	E156256	200℃	GREAT HOLDING INDUSTRIAL CO.,LTD
7	VARISH	V1630FS	E314793	180℃	ELANTAS ZHUHAI CO LTD
8	FLUX	DA-800A	/	/	HUI ZHOU QIANGDA ELECTRONICS INDUSTRY CO.,LTD
9	EPOXY	QDJ600(#)	E351561	130℃	HUI ZHOU QIANGDA ELECTRONICS INDUSTRY CO.,LTD
10	SOLDER	SN-0.7CU	N/A	N/A	ZHEJIANG QIANGLI ELECTRONIC MATERIAL CO.,LTD

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ANNEX C	Transformers specification	P

Construction / winding diagram / component part no.: T901 TAI CHANG

NO	SUB PART	TYPE	UL NO	FLAME	MANUFACTURER
1	CORE	EFD26 TP4A EFD26 MP4B L:26.2±0.65mm W:25.3±0.5mm H:9.2±0.3mm	N/A	N/A	TDG HOLDING CO., LTD
					TAIZHOU MAOXIANG CO.,LTD
2	BOBBIN	PM-9820 94V-0 THICKENSS 0.45mm MIN L:26.5±0.5mm W:25.3±0.5mm H:16.9±0.5mm	E41429	150℃	SUMITOMO BAKELITE CO LTD
3	WIRE	xUEW/130, QAx/130	E221719	130℃	ZHEJIANG HONGBO TECHNOLOGY CO LTD
		UEW	E214423	130℃	SHANGHAI ASIA PACIFIC ELECTRIC CO LTD
4	MYLAR TAPE	No. CT [CT(c), CTI GROUPI Thickness: 0.06mm]	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO.,LTD
5	MARGIN TAPE	NO.WF WF(c) (CTI GPOUP I)	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD
6	TUBE	TEFLON TUBING TFL	E155256	200℃	GREAT HOLDING INDUSTRIAL CO.,LTD
7	VARNISH	T-4260(a)	E228349	130℃	WU JIANG TAIHU INSULATING MATERIAL CO LTD
8	EPOXY	H907-H #a	E304477	130℃	DONG GUAN SHI PAI HUA CHUANG MATERIAL FTY
9	SOLDER	Sn(99.3%Sn+0.7%Cu)	N/A	N/A	KUNSHAN DOUBLE TATSU TIN PRODUCTS CO.,LTD
10	FLUX	5108-2	N/A	N/A	JAMCO ELECTRONICS MATERIAL CO.,LTD
		YH-9005	N/A	N/A	LIANYUNGANG YAHENG ELECTRONIC MATERIAL CO.,LTD
11	LABLE		N/A	N/A	TAICANG JIANKANG COLOR PRINTING PACKAGING CO.,LTD
12	INK		N/A	N/A	TAICANG JIANKANG COLOR PRINTING PACKAGING CO.,LTD

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ANNEX C	Transformers specification	P

Construction / winding diagram / component part no.: T901 LI TAI

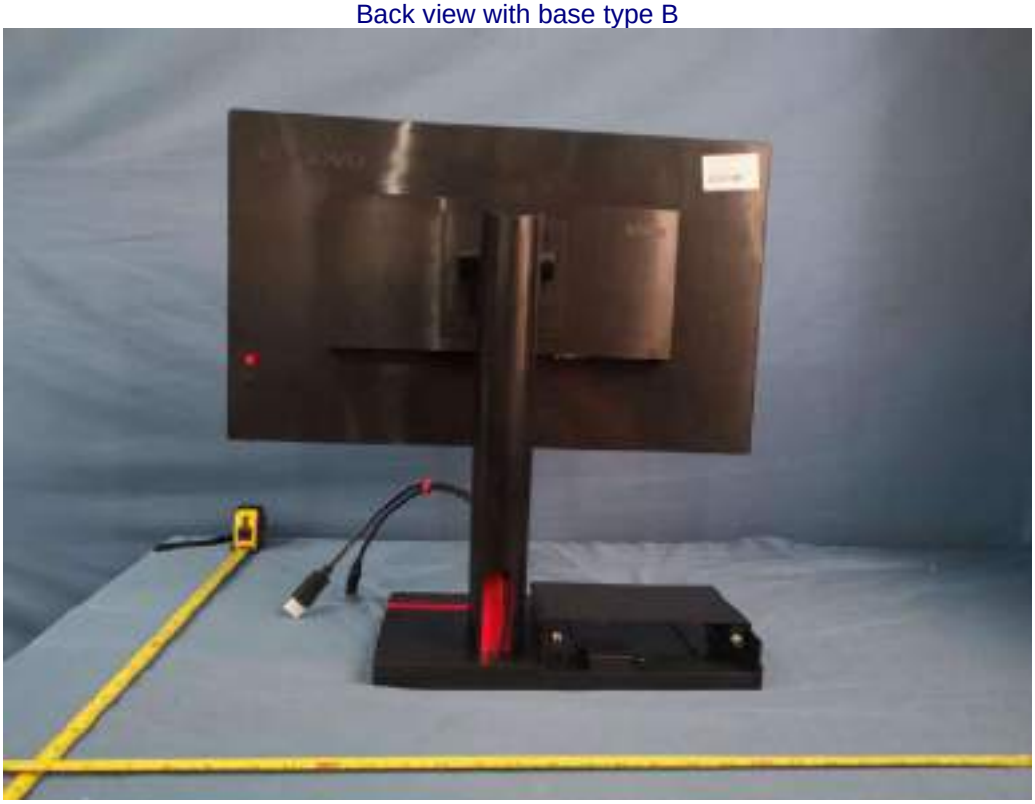
NO	SUB PART	TYPE	UL File NO.	FLAME	MANUFACTURER
1	CORE	EFD25 MP4B/TP4A L:26.3mm+/- 0.5 mm W:25.0mm+/- 0.5mm H:9.1mm+/-0.3mm	N/A	N/A	MAOXIANG TDG
2	BOBBIN	PM-9820 94V-0 THICKNESS 0.45mmMIN L:26.5mm±0.5mm W:25.4m±0.5mm H:17.0mm±0.5mm	E41429	150℃	SUMITOMO BAKELITE CO.,LTD
3	WIRE	DD-NYU (ANSI MW-28)	E84081	130℃	PACIFIC ELECTRIC WIRE & CABLE CO.,LTD
4	TAPE	NO. CT (CT(c), CTI GPOUP I THICKNESS 0.06mm)	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE CO LTD
		NO.35660Y (35660Y (e) CTI=I THICKNESS 0.55mm)	E50292		SYMBIO INC
5	MARGIN TAPE	NO. WF (WF(c), CTI GPOUP I)	E165111	130℃	JINGJIANG YAHUA PRESSURE SENSITIVE CO LTD
		NO.35661 (35661(c) (CTI GROUP I))	E50292		SYMBIO INC
6	VARNISH	V1380FC	E75225	130℃	ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC
7	EPOXY	E-500(XX)	E218090	130℃	DONGGUAN EATTO ELECTRONIC MATERIAL CO., LTD
8	TUBE	TEFLON TUBE	E156256	200℃	GREAT
9	TIN	Sn99.3Cu0.7	N/A	N/A	WELL FORE SPECIAL WIRE CORPORATION
10	INK		N/A	N/A	多米哥标识科技有限公司
11	SOLDER	(LEAD FREE SOLDER) A02R	N/A	N/A	贵品金属有限公司

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Front view with base type B



Back view with base type B



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Front view for horizontal position with base type A



Back view for horizontal position with base type A

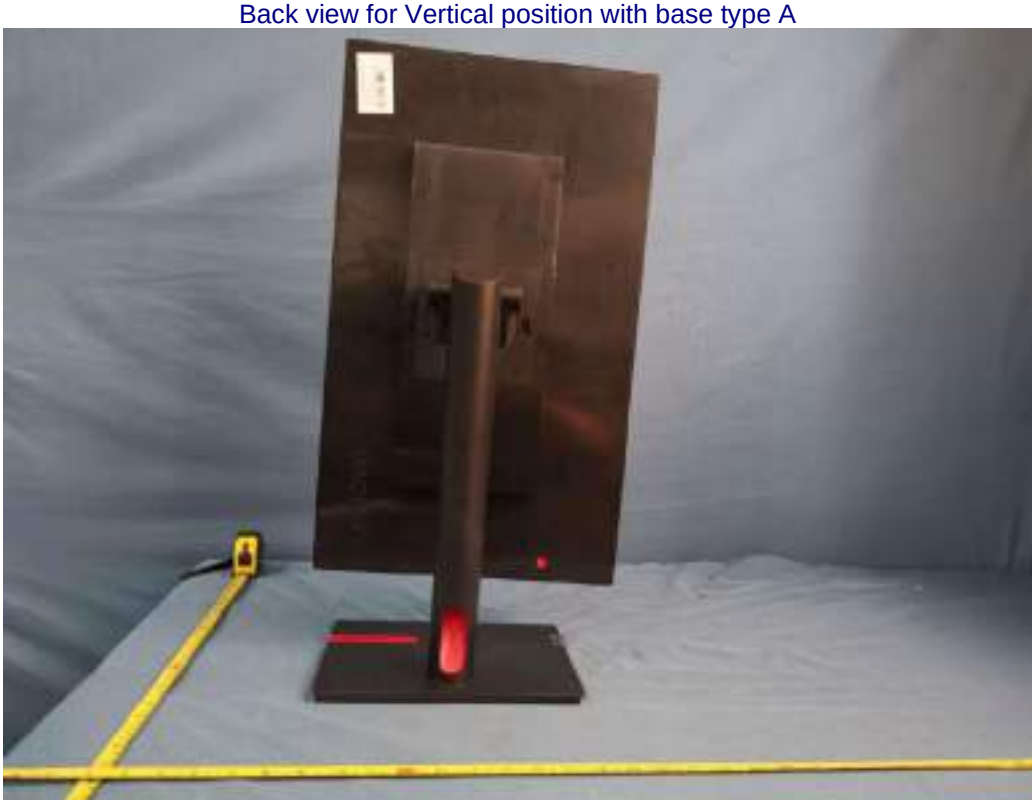


Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 504

Front view for Vertical position with base type A

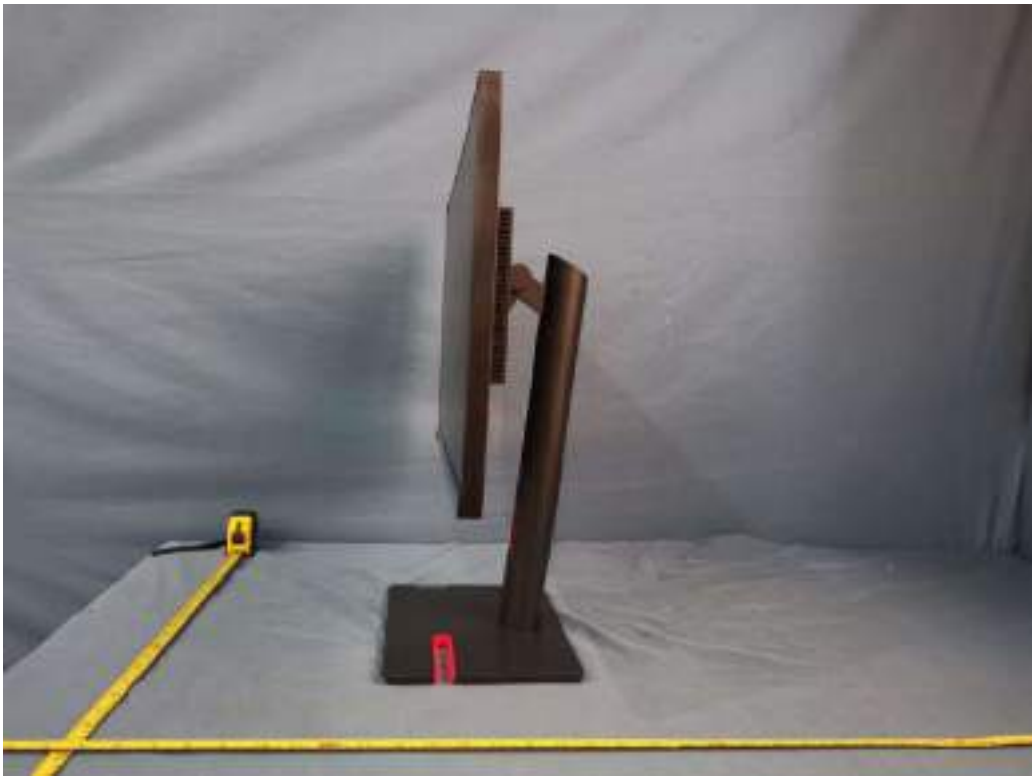


Back view for Vertical position with base type A

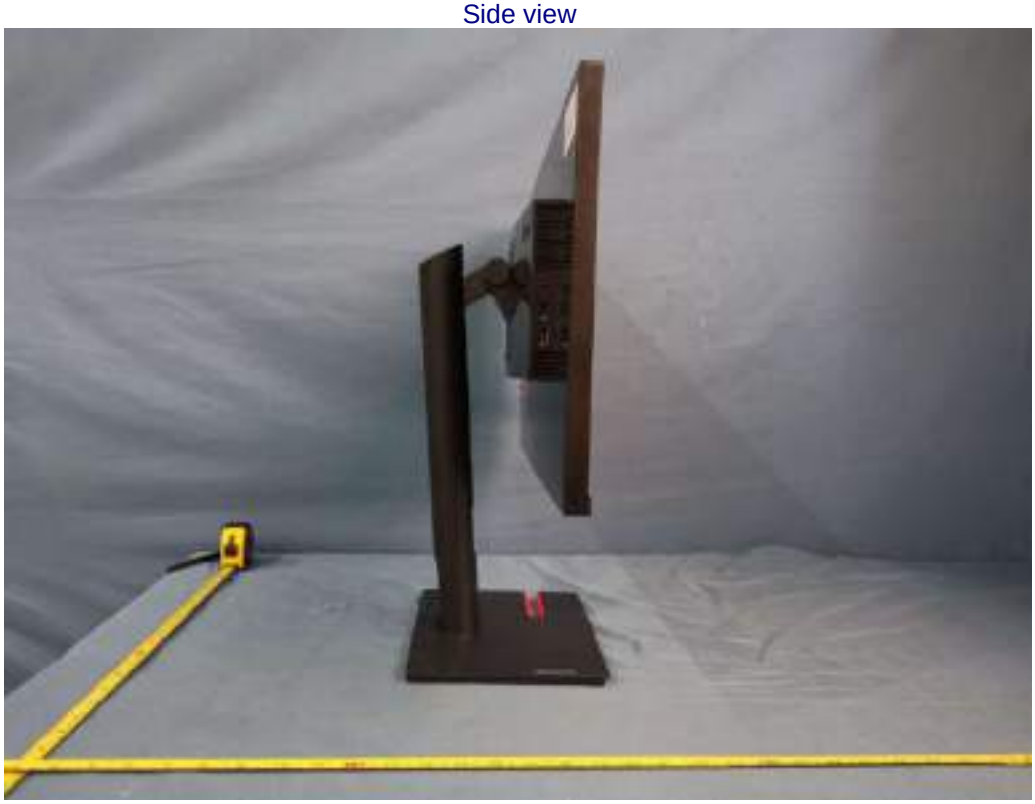


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Side view

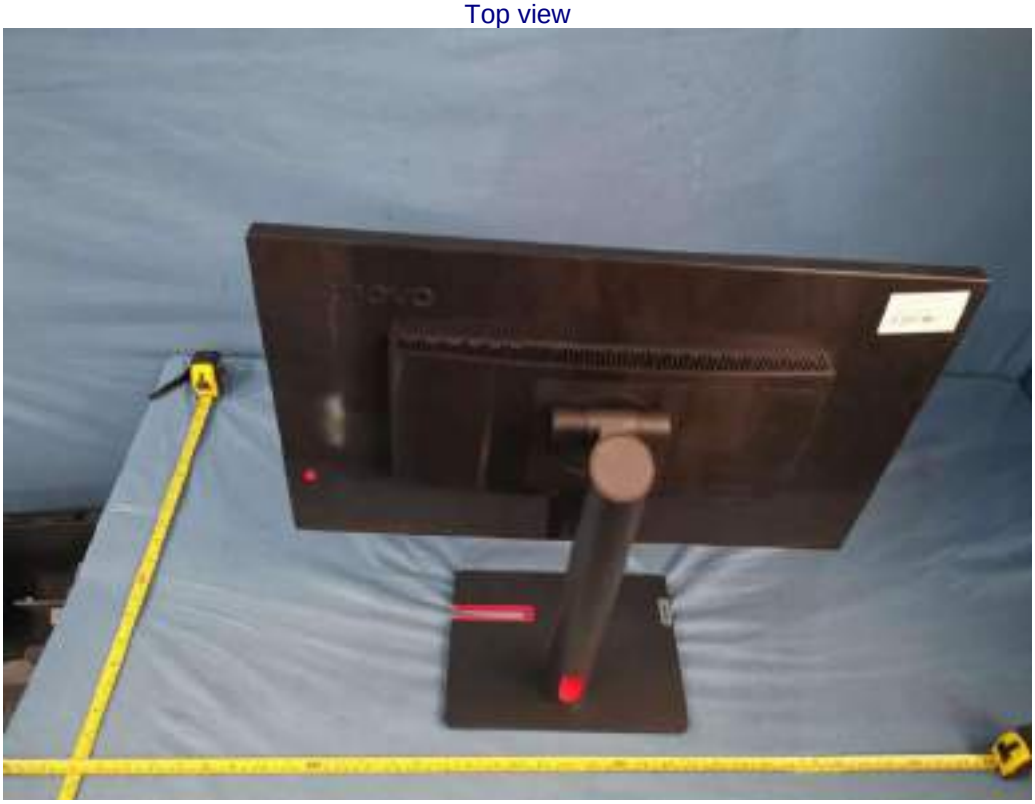


Side view

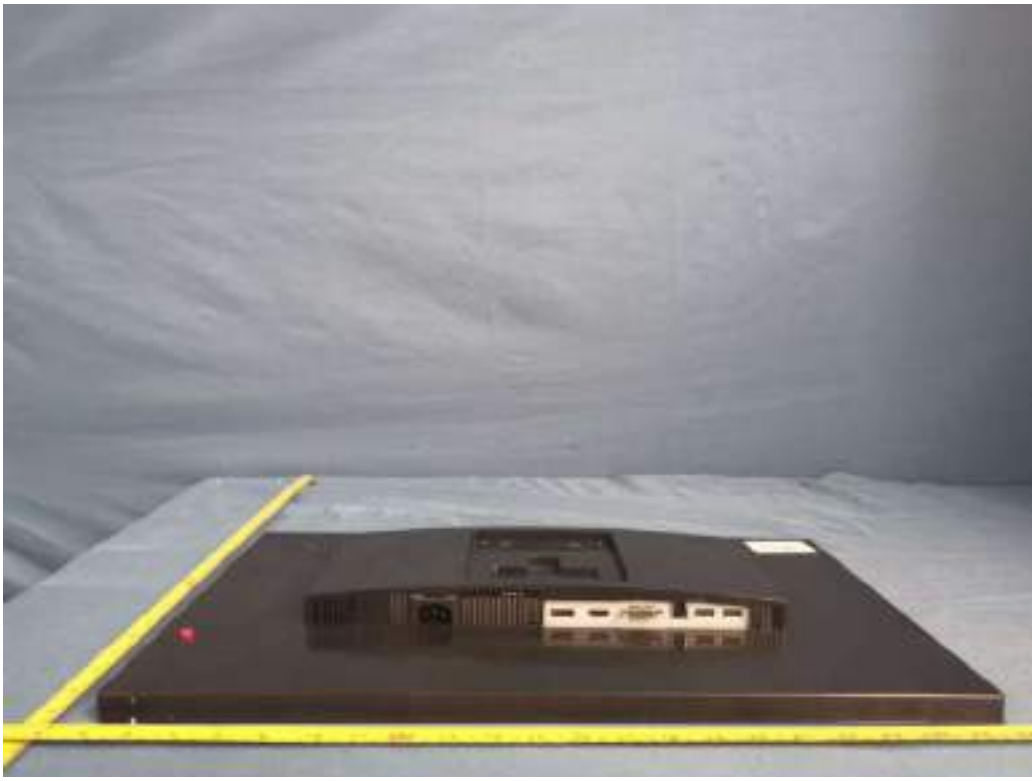


Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 506

Top view



Bottom view



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Terminals view



Side terminals view

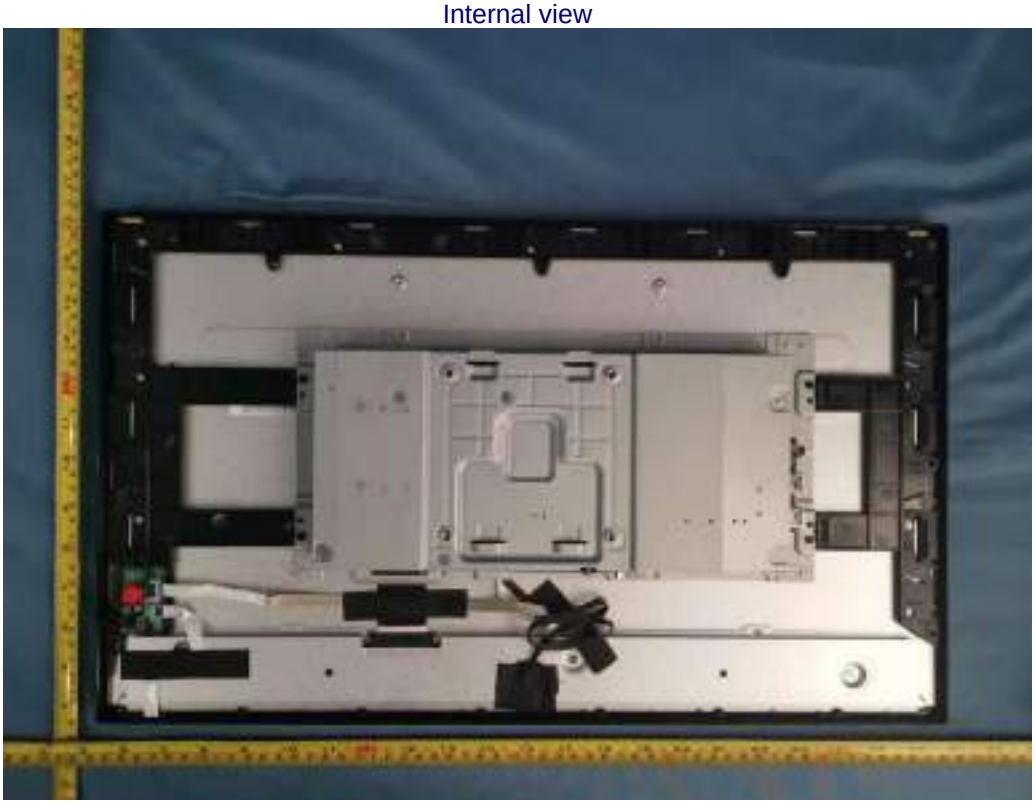


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Internal view

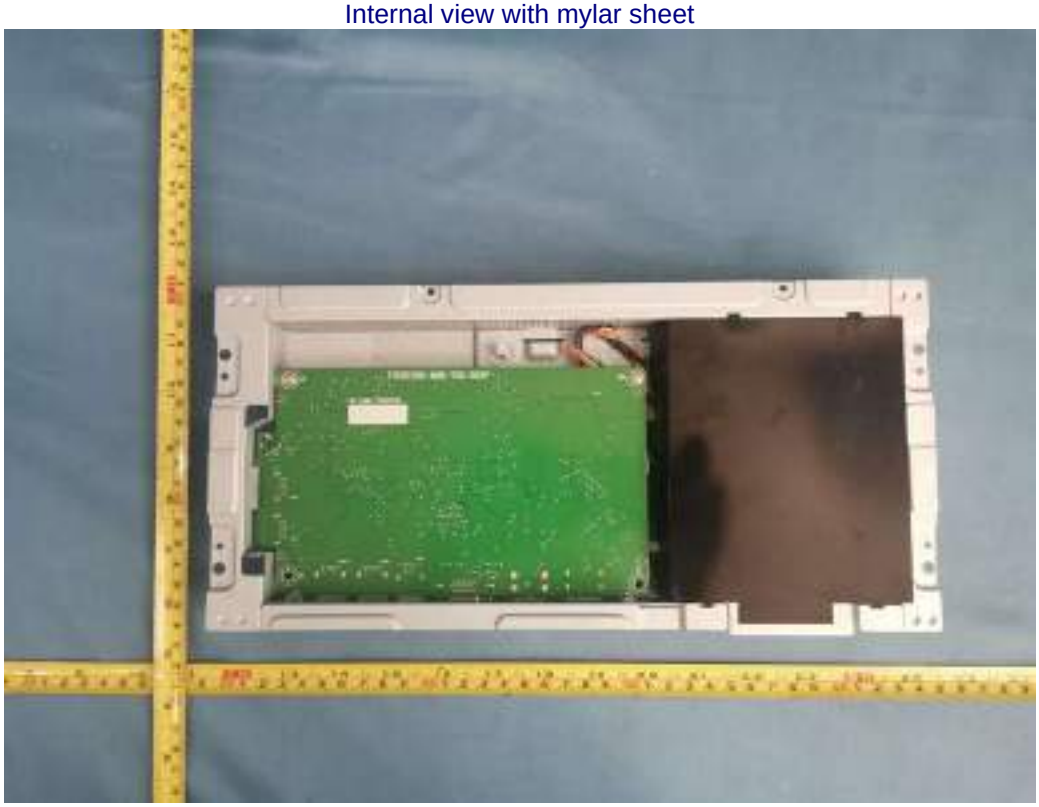


Internal view



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Internal view with mylar sheet

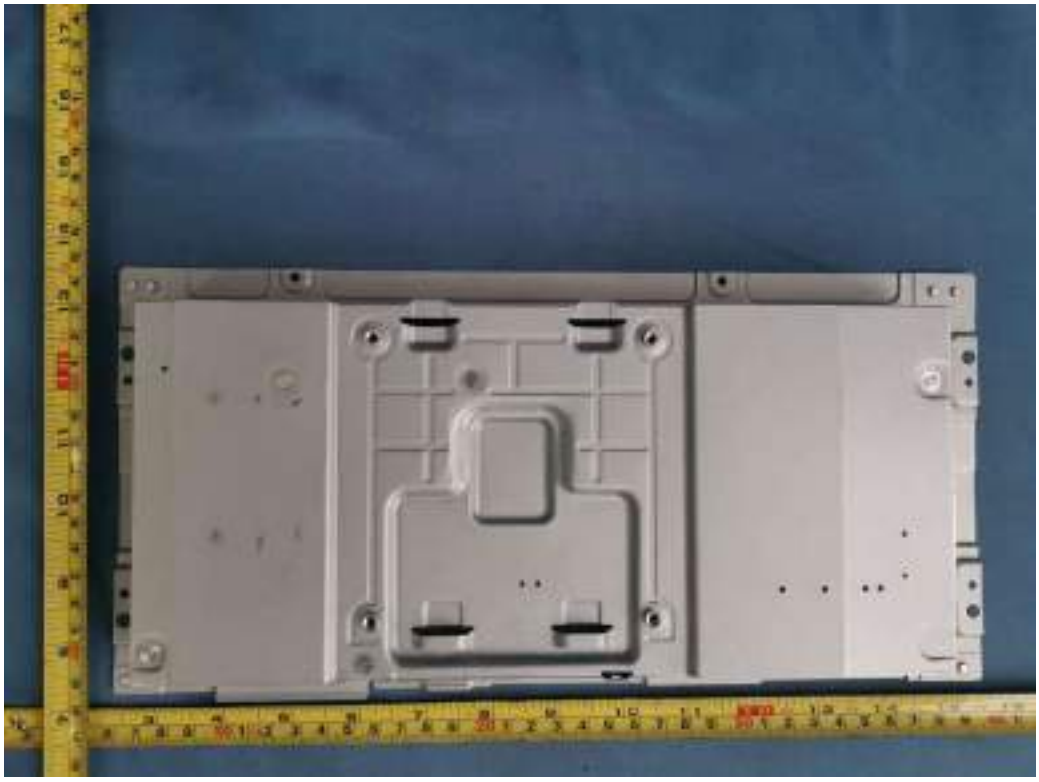


Internal view without mylar sheet



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Metal chassis view

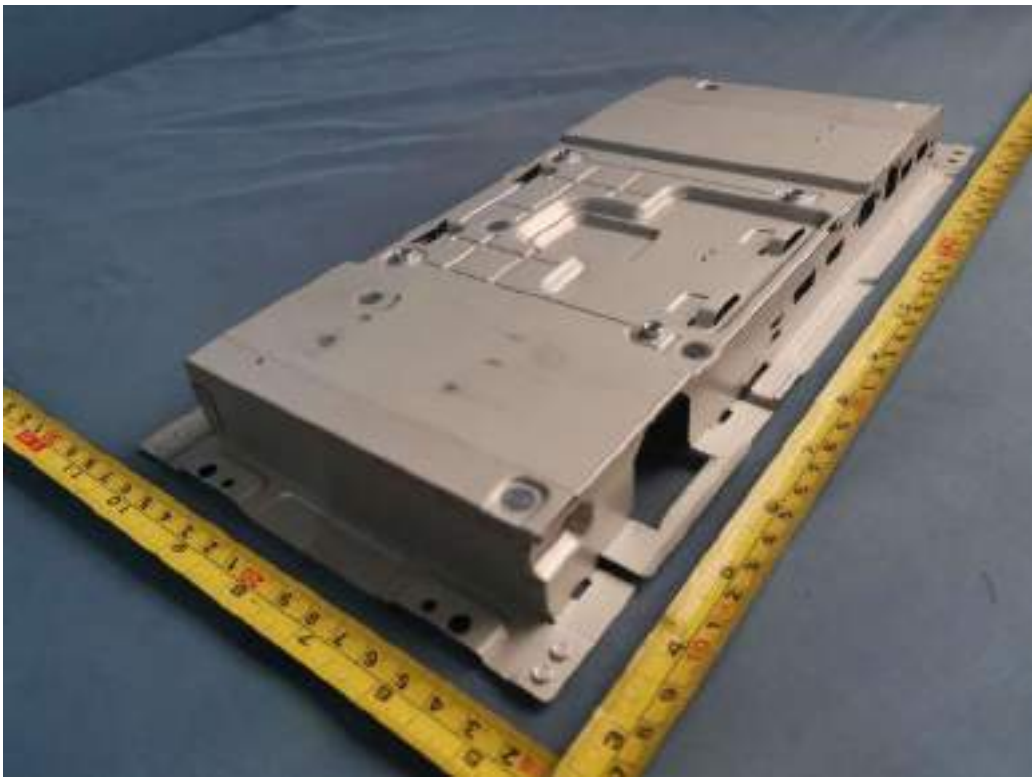


Metal chassis view



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Metal chassis view

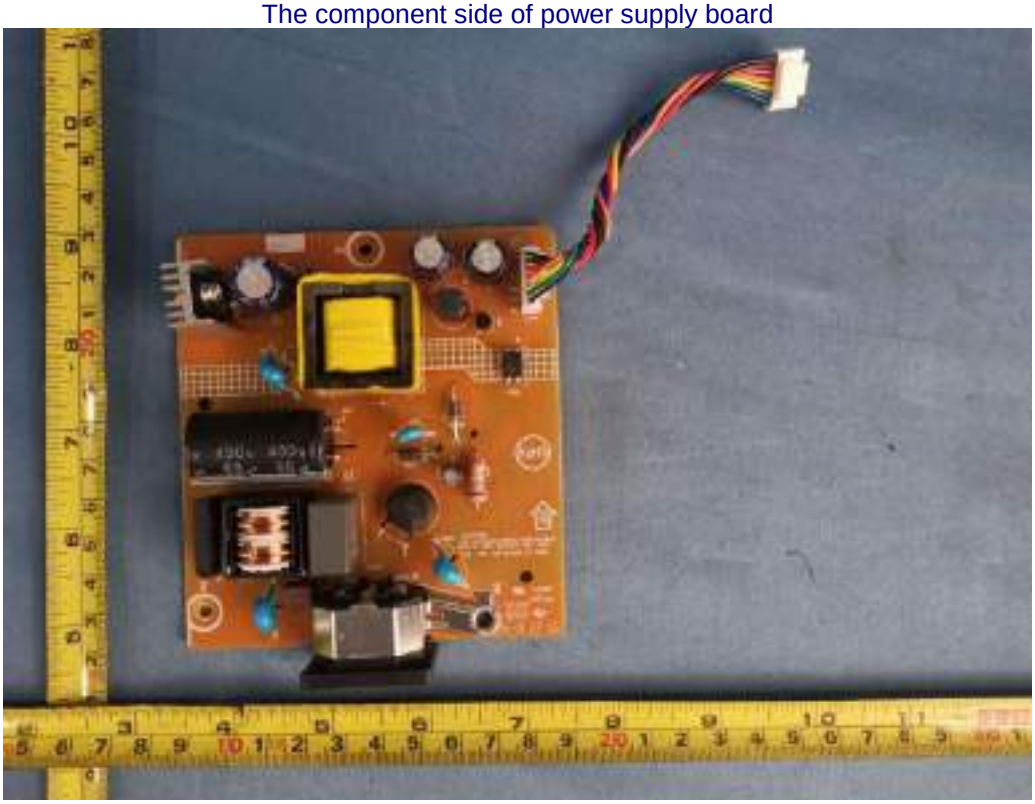


Metal chassis view

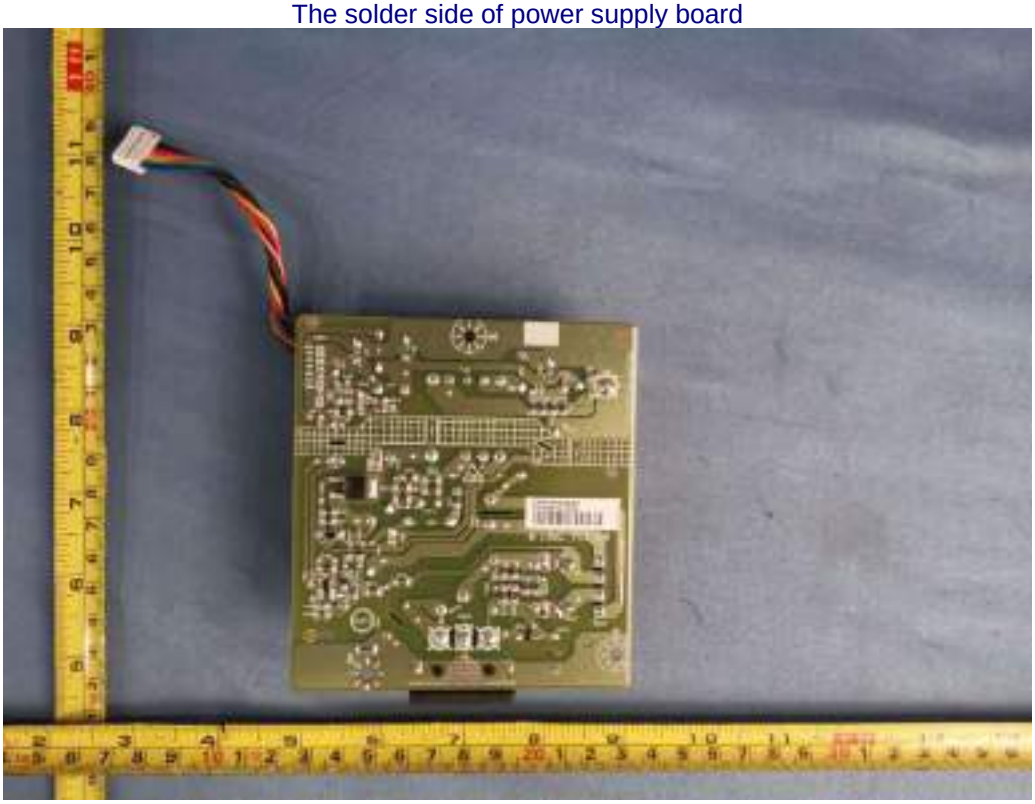


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The component side of power supply board

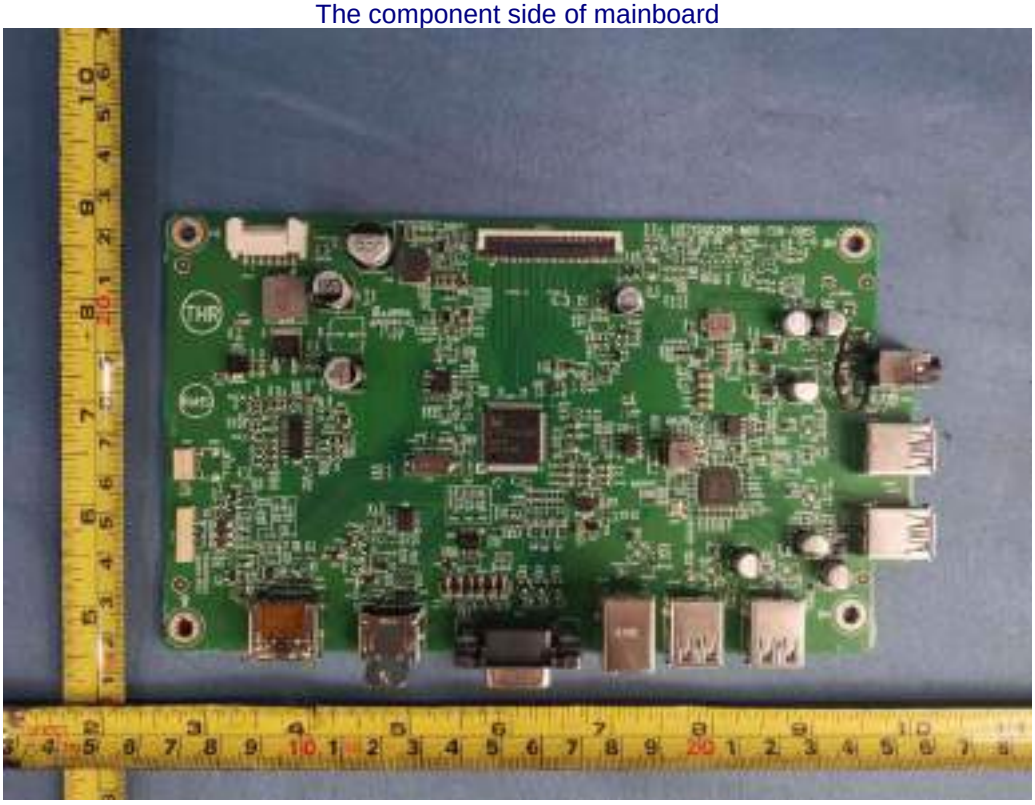


The solder side of power supply board



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The component side of mainboard

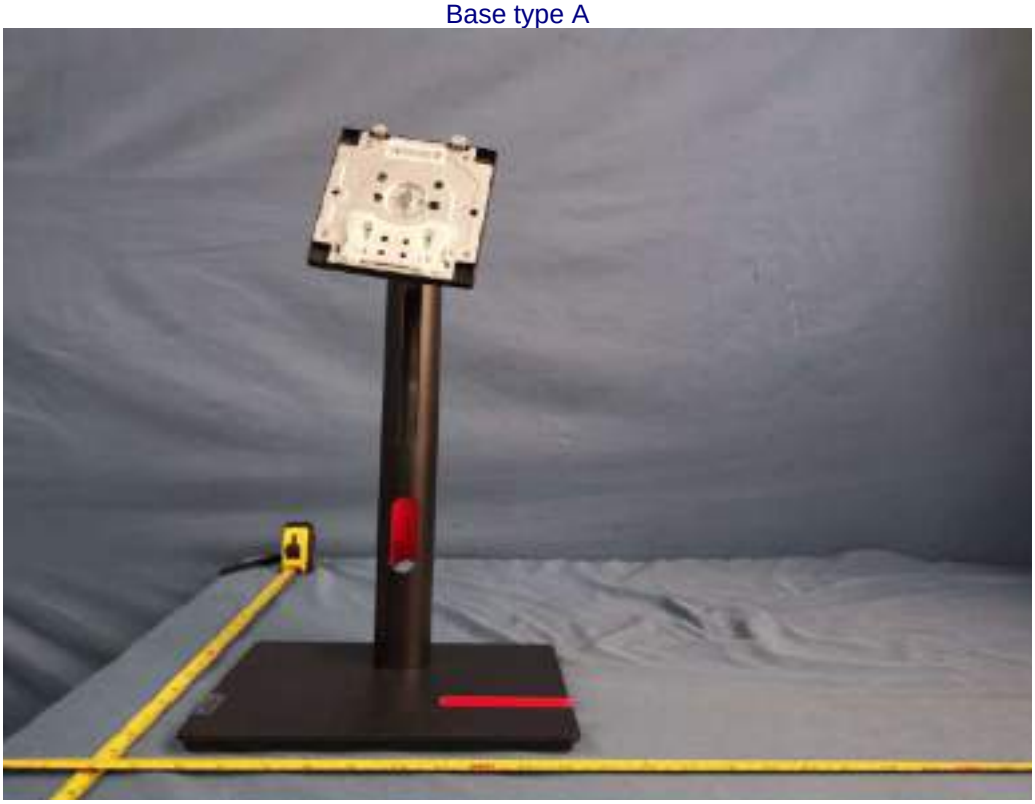


The solder side of mainboard

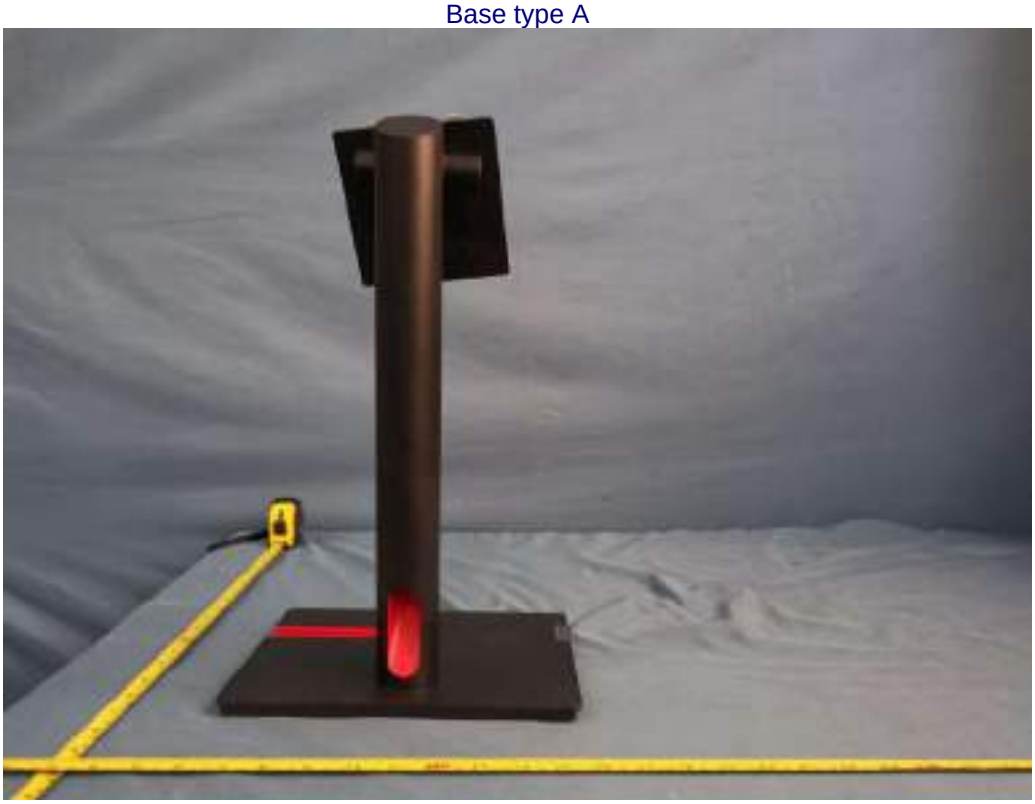


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Base type A

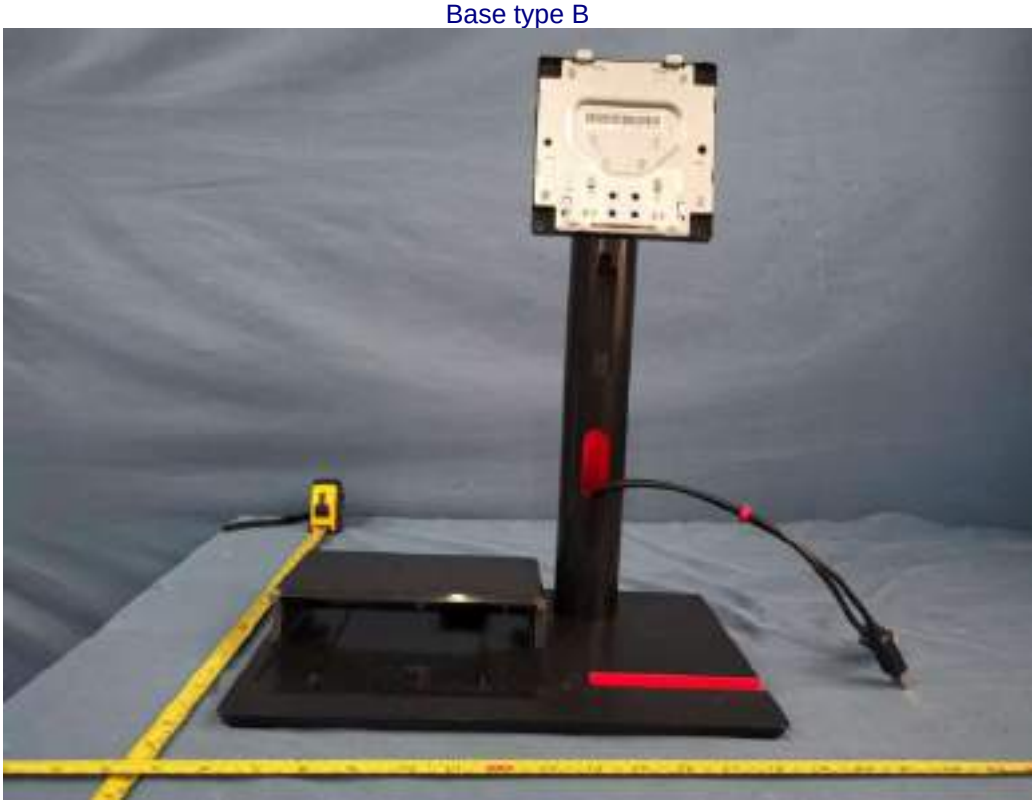


Base type A

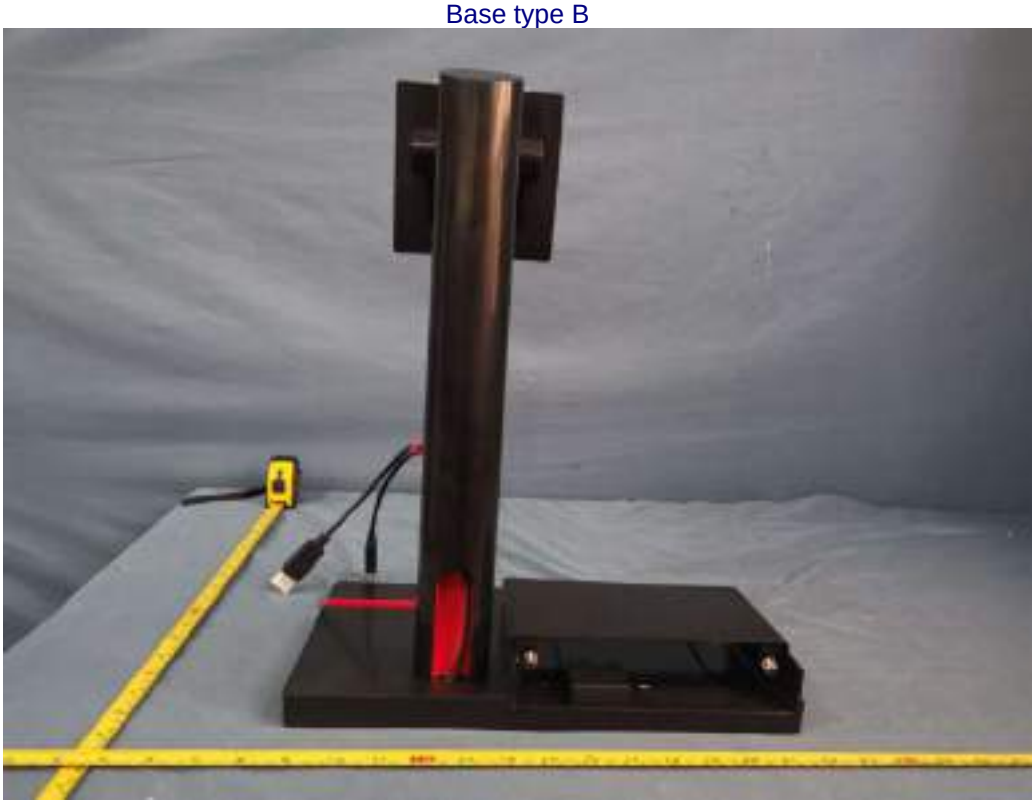


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Base type B



Base type B



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ATTACHMENT TO TEST REPORT IEC 60950-1 with A1:2009 and A2:2013
CANADA NATIONAL DIFFERENCES
Information technology equipment – Safety – Part 1: General requirements

Differences according to .....:	CAN/CSA-C22.2 No. 60950-1-07, Amd 1:2011, Amd 2:2014
Attachment Form No. .....:	CA_ND_IEC60950_1F
Attachment Originator.....:	CSA
Master Attachment .....:	Date (2015-05)

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	Special national conditions		
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2.	The equipment is provided with appliance inlet.	P
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	The equipment is provided with appliance inlet.	P
1.1.2	Baby monitors are required to comply with ASTM F2951, Consumer Safety Specification for Baby Monitors		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Equipment acceptable for connect to 20A Protection.	P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the CEC/NEC.	No external interconnecting flexible cord or cable assemblies.	N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC are required to have special construction features and identification markings.		N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.	Only one phase conductor.	N/A
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and		N/A
	- if it is part of a range that extends into the Table 2 "Normal Operating Conditions."		N/A
	A voltage rating is not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."		N/A

1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC are marked with the voltage rating and “Class 2” or equivalent.	Not Class 2 equipment.	N/A
	- Marking is located adjacent to the terminals		N/A
	- Marking is visible during wiring		N/A
2.5	Fuse providing Class 2, Limited Power Source, or TNV current limiting is not operator-accessible unless it is not interchangeable.	No such component.	N/A
2.6	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-112 and 10-906(8).	No isolated ground receptacles	N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is provided for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No standard supply outlets, receptacles, lamp holders or such transformers.	N/A
	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, provided with special transformer overcurrent protection.		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains is in accordance with the NEC/CEC.	The equipment is provided with an appliance inlet.	N/A
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	Saudi Arabia power cord provided only. it must be checked when marketing this country.	N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.	The Equipment not connected to DC power system.	N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	The equipment is not permanently connected to the mains.	N/A
3.2.5	Power supply cords are no longer than 4.5 m in length.	Saudi Arabia power cord provided only. it must be checked when marketing this country.	N/A
	Minimum cord length is 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement.		
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	The equipment is not permanently connected to the mains.	N/A

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3.3	Wiring terminals and associated spacings for field wiring connections comply with CSA C22.2 No. 0.	The equipment is provided with an appliance inlet.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm2).	The equipment is provided with an appliance inlet.	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are	No permanent wiring.	N/A
	- rated 125 percent of the equipment rating, and		N/A
	- are specially marked when specified (1.7.7).		N/A
3.3.5	First column of Table 3E revised to require “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration.”	The equipment is provided with an appliance inlet.	N/A
3.4.2	Motor control devices are provided for cord-connected equipment with a motor if the equipment is rated more than 12 A,	No such motors in the equipment.	N/A
	- or if the motor has a nominal voltage rating greater than 120 V		N/A
	- or is rated more than 1/3 hp (locked rotor current over 43 A)		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position.	No disconnect switch in the equipment.	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the computer room remote power-off circuit.	No such battery.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.	No flammable liquids within the equipment.	N/A
4.3.13.5.1	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No laser is used.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m3 (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	The equipment has no combustible area greater than 27 cubic feet.	N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.	The equipment has no combustible material greater than 0.93m^2 or single dimension greater than 1.8m.	N/A
	Non-metallic enclosures of equipment for use in spaces used for environmental air (plenums) are required to comply with UL 2043.		N/A

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Annex H	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No such part.	N/A
	Other National Differences The following key national differences are based on requirements other than national regulatory requirements.		
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.	Critical components are IEC certified. See list of critical components in main CB report (§ 1.5.1). There may be additional requirements for components in CSA.	—
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as either a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply.	The Equipment not connected to DC power system.	N/A
	This maximum operating voltage includes consideration of the battery charging “float voltage” associated with the intended supply system, regardless of the marked power rating of the equipment.		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuitry.	N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.	No TNV circuitry.	N/A
2.6.2	Equipment with functional earthing is required to be marked with the functional earthing symbol (IEC 60417-6092).		N/A

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2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.	Considered	P
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more reduce the risk of injury due to the implosion of the CRT.	No CRTs in the equipment.	N/A
4.3.2	Equipment with handles complies with special loading tests.	The equipment has no handles.	N/A
4.3.8	Battery packs for both portable and stationary applications are required to comply with special component requirements.		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals comply with a special touch current measurement tests.	No TNV circuitry.	N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded.	See main test report table 5.3.	P
	During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary		P
6.4	Equipment intended for connection to telecommunication network outside plant cable is protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	No TNV circuitry.	N/A
Annex EE	UL articulated accessibility probe (Fig EE.3) required for assessing accessibility to document/media shredders instead of the Figure 2A test finger.	This equipment is not Document shredding machines.	N/A
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV circuitry.	N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear comply with special acoustic pressure requirements.	No TNV circuitry.	N/A

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IEC60950_1G ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT **IEC 60950-1** **KOREA NATIONAL DIFFERENCES** (Information technology equipment – Safety – Part 1: General requirements)			
Differences according to ..... :	K 60950-1(2011-12)		
TRF template used: ..... :	IECEE OD-2020-F3, Ed. 1.1		
Attachment Form No..... :	KR_ND_IEC60950_1G		
Attachment Originator ..... :	KTL		
Master Attachment..... :	2022-05-20		
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1.5.1	Plugs for the connection of the apparatus to the supply mains shall comply with the Korean plug standard sheets(KSC 8305)	Certified appliance inlet used	N/A

	Special national conditions		
Voltage	The marking of rated voltage or rated voltage range, for appliances intended to be connected to the supply mains, shall include 110 V, 220 V or 380 V.	Shown on label	P
Frequency	Only appliances having supply frequency of 60Hz or a frequency range including 60Hz are accepted.	Shown on label	P
Instruction	Instruction manuals shall be in Korean	Should be checked when market into the country.	—

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IEC60950_1G ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT **IEC 60950-1** **U.S.A. NATIONAL DIFFERENCES** (Information technology equipment – Safety – Part 1: General requirements)			
Differences according to ..... : UL 60950-1-07(Second Edition) + A1: 2011 + A2: 2014			
TRF template used: .....: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. ..... : US_ND_IEC60950_1G **Attachment Originator ..... :** UL(US) **Master Attachment ..... :** Dated 2021-03-12			
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	Special National Differences		
1.1.1	All equipment is designed as to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and if applicable, the National Electrical Safety Code, IEEE C2	The equipment is provided with appliance inlet.	P
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75	The equipment is provided with appliance inlet.	P
1.1.2	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A	Considered.	P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the /NEC	No external interconnecting flexible cord and cable assemblies exceeding 3.05m provided.	N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings		N/A
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings	Single phase only.	N/A
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and		N/A
	- if it is part of a range that extends into the Table 2 "Normal Operating Conditions"		N/A
	Likewise, a voltage rating is not to be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions"		N/A

1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with NEC or CEC Part 1 or NEC are marked with the voltage rating and “Class 2” or equivalent	No connectors and field wiring terminal for external Class 2 or Class 3 circuits.	N/A
	- Marking is located adjacent to the terminals		N/A
	- Marking is visible during wiring		N/A
2.5	Fuse providing Class 2, Limited Power Source, or TNV current limiting is not operator-accessible unless it is not interchangeable	No such fuse.	N/A
2.6	Equipment with isolated ground (earthing) receptacles is in compliance with NEC 250.146(D) and CEC 10-112 and 10-906(8)	No isolated ground receptacles.	N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is provided for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No special external branch circuit overcurrent devices provided.	N/A
	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, provided with special transformer overcurrent protection		N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains is in accordance with the NEC/CEC	The equipment is provided with inlet.	N/A
3.2.1	Attachment plugs of power supply cords are rated not less than 125 percent of the rated current of the equipment	The equipment is provided with inlet.	N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment comply with special earthing, wiring, marking and installation instruction requirements	Not connection to DC mains supply.	N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs	The equipment is not permanently connected to the mains.	N/A
3.2.5	Power supply cords are no longer than 4.5 m in length	It must be checked when marketing this country.	—
	Minimum cord length is 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement		N/A
	Flexible power supply cords are compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC		N/A
3.2.9	Permanently connected equipment has a suitable wiring compartment and wire bending space	The equipment is not permanently connected to the mains.	N/A
3.3	Wiring terminals and associated spacings for field wiring connections comply with CSA C22.2 No. 0	The equipment is provided with inlet.	N/A
3.3.3	Wire binding screws are not attached with conductors larger than 10 AWG (5.3 mm2)	The equipment is provided with inlet.	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are	The equipment is provided with inlet.	N/A
	- rated 125 per cent of the equipment rating, and		N/A
	- are specially marked when specified (1.7.7)		N/A

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3.3.5	Revise first column of Table 3E to “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration”		N/A
3.4.2	Motor control devices are provided for cord-connected equipment with a motor if the equipment is rated more than 12 A,	No such motor.	N/A
	- or if the motor has a nominal voltage rating greater than 120 V		N/A
	- or is rated more than 1/3 hp (locked rotor current over 43 A)		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position	No switch acting as disconnect device	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the computer room remote power-off circuit	No battery in the equipment.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30	No flammable liquids within the equipment.	N/A
4.3.13.5.1	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No laser product used.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m^3 (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge	The equipment has no combustible area greater than 0.76 m^3	N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9m^2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 52 or less	The equipment has no combustible material greater than 0.9m^2 or single dimension greater than 1.8m.	N/A
	For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less		N/A
4.7.3.1	Non-metallic enclosures of equipment for use in spaces used for environmental air (plenums) are required to comply with UL 2043		N/A
Annex H	Equipment that produces ionizing radiation complies with U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370)	The equipment does not produce ionizing radiation	N/A
	Other National Differences		

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1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery backup systems, battery packs, cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cut-offs, thermostats, (multi-layer) transformer winding wire, surge protective devices, tubing, vehicle battery adapters, wire connectors, and wire and cables	Critical components are IEC certified. See list of critical components in main CB report (§1.5.1). There ma y be additional requirements for components in US.	—
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply	Not connection to DC mains supply.	N/A
	This maximum operating voltage includes consideration of the battery charging “float voltage” associated with the intended supply system, regardless of the marked power rating of the equipment		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V_{peak} or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions	No TNV Circuit.	N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts	No TNV Circuit.	N/A
2.6.2	Equipment with functional earthing marked with the functional earthing symbol (IEC 60417-6092)		N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified	Considered	P
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more reduce the risk of injury due to the implosion of the CRT	No CRT used.	N/A
4.3.2	Equipment with handles complies with special loading tests	No handle used.	N/A
4.3.8	Battery packs for both portable and stationary applications comply with special component requirements		N/A

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5.1.8.3	Equipment intended to receive telecommunication ringing signals comply with a special touch current measurement tests	No TNV Circuitry.	N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are overloaded	See table 5.3 in main test report	P
	During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test is repeated twice (three tests total) using new components as necessary		P
6.4	Equipment intended for connection to telecommunication network outside plant cable is protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC	No TNV Circuitry.	N/A
Annex EE	Articulated accessibility probe (Fig EE.3) is used for assessing accessibility to document/media shredders instead of the Figure 2A test finger	No document/media shredders provide.	N/A
Annex M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions	No TNV circuit.	N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear comply with special acoustic pressure requirements	No TNV circuit.	N/A

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ATTACHMENT: CHINESE DIFFERENCES
Test results according to CB BULLETIN

Clause	Requirement - Test	Result - Remark	Verdict
1.1.2	GB 4943.1-2011 applies to equipment for use at altitudes not exceeding 5000m above sea level, primarily in regions with moderate or tropical climates. Amend the third dashed paragraph of 1.1.2 as: ——equipment intended to be used in vehicles, on board ships or aircraft, at altitudes greater than 5000m;	See main report.	P
1.4.5	After the third paragraph, add a paragraph: If the equipment is intended for direct connection to an AC mains supply, the tolerances on RATED VOLTAGE shall be taken as +10%,-10% unless a wider tolerance is declared by the manufacturer. The first dash paragraph "-the RATED VOLTAGE is 230V single -phase or 400V three-phase, in which case the tolerance shall be taken as +10% and -10%" of IEC 60950-1:2005 is deleted in GB 4943.1-2011	Considered.	P
1.4.12.1	Tma in clause 1.4.12.1 amended as: Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 35 °C, whichever is greater. Add note 1: For equipment not to be operated at tropical climatic conditions, Tma: is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater. Add note 2: For equipment is to be operated at 2000m-5000m above sea leave, its temperature test conditions and temperature limits are under consideration.	Considered.	P
1.5. 2	Add a note behind the first break off section in Clause 1.5.2: A component used shall comply with related requirements corresponding altitude of 5000m.	See main report.	P
1.7	Add one paragraph before the last paragraph: The required marking and instruction should be given in normative Chinese unless otherwise specified.	Must be considered when marketed to China.	—

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 528

1.7.1	Based on the AC mains supply of China, the RATED VOLTAGE should be 220V (single phase) or 380V (three-phases) for single rated voltage, for RATED VOLTAGE RANGE, it should cover 220V or 380V (three-phases), for multiple RATED VOLTAGES, one of them should be 220V or 380V (three-phases) and set on 220V or 380V (three-phases) when manufactured. And the RATED FREQUENCY or RATED FREQUENCY RANGE should be 50Hz or include 50Hz.	Rated voltage include 220V single phase.	P
1.7.2.1	Add requirements of warning for equipment intended to be used at altitudes not exceeding 2000m or at non-tropical climate regions: For equipment intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used at altitude not exceeding 2000m."  For equipment intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording, or a symbol as in annex DD shall fixed to the equipment at readily visible place. "Only used in not-tropical climate regions."  If only the symbol used, the explanation of the symbol shall be contained in the instruction manual. The above statements shall be given in a language acceptable to the regions where the apparatus is intended to be used.	5000m and tropical requirements	N/A

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2.7.1	Amended the first paragraph as: Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except special provisions. And the protective device shall meet the requirement of Clause 5.3. Delete note of Clause 2.7.1.	Protective device is integrated in the equipment, see also Sub-clause 5.3.	P
2.9.2	First section of Clause 2.9.2 amended as two sections: Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature 40±2 ℃ and a relative humidity of (93±3) %. During this conditioning the component or subassembly is not energized. For equipment not to be operated at tropical climatic conditions, Where required by 2.9.1, 2.10.8.3, 2.10.10 or 2.10.11, humidity conditioning is conducted for 48 h in a cabinet or room containing air with a relative humidity of (93±3) %. The temperature of the air, at all places where samples can be located, is maintained within 2 ℃ of any convenient value between 20 ℃ and 30 ℃ such that condensation does not occur. Due to pretreatment of equipment operated at high altitude area is humidity conditioning withstand hot shock, specific requirements are to be considered. Add note: For equipment to be operated at 2000 m - 5000m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered.	Must be considered when market to the country.	—

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 530

2.10.3.1	Amend the third paragraph of Clause 2.10.3.1 to be: These requirements apply for equipment to be operated up to 2000 m above sea level. For equipment to be operated at more than 2000 m above sea level and up to 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of IEC 60664-1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.	See main test report.	P
2.10.3.3 & 2.10.3.4	Add "(applicable for altitude up to 2000m)" in header of Table 2K、2L and 2M.	Considered.	P
2.10.3.4	Add a new section above Table 2K and in Clause 2.10.3.4: Minimum CLEARANCES determined by above rules apply for equipment to be operated up to 2000m above sea level. For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1（ IEC 60664-1）. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of GB/T16935.1.	See main test report.	P
3.2.1.1	Add a paragraph before the last paragraph: Plugs connected to AC mains supply shall comply with GB 1002 or GB 1003 or GB/T 11918 as applicable.	Must be check with market.	—
4.2.8	Clause 4.2.8 cathode ray tubes quoted Clause 18 of GB8898-2011. Delete note of Clause 4.2.8.	No such equipment.	N/A
Annex E	Last section of Annex E amended as: For comparison of winding temperatures determined by the resistance method of this annex with the temperature limits of Table 4B, 35 ℃ shall be added to the calculated temperature rise. And add note: for equipment not to be operated at tropical climatic conditions, 25 °C shall be added to the calculated temperature rise to compare with the temperature of Table 4B.	Thermocouple measurement method	N/A

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 531

Annex G.6	Change the second section of Clause G.6 to be: For equipment to be operated at 2000 m - 5000m above sea level, the minimum CLEARANCE shall be multiplied by the factor 1.48 corresponding altitude of 5000m given in Table A.2 of GB/T16935.1. For equipment to be operated at more than 5000 m above sea level, the minimum CLEARANCE shall be multiplied by the factor given in Table A.2 of IEC 60664-1. Linear interpolation is permitted between the nearest two points in Table A.2. The calculated minimum CLEARANCE using this multiplication factor shall be rounded up to the next higher 0,1 mm increment.	See main test report.	P
Annex BB (informative)	Amended as : The differences between Chinese national standards GB 4943.1-2011 and GB 4943-2001.	Considered.	P
Annex DD (normative)	Added annex DD: Instructions for the new safety warning labels. DD.1 Altitude warning label  Meaning of the label: Evaluation for apparatus only based on altitude not exceeding 2000m, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used at altitude above 2000m . DD.2 Climate warning label  Meaning of the label: Evaluation for apparatus only based on temperate climate condition, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used in tropical climate region.	5000m and tropical requirement.	N/A
Annex EE (informative)	Added annex EE: Illustration relative to safety explanation in normative Chinese、Tibetan、Mongolian、Zhuang Language and Uighu.	Must be considered when market to the country.	—

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Other amendments	In accordance with the relevant CTL decisions and the amendments of IEC 60950-1, the specific requirements or mistakes in IEC standard are corrected or editorially modified in this part, Including clause 1.7, 2.1.1.7, 2.9.2, Table 2H, Figure 2H, F.8, F.9, M.3 and Annex U.	Considered.	P
Quoting standards and reference documents	The principles of quoting and referring to other standards in Annex P and reference documents of IEC 60950-1 are as follows: If the date of the reference document is given, only that edition applies, excluding any subsequent corrigenda and amendments. However, parties to agreements based on this part are encouraged to investigate the possibility of applying the most recent editions of the reference documents. For undated references, the latest edition of the referenced document applies, including any corrigenda and amendments. For the usage of international standards in Chinese national standards and industry standards is various, in the aim of achieving easy operation and based on the requirements of GB/T 1.1 and GB/T 20000.2, when quoting an entire international standard in the normative quoting files and reference documents of Annex P of this part, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted; - If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted; - If the date of the national standard or industry standard is not given, the latest edition of the standard applies; - The national standard or industry standard number, corresponding international standard number and the consistency level code should be identified in parentheses behind the listed national standard or industry standard. When quoting several chapters or clauses of the international standard, the principles of quotation are as follows: - If there is no national standard or industry standard corresponding to the international standard, then the international standard is quoted;	Considered.	P

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	- If there is national standard or industry standard corresponding to the international standard, then either the national or industry standard is quoted. Meanwhile, in order to retain the relevant information on international standards, informative annex CC is increased, which gives the table about the comparison of the normative quoting files and reference documents in IEC 60950-1: 2005 and GB4943.1-2011.		

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 534

IEC 60950_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 60950-1 with A1: 2009 and A2:2013 JAPAN NATIONAL DIFFERENCES Information technology equipment – Safety – Part 1: General requirements			
Differences according to.....: J60950-1 (H29)			
Attachment Form No. .....: JP_ND_IEC60950_1F Attachment Originator.....: JQA Master Attachment.....: 2017-11			
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	National Differences		
1.2.4.1	Add the following new notes. Note: Even if the equipment is designed as Class I, the equipment is regarded as CLASS 0I EQUIPMENT (see 1.2.4.3A) when 2-pin adaptor with earthing lead wire or cord set having 2-pin plug with earthing lead wire is provided or recommended.	Must be checked when marketing in country.	—
1.2.4.3A	Add the following new clause. 1.2.4.3A CLASS 0I EQUIPMENT Equipment having attachment plug without earthing blade, where protection against electric shock is achieved by: - using BASIC INSULATION, and - providing either of the following a) or b) in order to connect those conductive parts that might assume a HAZARDOUS VOLTAGES in the event of BASIC INSULATION fault to the PROTECTIVE EARTHING CONDUCTOR in the building wiring. a) Provision of 2-pin plug with earthing lead including the condition of that 2-pin adaptor with earthing lead wire is provided or recommended. b) Provision of an independent earthing terminal, when 2-core mains cord (without earthing conductor) is used. Note – CLASS 0I EQUIPMENT may have a part constructed with Double Insulation or Reinforced Insulation.	Must be checked when marketing in country.	—

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Clause	Requirement + Test	Result - Remark	Verdict
1.3.2	Add the following notes after the first paragraph: Note 1 Transportable or similar equipment that are relocated frequently for intended usage should not be designed as Class I or CLASS 0I EQUIPMENT unless it is intended to be installed by service personnel. Note 2 Considering wiring circumstance in Japan, equipment intended to be installed where the provision for earthing connection is unlikely should not be designed as Class I or CLASS 0I EQUIPMENT unless it is intended to be installed by service personnel.	Not transportable equipment	N/A
1.5.1	Replace the first paragraph with the follows: Where safety is involved, components shall comply either with the requirements of this standard, with the safety aspects of the relevant JIS component standard, or IEC component standards, or components shall have equivalent to or better properties than these. Replace Note 1 with the following: Note 1 Components complying with the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance. Note 2 JIS or an IEC component standard is considered relevant only if the component in question clearly falls within its scope. Add the following after the last paragraph: For an appliance connector that is able to fit with appliance inlet compatible with the standard sheet of IEC 60320-1 or JIS C 8283-1, the size of the connector shall comply with relevant standard sheet of IEC 60320-1 or JIS C 8283-1. A power supply cord set complying with JIS C 8286 is regarded to comply with this requirement. Note 3 A power supply cord set provided with appliance connector that is able to fit with appliance inlet compatible with the standard sheet of IEC 60320-1 or JIS C 8283-1 should comply with JIS C 8286.	The component fulfils the relevant IEC standard.	P

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Clause	Requirement + Test	Result - Remark	Verdict
1.5.2	Add the following Note 2 after the 4th dashed paragraph: Note 2 See 1.7.5A when Type C.14 appliance coupler rated 10 A per JIS C 8283-1 is used with an equipment rated not more than 125 V and rated more than 10 A.	Rated not more than 10A	P
1.5.5	Add the following Note after the last paragraph: NOTE An interconnection cord sets provided with interconnecting coupler for mains supply complying with JIS C 8283-2-2 should comply with JIS C 8286.		N/A
1.5.9.1	Add the following in the last of NOTE 1. Gas discharge tube connected in series with VDR may be used.	No gas discharge tube (GDT) used.	N/A
1.7	Replace EE.2 and EE.4 with the following: JA.1 Shredder warning JA.3 Shredder power disconnection		N/A
1.7.1.2	Replace first and second dashed paragraphs with the followings: - manufacturer’s or responsible company’s name or trade-mark or identification mark; - manufacturer's or responsible company’s model identification or type reference;	Has been on the label	P
1.7.2.1	Add the following after the second paragraph. Instruction or equipment marking regarding safety shall be written in Japanese unless otherwise permitted in this standard.	Must be checked when market into Japan.	--
1.7.2.5	Replace the last sentence with the following: An acceptable marking for an electric shock hazard is  (6.2.4 of JIS S 0101).		P
1.7.5	Replace the second paragraph with the following. Socket-outlets conforming to JISC8282-1 are examples of standard power supply outlets.	No socket-outlets.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.5A	Add the following new clause after 1.7.5. 1.7.5A Power supply cord set If appliance coupler according to IEC60320-1, C.14(rated current: 10A) is used in equipment whose rated voltage is less than 125V and rated current is over 10A, the following instruction or equivalent shall be described in the operating instruction. “ Use only designated cord set attached in this equipment” Example in Japanese: “この機器に同こん(梱)した指定の電源コードセットだけを使用して下さい。” If appliance coupler is used for connection to the mains and if the cord set is not provided within the package for the equipment, suitable information regarding to the cord set shall be described in the operating instruction Note Since the combination of appliance inlet with earthing pin and two-core cord set (without earthing conductor) is special, the cord set should be attached in the equipment and the operating instruction should provide the information that the cord set is exclusively used with the equipment and not allowed to use with other equipment.	AC-Inlet is used, the rated current is not over 10A	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.14A	Add the following new clause after 1.7.14. 1.7.14A Marking for CLASS 0I EQUIPMENT For CLASS 0I EQUIPMENT, the following or equivalent instructions shall be marked. - the following instruction shall be marked on the mains plug or on the visible place of the main body “Provide an earthing connection” Example in Japanese: “必ず接地接続を行ってください。” - the following instruction shall be marked on the visible place of the main body or written in the operating instructions: “Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains.” Example in Japanese: 接地接続は必ず，電源プラグを電源につなぐ前に行ってください。 また，接地接続を外す場合は，必ず電源プラグを電源から切り離してから行ってください。	Must be checked when marketing in country.	—
1.7.14B	Add the following new clause after 1.7.14A 1.7.14B Protective earthing conductor used for CLASS 0I EQUIPMENT For CLASS 0I EQUIPMENT provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment, the suitable information for the protective earthing connection shall be provided in the operating instruction. (See 2.6.3.2)	Must be checked when marketing in country.	—

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Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.1	Replace item b) of 2.1.1.1with the following. b) A test with the test finger, Figure 2A, which shall not contact parts described above when applied to openings in the ENCLOSURES after removal of parts that can be detached by an OPERATOR, including fuseholders, and with OPERATOR access doors and covers open. It is permitted to leave lamps in place for this test. Connectors that can be separated by an OPERATOR, other than those complying with JIS C 8303 or JIS C 8285 or IEC 60309 series or JIS C 8283 series or IEC 60320 series, shall also be tested during disconnection. But even if the connector does not comply with these standards, the one having equivalent to or better performance need not be tested during disconnection. Note 4 Connectors complying with Appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance.		P
2.5	Replace “IEC 60730-1” with “JIS C 9730-1” (in item b)).		N/A
2.6.2	Delete the following line. • the symbol  ,IEC 60417-5018 (2011-07);	Class I equipment.	N/A
2.6.3.2	Add the following after the first paragraph. However where the single core conductor is used for protective earthing lead or earthing cord for CLASS 0I EQUIPMENT, either of the following condition shall be met. - Use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having equivalent to or more strength and thickness. - Single core cord or single core cab tire cable with 1.25 mm2 or more cross-sectional area	No protective earthing lead or earthing used.	N/A
2.6.3.5	Add the following after the first paragraph. However this requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.4.2	Replace the first paragraph with the following. Equipment required to have protective earthing shall have a main protective earthing terminal. For equipment with a DETACHABLE POWER SUPPLY CORD, the earthing terminal in the appliance inlet is regarded as the main protective earthing terminal. However, for CLASS 0I EQUIPMENT provided with the separate main protective earthing terminal other than appliance inlet, the separate main protective earthing terminal may be treated as mains protective earthing terminal.	Appliance inlet used.	N/A
2.6.5.4	Replace the first sentence with the following. Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following: Add the following after last paragraph: Note For CLASS 0I EQUIPMENT,1.7.14A is applied instead of this requirement.	See main test report	P
2.6.5.8A	Add the following new clause after 2.6.5.8 2.6.5.8A Earthing of CLASS 0I EQUIPMENT Plugs with a lead wire for earthing shall not be used for equipment having a rated voltage exceeding 150V. For plugs with a lead wire for earthing, the lead wire shall not be earthed by a clip. CLASS 0I EQUIPMENT shall be provided with an earthing terminal or lead wire for earthing in the external location where easily visible.	Must be checked when marketing in country.	—
2.7.6	Replace “ISO 3864, No. 5036” with “6.2.4 of JIS S 0101”.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.1	Replace the 8th paragraph with the following The above minimum CLEARANCE for connectors do not apply to connectors that comply with JIS C 8285, IEC60309 series of standards, JIS C 8283 series of standards, IEC60320 series of standards, JIS C 8303, or even if it does not comply with the above standards but the one having equivalent to or better performance and dimension which comply with JIS C 8283 series of standards, JIS C 8303 or IEC 60309-2. Note Connectors complying with Appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance.		N/A
2.10.3.2 Table 2J	In Japan, the value of the main power supply transient voltage for the nominal ac main power supply voltage of 100 V is determined by applying the row of AC main power supply voltage 150 V.		N/A
2.10.4.3	Replace the 6th paragraph with the following The above minimum CREEPAGE DISTANCE for connectors do not apply to connectors that comply with JIS C 8285, IEC60309 series of standards, JIS C 8283 series of standards, IEC60320 series of standards, JIS C 8303, or even if it does not comply with the above standards but the one having equivalent to or better performance and dimension which comply with JIS C 8283 series of standards, JIS C 8303 or IEC 60309-2. Note Connectors complying with Appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance.		N/A
2.10.9	Replace “1.4.5” in the third paragraph with “1.4.12”.		N/A
3.2.3	Add the following after the third paragraph. Table 3A applies when cables complying JIS C 3662 series of standards or JIS C 3663 series of standards are used. In case of other cables, cable entries shall be so designed that the cable could be fitted in a conduit.	Not a permanently connected equipment.	N/A
3.2.4	Add the following as 4th dashed paragraph. - be so constructed that mechanical stress shall not transmit to the soldering part of inlet terminal during insertion or removal of the connector except that the body of the inlet is secured and is secured not only soldering.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.5.1	Add the following after Note 3: Note 4 In Japan, mains cords having equivalent to or better electro-mechanical and fire safety performance as above and complying with Appendix 1 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance can be used. Replace the paragraph after Note 3 with the following. For equipment required to have protective earthing, a PROTECTIVE EARTHING CONDUCTOR shall be included in the MAINS SUPPLY cord except for CLASS 0I EQUIPMENT having separate protective earthing conductor from mains cord. Add the following after the second paragraph after Note 3: Note 5 For the cross-sectional area of mains cord described in Note 4, relevant Japanese wiring regulation can be applied.	Saudi Arabia power cord provided only. it must be checked when marketing this country.	N/A
3.2.5A	Add the following new clause after 3.2.5 3.2.5A AC mains plug Mains plug for PLUGGABLE EQUIPMENT TYPE A shall comply with JIS C 8282-1 or equivalent to or better performance. Power supply cord set complying with JIS C 8286 is regarded to meet the requirements. Mains plug with fuse link for PLUGGABLE EQUIPMENT TYPE A shall comply with JIS C 8282-2-1 or equivalent to or better performance. Note Mains plug complying with Appendix 4 of the interpretation of Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance is regarded to have equivalent to or better performance.	Appliance inlet used	N/A
3.3.4 Table 3D	Add the following note to Table 3D: Note For cables other than those complying with JIS C 3662 series of standards or JIS C 3663 series of standards, the terminals shall be suitable for the size of the intended cables.		N/A
3.3.7	Add the following after the first sentence: This requirement is not applicable to the external earthing terminal of CLASS 0I EQUIPMENT.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.8	Add the following after the first paragraph: Note Intrinsically protected picture tube is required to comply with JIS C 6965 in clause 18 of JIS C 6065. No intrinsically protected picture tube which is out of scope of JIS C 6965 is required to test according to sub-clause 18.2 of JIS C 6065.		N/A
4.3.4	Add the following after the first sentence: This requirement also applies to those connections in CLASS 0I EQUIPMENT, where CLEARANCE or CREEPAGE DISTANCES over BASIC INSULATION would be reduced to less than the values specified in 2.10.		N/A
4.3.5	Replace the first dashed paragraph with the following. Within a manufacturer's unit or system, plugs and sockets likely to be used by the OPERATOR or by a SERVICE PERSON shall not be employed in a manner likely to create a hazard due to misconnection. In particular, connectors complying with IEC 60320/JIS C 8283 series of standards or JIS C 8303 or JIS C 8358 shall not be used for SELV CIRCUITS or TNV CIRCUITS. Keying, location or, in the case of connectors accessible only to a SERVICE PERSON, clear markings are permitted to meet the requirement.		N/A
4.3.6	Replace the 1st paragraph with the following DIRECT PLUG-IN EQUIPMENT shall not impose undue stress on the socket-outlet. The mains plug part shall comply with the standard for the relevant mains plug. (see 3.2.5A)		N/A
4.4.2	Replace the paragraph with the following: HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA SHREDDERS shall also comply with Annex JA.		N/A
4.5.3	Add the following note to footnote b) of Table 4B: NOTE In case no data for the material is available, Appendix 4, 1. (1). b. 3 of the Interpretation on the Ministerial Ordinance stipulating Technical Specifications for Electrical Appliances is regarded as maximum temperature limit of the material.		N/A

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<table>
<tr><th colspan="4">IEC 60950_1F ATTACHMENT</th></tr>
<tr><th>Clause</th><th>Requirement + Test</th><th>Result - Remark</th><th>Verdict</th></tr>
<tr><td>5.1.3</td><td>Add a note after the first paragraph as follows:

Note – Attention should be drawn to that majority of three-phase power system in Japan is of delta connection, and therefore, in that case, test is conducted using the test circuit from IEC 60990, figure 13.</td><td>Single phase connection</td><td>N/A</td></tr>
<tr><td>5.1.6</td><td>Replace Table 5A. as follows
<table>
<tr><th>Type of equipment</th><th>Terminal A of measuring instrument connected to:</th><th>Maximum TOUCH CURRENT mA r.m.s. a</th><th>Maximum PROTECTIVE CONDUCTOR CURRENT</th></tr>
<tr><td>ALL equipment</td><td>Accessible parts and circuits not connected to protective earth b</td><td>0,25</td><td>-</td></tr>
<tr><td rowspan="2">HAND-HELD</td><td>Main protective earthing terminal of CLASS I EQUIPMENT</td><td>0,75</td><td>-</td></tr>
<tr><td>Main protective earthing terminal of CLASS 0 I EQUIPMENT</td><td>0,5</td><td>-</td></tr>
<tr><td rowspan="2">MOVABLE (other than HAND_HELD, but including TRANSPORTABLE EQUIPMENT)</td><td>Main protective earthing terminal of CLASS I EQUIPMENT</td><td>3,5</td><td>-</td></tr>
<tr><td>Main protective earthing terminal of CLASS 0 I EQUIPMENT</td><td>1.0</td><td>-</td></tr>
<tr><td rowspan="2">STATIONARY, PLUGGABLE TYPE A</td><td>Main protective earthing terminal of CLASS I EQUIPMENT</td><td>3,5</td><td>-</td></tr>
<tr><td>Main protective earthing terminal of CLASS 0 I EQUIPMENT</td><td>1,0</td><td>-</td></tr>
<tr><td rowspan="2">ALL other STATIONARY EQUIPMENT

- not subject to the conditions of 5.1.7
- subject to the conditions of 5.1.7</td><td>Main protective earthing terminal of CLASS I EQUIPMENT</td><td>3.5
-</td><td>-
5 % of input current</td></tr>
<tr><td>Main protective earthing terminal of CLASS 0 I EQUIPMENT</td><td>1.0
-</td><td>-
-</td></tr>
<tr><td colspan="4">a If peak values of TOUCH CURRENT are measured, the maximum values are obtained by multiplying the r.m.s.values in the table by 1,414.
b Some unearthed accessible parts are covered in 1.5.6 and 1.5.7 and the requirements of 2.4 apply. These may be different from those in 5.1.6.</td></tr>
</table></td><td></td><td>N/A</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
</table>

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Clause	Requirement + Test	Result - Remark	Verdict
Annex G	Replace the paragraph before Table G.2 with the following The above minimum CLEARANCE for connectors do not apply to connectors that comply with JIS C 8285, IEC60309 series of standards, JIS C 8283 series of standards, IEC60320 series of standards, JIS C 8303, and 1.5.1 of this standard in which dimension is comply with JIS C 8283 series, JIS C 8303 or IEC 60309-2.		N/A
Annex V V.1	Replace “3.1.2”in the first line of V.1 with “312” in the first line.		P
Annex W W.1	Replace the third sentence in the first paragraph with the following: Floating circuits can exist in CLASS I EQUIPMENT, CLASS 0I EQUIPMENT and earthed circuits can exist in CLASS II EQUIPMENT.		N/A
Annex BB	This annex is not applicable.		N/A
Annex CC CC.2	Replace the third dashed paragraph with the following: - 10 000 cycles of turning enable on and off with the input connected to a capacitor rated 425 uF ±10 uF and shorting the output;		N/A
CC.3	Add note at end of CC.3: Note: The fast blow fuse should be the one complying with JIS C 6575-2.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
CC.4	Replace the 2nd dashed paragraph with the following: - 10 000 cycles of turning enable on and off with a 100 Ω± 5 Ω resistor and a 425 uF ±10 uF capacitor in parallel with the output; Replace the 4th dashed paragraph with the following: - 10 000 cycles of turning enable on and off with the input connected to a capacitor rated 425 uF ±10 uF and shorting the output; Replace the 5th dashed paragraph with the following: −10 000 cycles of turning the input pin on and off with a capacitor rated 425 uF ±10 uF connected to the input supply while keeping enable active and shorting the output; Replace the 6th dashed paragraph with the following: −10 000 cycles of turning the input pin on and off with an ferrite-core inductor having 350 mH ±10 mH inductance at 1 kHz and less than 1 Ω d.c. resistance connected to the input supply and return while keeping enable active and shorting the output; Replace the 10th dashed paragraph with the following: −3 cycles of exposing the device (not energized) to 70 ℃ ±2 ℃ for 24 h; followed by at least 1 h at room ambient; followed by at least 3 h at -30 ℃ ±2 ℃; followed by 3 h at room ambient; Replace the 11th dashed paragraph with the following: −10 cycles of exposing the device (while energized) to 50 ℃ ±2 ℃ for 10 min; followed by 10 min at 0 ℃ ±2 ℃ with a 5 min perio d of transition from one state to the other;		N/A
Annex EE	Replace Annex EE with the following Annex JA. Annex JA (normative) Document shredding machines		N/A

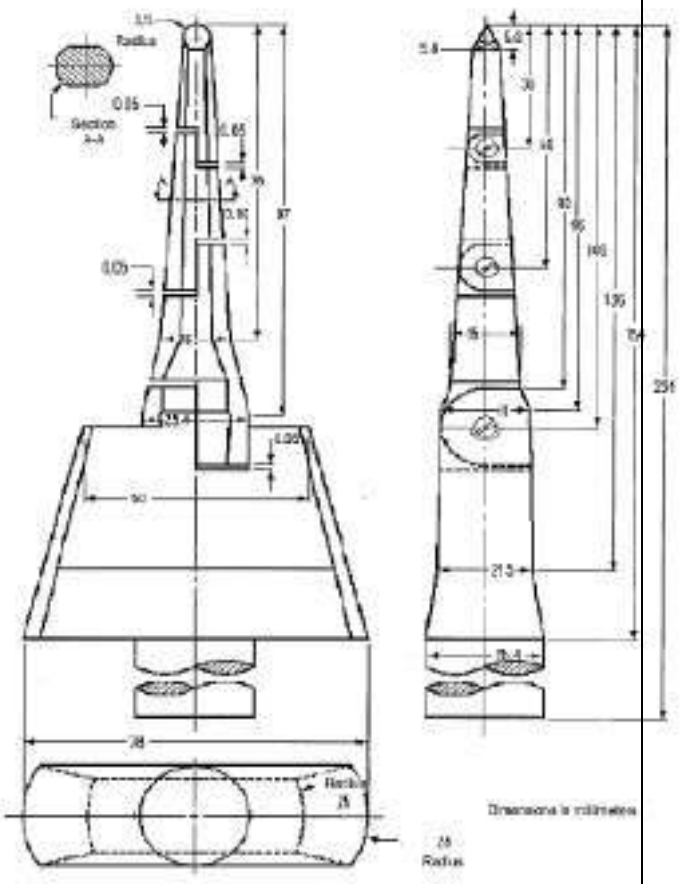
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Clause	Requirement + Test	Result - Remark	Verdict
	HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA SHREDDERS shall additionally comply with the requirements of this annex. JA.1 Markings and instructions The symbol  (JIS S 0101:2000, 6.2.1) and the following precautions for use shall be marked on readily visible part adjacent to document feed opening. The marking shall be clearly legible, permanent, and easily discernible; 子供が使用することによって，傷害などの危害が発生するおそれがある。 ; (that use by infants/children may cause a hazard of injury etc.) 文書投入口に手を触れることによって，細断機構に引き込まれるおそれがある。 ; (that a hand can be drawn into the mechanical section for shredding when touching the document-slot) 文書投入口に衣服が触れることによって，細断機構に引き込まれるおそれがある。 ; (that clothing can be drawn into the mechanical section for shredding when touching the document-slot) 文書投入口に髪の毛が触れることによって，細断機構に引き込まれるおそれがある。 ; (that hairs can be drawn into the mechanical section for shredding when touching the document-slot) - in case of equipment incorporating a commutator motor, 可燃性ガスを噴射することによって引火又は爆発するおそれがある。 (that equipment may catch fire or explode by spraying of flammable gas.) JA.2 Inadvertent reactivation Any safety interlock that can be operated by means of the test finger, Figure JA.1, is considered to be likely to cause inadvertent reactivation of the hazard. Compliance is checked by inspection and, where		

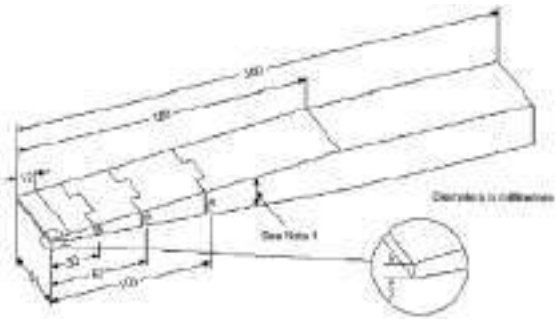
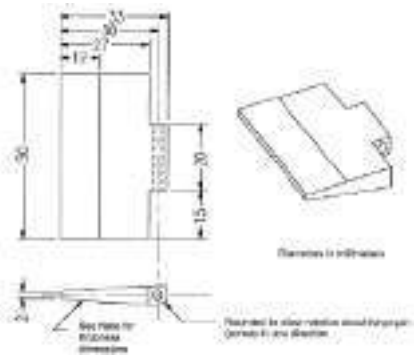
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Clause	Requirement + Test	Result - Remark	Verdict
	necessary, by a test with the test finger, Figure JA.1. JA.3 Disconnection from the mains supply Document shredding machines shall incorporate an isolating switch complying with sub-clause 3.4.2 as the device disconnecting the power of hazardous moving parts. For this switch, two-position (single-use) switch or multi-position (multifunction) switch (e.g., slide switch) may be used. If two-position switch, the positions for “ON” and “OFF” shall be indicated in accordance with sub-clause 1.7.8. If multi-position switch, the position for “OFF” shall be indicated in accordance with sub-clause 1.7.8 and other positions shall be indicated with proper terms or symbols. Compliance is checked by inspection.		
	JA.4 Protection against hazardous moving parts Any warning shall not be used instead of the structure for preventing access to hazardous moving parts. Document shredding machines shall comply with the following requirements. Insert the test finger, Figure JA.1, into all openings in MECHANICAL ENCLOSURES without applying appreciable force. It shall not be possible to touch hazardous moving parts with the test finger. This consideration applies to all sides of MECHANICAL ENCLOSURES when the equipment is mounted as intended. Before testing with the test finger, remove the parts detachable without a tool. Insert the wedge-probe, Figure JA.2, into the document-slot. And, against all directions of openings, if straight-cutting type, a force of 45 N shall apply to the probe, and 90 N if cross-cutting type. In this case, the weight of the probe is to be factored into the overall applied force. Before testing with the wedge-probe, remove the parts detachable without a tool. It shall not be possible to touch any hazardous moving parts, including the shredding roller or the mechanical section for shedding, with the probe.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	 Figure JA.1 Test finger		N/A

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	 		N/A

Distance from the tip (mm)	Thickness of probe (mm)
0	2
12	4
180	24

Note 1 - The thickness of the probe varies linearly, with slope changes at the respective points shown in the table.

Note 2 –The allowable dimensional tolerance of the probe is;

for ≤ 25 mm: +/- 0.13 mm

for > 25 mm: +/- 0.3 mm.

Figure JA.2 Wedge-probe

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ATTACHMENT TO TEST REPORT
IEC 60950-1:2005, IEC 60950- 1:2005/AMD1:2009, IEC 60950-1:2005/AMD2:2013
ISRAELI NATIONAL DIFFERENCES
(INFORMATION TECHNOLOGY EQUIPMENT – SAFETY: GENERAL REQUIREMENTS)

Differences according to.....: SI 60950 Part 1 (2015)

Attachment Form No. .....: IL_ND_IEC60950_1F
Attachment Originator.....: Standards Institution of Israel
Master Attachment .....: Date 2018-08-02

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	National Differences		—
1.6	**Power interface**		—
1.6.1	**AC Power distribution systems** At the end of the clause, the following note shall be added: Note: In Israel, the clause is subject to the Electricity Law. 1954, Electricity Regulations (Earthings and protective means against electrification for voltages up to 1,000 V), 1991, with their updates.	Must be considered when marketing into Israel.	—
1.7	**Marking and instructions**		—
1.7.1	**Power rating and identification markings** At the beginning of the clause, subclause 1.7.1.201 shall be added as follows:		—
1.7.1.201	**Marking in the Hebrew language** The marking in the Hebrew language shall be in accordance with the Consumer Protection Order (Marking of goods), 1983. In addition to the marking required by clause 1.7.1, the following details shall be marked in the Hebrew language: 1.Name of the apparatus and its commercial designation; 2.Manufacturer's name and his address; if the apparatus is imported, also the importer's name and his address; 3.Manufacturer's registered trademark, if any; 4.Name of the model and serial number; 5.Country of manufacture. The details shall be marked on the apparatus or on its packaging, or on a label well attached to the apparatus or its packaging, by bonding or sewing, such that the label cannot be easily removed.	Must be considered when marketing into Israel.	—
1.7.2	**Safety instructions and marking**		—
1.7.2.1	**General** - The following shall be added at the end of the clause: All the instruction and all the warnings related to safety shall also be written also in the Hebrew language.	Must be considered when marketing into Israel.	—
-	At the end of clause 1, clause 1.201 shall be added as follows:		

1.201	**Power consumption in standby mode** The equipment shall comply with the requirements of the Energy Sources Regulations (Maximum electrical power in standby mode for domestic and office electrical appliances), 2011, with a permitted deviation of up to 10 %	Must be considered before marketed in Israel.	—
2	**Protection from hazards** At the end of the clause, clause 2.201 shall be added as follows:		—
2.201	**Prevention of electromagnetic interferences**		—
2.201.1	Emission of electromagnetic interferences shall be tested in accordance with Israeli Standard SI 961 Part 6.1 or in accordance with the Israeli Standard that is an adoption of the International Standard CISPR 32. Note: At the time of writing this Standard, the Israeli Standard that is an adoption of the International Standard CISPR 32 is in preparation. Until publication of the Israeli Standard. the International Standard CISPR 32 may be used for testing the emission of electromagnetic interference. If the apparatus contains transmitters, it shall be tested according to Israeli Standard SI 961 Part 48.1 and according to another relevant part of the SI 961 Part 48 series or from the EN 301 489 series, according to the type of transmitter in the apparatus.	Must be considered before marketed in Israel.	—
2.201.2	Immunity to emission of electromagnetic interferences shall be tested in accordance with Israeli Standard SI 961 Part 6.2.	Must be considered before marketed in Israel.	—
2.201.3	Emission of electromagnetic interferences to the public electricity network shall be tested in accordance with the Israeli Standards SI 961 Parts 12.3 and 12.5 or in accordance with the Israeli Standards SI 61000 Part 3.12 and SI 961 Part 12.11, according to the current consumption of the equipment.	Must be considered before marketed in Israel.	—
3	**Wiring, connections and supply**		—
3.2	**Connection to a mains supply**		—
3.2.1	**Means of connection**		—
3.2.1.1	**Connection to an a.c. mains supply** After the NOTE, the following note shall be added: Note: In Israel, the supply plug shall comply with the requirements in Israeli Standard SI 32 Part I.I.	Refer to Summary of Testing in main test report.	—

	Special national conditions (if any)		—
	ANNEX P **Normative references** In place of some of the International Standards cited in the Standard and noted in this annex, the following Israeli Standards shall apply:	Must be considered before marketed in Israel.	—

The referenced International Standard	The substituted Israeli Standard	Comments
IEC 60065: 2001 Amendment 1	SI 60065 - Audio, video and similar electronic apparatus – Safety requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60065 - Edition 8.0: 2014-06
IEC 60227-1: 2007	SI 60227 Part l – Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60227-1 - Edition 3.0: 2007-10
IEC 60227-2: 1997 Amendment 1: 2003	SI 6022 7 Part 2 – Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V: Test methods	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60227-2 Edition 2.1: 2003-04
IEC 60245 (all parts)	SI 60245 (all parts) - Rubber insulated cables - Rated voltages up to and including 450/750 V	The Israeli Standard series, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard series IEC 60245 (all parts)
IEC 60309 (all parts) [(a)]	SI 1109 Part l - Plugs, socket-outlets and couplers for industrial purposes: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60309-1 - Fourth edition: 1999-02
	SI 1109 Part 2 - Plugs, socket- outlets and couplers for industrial purposes: Dimensional interchangeability requirements for pin and contact-tube accessories	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60309-2 - Fourth edition: 1999-4

The referenced International Standard	The substituted Israeli Standard	Comments
IEC 60317 (all parts) [a]	SI 1067 Part 1 – Enamelled [b] round copper wires with high mechanical properties	The Israeli Standard is identical to the International Electrotechnical Commission Standard IEC 317-1: 1980-02
	SI 1067 Part 2 – Self-fluxing enamelled [b] round copper wires	The Israeli Standard is identical to the International Electrotechnical Commission Standard IEC 317-1: 1980-02
	SI 1067 Part 3 – enamelled [b] round copper wires with a temperature index of 180 ℃	The Israeli Standard is identical to the International Electrotechnical Commission Standard IEC 317-1: 1980-02
IEC 60320 (all parts) [a]	SI 60320 Part 1 – Appliance couplers for household and similar general purposes: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60320-1 - Edition 2.1: 2007-11
	SI 60320 Part 2.1 – Appliance couplers for household and similar general purposes: Sewing machine couplers	The Israeli Standard, excluding nation al modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60320-2-1 - Second edition: 2000-07
	SI 60320 Part 2.2 – Appliance couplers for household and similar general purposes: Interconnection couplers for household and similar equipment	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60320-2-2 - Second edition: 1998-08
	SI 60320 Part 2.3 – Appliance couplers for household and similar general purposes: appliance coupler with a degree of protect ion higher than IPX0	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60320-2-3 - First edition: 1998-09
IEC 60364-1: 2001	Electricity Law, 1954, with its Regulations and updates	
IEC 60730-1: 1999 Amendment 1 (2003)	SI 60730 Part I - Automatic electrical controls: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60730-1 - Edition 5.0: 2013-11

The referenced International Standard	The substituted Israeli Standard	Comments
IEC 60825-1	SI 60825 Part 1 – Safety of laser products: Equipment classification and requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60825-1 – Second edition: 2007-03
IEC 60825-2	SI 60825 Part 2 – Safety of laser products: Safety of optical fibre communication systems (OFCS)	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60825-2 – Edition 3.2: 2010-12
IEC 60825-12	SI 60825 Part 2 – Safety of laser products: Safety of free space optical communication systems used for transmission of information	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60825-12 – First Edition: 2004-02
IEC 60947-1: 2004	SI 60947 Part l – Low-voltage switchgear and controlgear: General rules	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60947-1 – Edition 5.0: 2007-06
IEC 60998-1	SI 60998 Part 1 – Connecting devices for low-voltage circuits for household and similar purposes: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60998-1 – Second Edition: 2002-12
IEC 60999-1	SI 60999 Part 1 – Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units: General requirements and particular requirements for clamping units for conductors from 0.2 mm^2 up to 35 mm^2 (included)	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60999-1 – Second Edition: 1999
IEC 60999-2	SI 60999 Part 2 – Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units: Particular requirements for clamping units for conductors above 35 mm^2 up to 300 mm^2 (included)	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 60999-2 – Second Edition: 2003-05

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The referenced International Standard	The substituted Israeli Standard	Comments
IEC 61058-1: 2000	SJ 61058 Part l - Switches for appliances: General requirements	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 61058-1 – Edition 3.2: 2008-04
IEC 62471: 2006	SI 62471 – Photobiological safety of lamps and lamp systems	The Israeli Standard, excluding national modifications and additions, is identical to the International Electrotechnical Commission Standard IEC 62471 (CIE S 009: 2002) – First edition: 2006-07
ISO 262	SI 876 – ISO general purpose metric screw thread: Basic dimension and selected sizes for screws	The Israeli Standard is based on the International Organization for Standardization publications ISO R 724 - 1968 ISO 262 - 1973
ISO 3864 (all parts) [(a)]	SI 3864 Part l – Graphic symbols – Safety colours and safety signs: Design principles for safety signs in workplaces and public areas	The Israeli Standard, excluding national modifications and additions, is identical to the International Organization for Standardization Standard ISO 3864-1: First edition: 2002-05-15
Notes: (a) In the International Standard series, there are parts not yet adopted as Israeli Standards. This table notes the existing Israeli Standards, and in the Comments column, the corresponding parts of the International Standard series. (b) Not relevant to the translation.		

The following shall be added to the annex:	
Israeli Standards	
SI 32 Part 1.1	Plugs and socket-outlets for household and similar purposes: Plugs and socket-outlets for single phase up to 16A – General requirements
SI 961 Part 6.1	Electromagnetic compatibility: Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement
SI 961 Part 6.2	Electromagnetic compatibility: Information technology equipment – Immunity characteristics - Limits and methods of measurement
SI 961 Part 12.3	Electromagnetic compatibility: Limits – Limits for harmonic current emissions (equipment input current ≦16 A per phase)
SI 961 Part 12.5	Electromagnetic compatibility: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≦ 16 A per phase and subject to conditional connection
SI 961 Part 12.11	Electromagnetic compatibility: Limits – Limitation of voltage changes voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current ≦ 75 A and subject to conditional connection
SI 961 Part 48 (all parts)	Electromagnetic compatibility: Electromagnetic compatibility (EMC) for radio equipment and services
SI 961 Part 48.1	Electromagnetic compatibility: Electromagnetic compatibility (EMC) for radio equipment and services – Common technical requirements
SI 61000 Part 3.12	Electromagnetic compatibility: Limits – Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and ≦ 75 A per phase

Israeli Laws, Regulations and documents Electricity Law, 1954, with its Regulations and updates Consumer Protection Order (Marking of goods), 1983, Kovetz HaTakanot 4465 dated 1983-02-24, with its updates Electricity Regulations (Earthings and protective means against electrification for voltages up to 1,000 V), 1991, with their updates Energy Sources Regulations (Maximum electrical power in standby mode for domestic and office electrical appliances), 2011, with its updates	
European Standards	
EN 301 489 (all parts)	Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services

ENERGY STAR CERTIFIED

Displays

Lenovo - T24i-30 : A22238FT0

Specifications

ENERGY STAR Unique ID:	2398658
Brand Name:	Lenovo
Model Name:	T24i-30
Model Number:	A22238FT0
Product Type:	Monitor
Panel Type:	TFT LCD
Screen Size (inches):	23.8
Screen Area (square inches):	242.18
Native Resolution (pixels):	1920 x 1080
Maximum Luminance (candelas per square meter):	250.0
Total Native Resolution (megapixels):	2.1
Model Features:	None
Signal or Data Interfaces:	VGA,Display,HDMI,USB
Power Source:	Ac to dc internal power supply
Monitor Total Energy Consumption at 115 Volts (kWh/yr):	37.47
On Mode Power (watts):	11.68
Markets:	United States, Taiwan, Japan, Canada
Sleep Mode Power (watts):	0.29
Off Mode Power (watts):	0.27
ENERGY STAR Certified:	Yes
ENERGY STAR Most Efficient:	No

Additional Model Information

P24i-30,A22238FT0,; TIO Flex 24i,A22238FT0,

UPC Codes	196379715079

Captured On:
02/22/2023

BRAND NAME	Lenovo
SALES NAME	T24i-30
MODEL NAME	A22238**0
DISPLAY SIZE	23.8"
ASPECT RATIO	16:9
MAXIMUM RESOLUTION	1920x1080
TYPE OF STAND	Pivot
SEPARATE POWER SUPPLY	No
TCO CERTIFIED	TCO Certified Edge Displays
CERTIFICATE NUMBER	DE22084051
CERTIFICATION DATE	2022-08-03
CERTIFICATE VALID UNTIL	2023-08-03
COMMENT	For products delivered without stand, the emission A.4.1 & A.4.2 is not covered; Edge criteria fulfilled: Minimum 85 % recycled plastics;

CREATE ACCOUNT

ALREADY REGISTERED? LOG IN

Register for more info

Create an account to get access to all information

Examples of the information you will gain access to

- Battery cycles
- % of recycled plastic
- Sound levels

CREATE ACCOUNT LOG IN

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ECMA/TC38-TG3/2015/026
(Rev. 1 – 15 April 2015)

Annex B2 - Product environmental attributes
Computer Monitors

The declaration may be published only when all rows and/or fields marked with * are filled-in (n.a. for not applicable).
Additional information regarding each item may be found under P15.

Brand *	***Lenovo***	**Logo**
Company name *	***Lenovo***	
Contact information * **e-mail address**	***Lenovo Global Environmental Affairs*** ***Alvin L Carter*** **alcarter@lenovo.com**	
Internet site *	***https://www.lenovo.com/us/en/sustainability-resources/***	
Additional information		

The company declares (based on product specification or test results based obtained from sample testing), that the product conforms to the statements given in this declaration.	
Type of product *	***Monitor***
Commercial name *	***ThinkVision T24i-30&P24i-30&TIO Flex 24i***
Model number *	***63CF,63BE,12BM***
Issue date *	***2022/7/1***
Intended market *	☒ **Global** ☐ **Europe** ☐ **Asia, Pacific & Japan** ☐ **Americas** ☐ **Other**
Additional information	

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

About Annex B2

Annex B2 reflects Product environmental attributes relevant for Computers and Computer Monitors. The following items from the ECMA-370 Main body are not shown in the template:
P4.1 – P4.3 Consumable materials
P9.1 TEC and Print speed
P10.2 - P10.3 Chemical emissions from printing products
P11.1 - P11.3 Consumable materials for printing products.

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Model number *	*63CF,63BE,12BM*	**Logo**	Lenovo
Issue date *	*2022/7/1*		

Product environmental attributes - Legal requirements		**Requirement met**		
Item		Yes	No	n.a.
P1	**Hazardous substances and preparations**			
P1.1*	Products do comply with current European RoHS Directive. (See legal reference and NOTE B1)	☒	☐	
P1.2*	Products do not contain Asbestos (see legal reference). Comment: Legal reference has no maximum concentration value.	☒	☐	
P1.3*	Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	
P1.4*	Products do not contain more than; 0,005% polychlorinated biphenyl (PCB), 0,005% polychlorinated terphenyl (PCT) in preparations (see legal reference).	☒	☐	
P1.5*	Products do not contain more than 0,1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP (see legal reference).	☒	☐	
P1.6*	Parts with direct and prolonged skin contact do not release nickel in concentrations above 0,5 μg/cm^2/week (see legal reference). Comment: Max limit in legal reference when tested according to EN1811:2011-5.	☒	☐	☐
P1.7*	REACH Article 33 information about substances in articles is available at (add URL or mail contact): ***https://www.lenovo.com/us/en/Lenovo-REACH-SVHC-Disclosure***	☒	☐	☐
P2	**Batteries**			
P2.1*	If the product contains a battery or an accumulator, the battery/accumulator is labeled with the disposal symbol. Information on proper disposal is provided in user manual. (See legal reference)	☐	☐	☒
P2.2*	Batteries or accumulators do not contain more than 0,0005% of mercury or 0,002% of cadmium. (See legal reference)	☐	☐	☒
P2.3*	Batteries and accumulators are readily removable. (See legal reference)	☐	☐	☒
P3	**Conformity verification & Eco design (ErP)**			
P3.1*	The product is CE-marked to show conformance with applicable legal requirements (see legal reference). The Declaration of Conformity can be requested at (add link or e-mail address): ***https://www.lenovo.com/us/en/compliance/eu-doc for EU and*** ***https://www.lenovo.com/us/en/compliance/uk-doc for UK***	☒	☐	☐
P3.2*	The product complies with the Eco design requirements for energy-related products, (see legal reference).	☒	☐	☐
	Required information is; ☐ given in item P15 or added to this document, ☒ available at (add URL): ***https://www.lenovo.com/us/en/compliance/eco-declaration***	☒	☐	☐
P5	**Product packaging**			
P5.1*	Packaging and packaging components do not contain more than 0,01% lead, mercury, cadmium and hexavalent chromium by weight of these together.	☒	☐	
P5.2*	The packaging materials are marked with abbreviations and numbers indicating the nature of the material(s) used (see legal reference).	☒	☐	☐
P5.3*	The product packaging material is free from ozone depleting substances as specified in the Montreal Protocol (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	☐
P6	**Treatment information**			
P6.1*	Information for recyclers/treatment facilities is available (see legal reference).	☒	☐	☐

NOTE B1 Restriction applies to the homogeneous material, unless other specified and expressed in weight %. Stating "Yes" means that the product is compliant with the mandatory requirements.

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Model number *	***63CF,63BE,12BM***	**Logo**	Lenovo
Issue date *	***2022/7/1***		

Product environmental attributes - Market requirements (See General NOTE GN below) **- Environmental conscious design**		**Requirement met**		
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.	Yes	No	n.a.
P7	**Design** **Disassembly, recycling**			
P7.1*	Parts that have to be treated separately are easily separable	☒	☐	☐
P7.2*	Plastic materials in covers/housing have no surface coating.	☒	☐	☐
P7.3*	Plastic parts > 100 g consist of one material or of easily separable materials.	☒	☐	☐
P7.4*	Plastic parts > 25 g have material codes according to ISO 11469 referring ISO 1043-4.	☒	☐	☐
P7.5	Plastic parts are free from metal inlays or have inlays that can be removed with commonly available tools.	☒	☐	☐
P7.6*	Labels are easily separable. (This requirement does not apply to safety/regulatory labels).	☒	☐	☐
	Product lifetime			
P7.7*	Upgrading can be done e.g. with processor, memory, cards or drives	☐	☐	☒
P7.8*	Upgrading can be done using commonly available tools	☐	☐	☒
P7.9	Spare parts are available after end of production for: ***5*** years			☐
P7.10	Service is available after end of production for: ***5*** years			☐
	Material and substance requirements			
P7.11*	Product cover/housing material type (e.g. plastics, metal, aluminum): Material type: ***ABS*** Material type: ***PC*** Material type:			
P7.12	Insulation materials of external electrical cables are PVC free.	☐	☒	☐
P7.13	Insulation materials of internal electrical cables are PVC free.	☐	☒	☐
P7.14	External plastic casing/cover parts > 25 g contain no more than 0,1% weight (1000 ppm) bromine and 0,1% weight (1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame retardants, and polyvinyl chloride or 0,3% weight (3000 ppm) bromine and 0,3% weight (3000 ppm) chlorine in parts containing more than 25% post-consumer recycled content.	☒	☐	☐
P7.15	Printed circuit boards, PCBs (without components) are low halogen: all ☒ PCBs > 25 g ☐ are low halogen as defined in IEC 61249-2-21. (See 1NOTE B2)	☐	☒	☐
P7.16	Flame retarded plastic parts > 25 g in covers / housings are marked according ISO 1043-4: Marking:	☐	☒	☐
P7.17	Alt. 1: Chemical specifications of flame retardants in printed circuit boards > 25 g (without components): ☐ TBBPA (additive), ☒ TBBPA (reactive) (See NOTE B3), ☐ Other:, CAS #:	☒	☐	☐
	Alt. 2: Chemical specifications of flame retardants in printed circuit boards (without components) > 25 g according ISO 1043-4:	☐	☐	☒
P7.18	Alt. 1: Flame retarded plastic parts > 25 g contain the following flame retardant substances/preparations in concentrations above 0,1%: 1. Chemical name: , CAS #: (See NOTE B4) 2. Chemical name: , CAS #: " 3. Chemical name: , CAS #: "	☐	☐	☒
	Alt. 2: Chemical specifications of flame retardants in plastic parts > 25 g according ISO 1043-4:	☐	☐	☒
P7.19	In plastic parts > 25 g, flame retardant substances/preparations above 0,1% are used which have been assigned the following Risk phrases; and Hazard statements: The source(s) for these classifications is/are found at (add URL(s)): , (See note B5)	☐	☐	☒
P7.20*	Postconsumer recycled plastic material content is used in the product (See Note B6): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the postconsumer recycled plastic material content (calculated as a percentage of total plastic by weight) is ***81.61 %. (EPEAT calculation) / 85% (TCO calculation)*** or b) The weight of recycled material is ***705.55***g.	☒	☐	☐

GENERAL NOTE Standard references should direct to the latest version of a standard. If an older version of a standard is used, section P15 shall be used for explanation.

NOTE B2 IEC 61249-2-21 defines maximum limits of 900 ppm for each of the substances chlorine and bromine and a maximum limit of 1500ppm of these substances combined. The standard does not address fluorine, iodine and astatine which are included in the group of halogens.

NOTE B3 and B4 A Guidance document on Chemical substances is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm

NOTE B5 If a certain substance has been assigned a certain risk phrases / hazard statement in the referenced source, this does not necessarily mean the substance has been tested for all of the hazards referred to by a certain customer.

NOTE B6 Applies to a product containing plastic parts whose combined weight exceeds 100 g with the exception of printed circuit boards, cables, connectors and electronic components and bio-based plastic material.

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Model number *	63CF,63BE,12BM	Logo	Lenovo
Issue date *	2022/7/1		

Product environmental attributes - Market requirements (continued)	Requirement met		
Item	Yes	No	n.a.

	Material and substance requirements (continued)			
P7.21*	Biobased plastic material content is used in the product (See NOTE B7): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the biobased plastic material content (calculated as a percentage of total plastic by weight) is 0%. or b) The weight of the biobased plastic material is 0g.	☐	☒	☐
P7.22*	Light sources are free from mercury, i.e. less than 0,1 mg/lamp. If mercury is used specify: Number of lamps: and maximum mercury content per lamp: mg	☒	☐	☐
P8	**Batteries**			
P8.1*	Battery chemical composition:			☒
P9	**Energy consumption (See NOTE B8)**			
P9.1	For the product the following power levels or energy consumptions are reported:			

Energy mode *	Power level at 100V 50HzAC	Power level at 100V /60Hz	Power level at **115** V AC	Power level at **230** V AC	Reference/Standard for energy modes and test method *
ENERGY STAR® On Mode* (System Idle)	**11.75**	**11.74**	**11.68**	**11.68**	***ENERGY STAR® Program Requirements for Displays: Ver. 8.0***
ENERGY STAR® Low Power Sleep Mode*	**0.29**	**0.29**	**0.29**	**0.33**	***ENERGY STAR® Program Requirements for Displays: Ver. 8.0***
ENERGY STAR® Off / Apparent Off Mode*	**0.27**	**0.27**	**0.29**	**0.31**	***ENERGY STAR® Program Requirements for Displays: Ver. 8.0***
PTEC * Typical Energy Consumption	W	W	W	W	☒
ETEC * Annual Energy Consumption	***37.68***kWh /year	***37.65***kWh /year	***37.46*** kWh/year	***37.69***kWh/year	E_{TEC} = 8.76x (0.35xPon +0.65x Psleep) ☐
External Power Supply Efficiency Level (International Efficiency Marking Protocol) * :					☒
Display resolution* : ***1920*1080*** megapixels					ENERGY STAR® Program Requirements for Computer Monitors: Ver. 8.0
Default time to enter energy save mode: 15 seconds					ENERGY STAR® Program Requirements for Computer Monitors: Ver. 8.0

P9.2*	Information about the energy save function is provided with the product.	☒	☐	☐
P9.3*	The product meets the energy requirements of the following voluntary program/s: ENERGY STAR® version: 8.0 Product category: **Display**.	☒	☐	☐

P10	**Emissions**		
	Noise emission – Declared according to ISO 9296 (See NOTE B9)		
P10.1	Mode	Mode description	Statistical upper limit A-weighted sound power level, $L_{WA,c}$ (B)
	Idle	* ***HDD: Idle***	* ☒
	Operation	* ***HDD: Operating***	* ☒
	Other mode	***Declared A-weighted sound pressure level (dB)*** L_{pAm}	***(operator position desktop – idle)***
	Other mode	***Declared A-weighted sound pressure level (dB)*** L_{pAm}	***(operator position desktop – operating)***
	Measured according to: ☒ ISO 7779 ☐ ECMA-74 ☐ Other (only if not covered by ECMA-74)		

NOTE B7 The following is to be excluded from the calculation of percentage: printed circuit boards, labels, cables, connectors and electronic components and postconsumer recycled plastic

NOTE B8 A Guidance document on Energy Efficiency is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm

NOTE B9 A Guidance document on Acoustic Noise is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm

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Model number *	63CF,63BE,12BM	Logo	Lenovo
Issue date *	2022/7/1		

Product environmental attributes - Market requirements (continued)		Requirement met		
Item		Yes	No	n.a.
	Electromagnetic emissions			
P10.4	Computer display meets the requirement for low frequency electromagnetic fields of the following voluntary program(s):	☐	☒	☐
P12	**Ergonomics for computing products**			
P12.1*	The display meets the ergonomic requirements of ISO 9241-307 for visual display technologies.	☒	☐	☐
P12.2*	The physical input device meets the requirements of ISO 9995 and ISO 9241-410.	☐	☐	☒
P13	**Packaging and documentation**			
P13.1*	Product packaging material type(s): ***Corrugated - Double Wall*** weight (kg): ***1.080*** Product packaging material type(s): ***Molded Pulp*** weight (kg): ***0.370*** Product packaging material type(s): ***Cardboard*** weight (kg): ***0.400*** Product packaging material type(s): ***LDPE Bag*** weight (kg): ***0.025***			
P13.2*	Product plastic primary packaging is free from PVC.	☒	☐	☐
P13.3*	For product primary corrugated fiberboard packaging, specify the contained percentage of minimum post-consumer recovered fiber content: ***90***%			☐
P13.4*	Specify media for user and product documentation (tick box): ☒ Electronic, ☒ Paper, ☐ Other			☐
P13.5	(Please only complete this item if paper documentation used) User and product documentation on paper media is chlorine-free: If Yes, please specify:	☒	☐	
	Totally chlorine-free	☒		
	Elemental chlorine-free	☐		
	Processed chlorine-free	☐		
P14	**Voluntary programs**			
P14.1	The product meets the requirements of the following voluntary program(s): ENERGY STAR® Criteria version: ***8.0*** Date: ***2022/7/19*** Product category: TCO Criteria version: ***TCO9*** Date: ***2022/8/3*** Product category: Eco-label: Criteria version: Date: Product category:			
P15	**Additional information (See NOTE B10)**			
P9	***Energy consumption of specific configuration may vary; description of the tested product configuration:***			
	NOTE: Supplier makes no representations, guarantees, assurances or warranties whether express or implied, regarding the information contained in this document. All information provided by supplier in this document is provided based on supplier's knowledge available at the time of completion, and supplier shall have no obligation to update such information. The information provided here is approximate and provided for informational purposes only. See a Lenovo Account Representative for more information.			
P9	***See Energy Star Qualified Monitors & Displays for the latest information: https://www.energystar.gov/products/office_equipment/displays***			

NOTE B10 Additional lines may be inserted to declare further items, by positioning the cursor at the far right of the row and hitting the <Enter> key.

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Legal references Europe Annex B2

Reference	Declaration item
Directive 2011/65/EU (RoHS Directive) * * Specific exemptions apply for certain products and applications.	P1.1
Regulation (EC) 1907/2006(REACH, Annex XVII	P1.2, P1.4, P1.6, P1.7
Regulation (EC) 2037/2000, 2038/2000, 2039/2000 (Marketing and use of Ozone layer depleting substances)	P1.3, P5.3
Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002	P1.5
Directive 2013/56/EC (Battery and accumulators Directive) * * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	P2.1, P2.2, P2,3, P8.1
Directive 2006/95/EC (Low Voltage Directive)	P3.1
Directive 2004/108/EC (EMC Directive)	P3.1
Directive 1999/5/EC (R&TTE Directive)	P3.1
Regulation (EC) 801/2013 amending Regulation (EC) No 1275/2008 with regard to ecodesign requirements for standby, off mode electric power consumption of electrical and electronic household and office equipment, and amending Regulation (EC) No 642/2009 with regard to ecodesign requirements for televisions	P3.1, P3.2
Regulation（EC）No 1272/2008 (CLP Regulation)	P7.19
Directive 2004/12/EC (Packaging Directive)	P5.1
Decision 97/129/EC (Secondary packaging legislation)	P5.2
Directive 2012/19/EU (WEEE directive)	P6.1

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 566

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São Paulo, 27 de junho de 2025.

À
E.R. SOLUÇÕES INFORMÁTICA LTDA

A **LENOVO TECNOLOGIA (BRASIL) LTDA.** ("Lenovo"), pessoa jurídica de direito privado, inscrita no CNPJ/MF sob o nº 07.275.920/0001-61, com escritório administrativo estabelecido na Rua Werner Von Siemens, 111 — Prédio 11 / Torre A — 3º e 4º andar— Bairro da Lapa — São Paulo / SP - CEP 05069-900, **DECLARA** que a empresa **E.R. SOLUÇÕES INFORMÁTICA LTDA**, inscrita no CNPJ/MF sob o nº **05.778.325/0005-47** , sediada na **AV. CEM S/N - SERRA - ES,** está cadastrada nos sistemas internos da Lenovo como revenda autorizada, estando apta a comercializar os produtos abaixo discriminados:

Família	Part Number	Garantia/SLA
ThinkCentre M70Q Gen 5	**13E2CTO1WW**	**Garantia de 60 meses on site - 5WS0T36190 + Retenção HD 60 meses on site - 5PS0K26186 + Danos Acidentais 60 meses on site - 5PS0Q13075**
ThinkCentre M70Q Gen 5	**12TGCTO1WW**	**Garantia de 60 meses on site - 5WS0T36190 + Retenção HD 60 meses on site - 5PS0K26186 + Danos Acidentais 60 meses on site - 5PS0Q13075**
ThinkVision TIO24 Gen 5	**12NAGAR1US**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkVision T24i-30	**63CFMAR1BR**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkStation P3 Tower	**30GUCTO1WW**	**Garantia de 60 meses on site - 5WS1F52293 + Retenção HD 60 meses on site - 5PS0Q11741 + Danos Acidentais 60 meses on site - 5PS0Q25585**
ThinkVision T27HV-30	**63D6UAR3US**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkVision T27I-30	**63A4MAR1BR**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkPad E14 Intel Gen 6	**21M8CTO1WW**	**Garantia de 60 meses on site - 5WS1C98064 + Retenção HD 60 meses on site - 5PS0K27099 + Danos Acidentais 60 meses on site - 5PS0K27092 + Bateria 36 meses - 5WS0L01988**
ThinkPad P16v Gen 2	**21KYCTO1WW**	**Garantia de 60 meses on site - 5WS1H31751 + Retenção HD 60 meses on site - 5PS1H31796 + Danos Acidentais 60 meses on site - 5PS1H31752 + Bateria 36 meses - 5WS1H31713**
ThinkCentre M70Q Gen 5	**13E2CTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39013**
ThinkCentre M70Q Gen 5	**12TGCTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39013**
ThinkStation P3 Tower	**30GUCTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39164**
ThinkPad E14 Intel Gen 6	**21M8CTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39126**
ThinkPad P16v Gen 2	**21KYCTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1M88187**

A Lenovo declara ainda que os produtos acima citados:

- Teclado no padrão ABNT2 Português.
- Cpu, teclado, mouse e monitor possuem mesmo padrão de cor e são de fabricação Lenovo.
- Placa mãe fabricada para uso exclusivo
- BIOS com direitos copyright.
- Componentes do produto são novos (sem uso, reforma ou recondicionamento) e produtos pertencentes à Linha Corporativa.
- Os equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, que utilizam materiais recicláveis.
- Os produtos estão em linha de produção sem previsão de encerramento antes de 90 dias.
- Possuem BIOS desenvolvida pela Lenovo em Flash Memory onde somos responsáveis por atualizações e manutenções, em idioma inglês ou português. Implementada em memória Flash-ROM, com suporte plug-and-play, tipo flash EPROM e SMBIOS 2.4.
- Possui Memoria não volátil e reprogramável.
- Possuir recursos de controle de permissão através de senhas.

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- Possibilita que a senha de acesso ao BIOS seja ativada e desativada via SETUP. Suporte a senha de inicialização, Power on, administrador e disco rígido.
- Logo do fabricante na inicialização sendo permitido sua customização, número de série do equipamento gravada na Bios, campo editável que permite inserir identificação customizada como inclusão de identificação e patrimônio, podendo ser consultada e atualizada por software de gerenciamento e via comandos DMI.
- Bios com capacidade de habilitar/desabilitar drivers de entrada e saída, individualmente portas USB, webcam, áudio e microfone.
- Atualização da BIOS por meio de interface gráfica através de utilitário, dentro do sistema operacional ou site do fabricante.
  Em atendimento as diretrizes da lei Nº 12 305/2010, que institui a Política Nacional de Resíduos Sólidos, o fabricante do equipamento será responsável pelo mecanismo de Logística Reversa.
- Suporte ao padrão de gerenciamento DMI 2.0 em conformidade com a especificação UEFI 2.8 e capturáveis pela aplicação de inventário SCCM.
- Suporte a ACPI 6.3 com controle automático de rotação do ventilador da CPU. Monitoramento das velocidades dos coolers, temperatura do processador e tensão utilizada pela fonte Possui sistema de dissipação de calor dimensionado suportando operar por 12 horas diárias.
- Software de Diagnóstico, embarcado no BIOS para diagnóstico de problemas que permite o teste do equipamento, com independência do Sistema Operacional, capaz de ser executado através da tecla função. Capaz de verificar, testar emitir relatório através de tela gráfica com o andamento do teste e informações sobre o fabricante, modelo do equipamento, processador memória, firmware, capacidade do disco.
- Conformidade com a NIST 800 147 nos padrões de criptografia com função integrada para apagar dados do disco rígido de forma segura não permitindo sua recuperação através de ferramentas.
  Em Conformidade NIST 800-88
- A BIOS está em conformidade com a normativa de segurança NIST 800-193 ou ISO/IEC 19678:2015, de maneira a usar métodos de criptografia robusta para verificar a integridade da BIOS antes de passar o controle de execução à mesma;
- Capacidade de desligamento do vídeo e do disco após tempo determinado pelo usuário e religamento por acionamento de teclado ou movimentação do mouse com função de economia de energia para monitor, placa mãe e disco.
- Permite o boot através de unidade de disco óptico, dispositivo USB ou pela rede.
- Permite a replicação da Bios pela rede ou por USB.
- Placa mãe fabricada pela Lenovo, com Lenovo serigrafado na placa, desenvolvida para o mercado corporativo.
  Placa mãe suporta Virtualização baseada em hardware.
- Possui Chip de segurança TPM 2.0 integrado, acompanhado do software capaz de implementar as principais funcionalidades do mesmo.
- Lenovo possui sistema de carregamento de imagens personalizadas, e serviço de gravação de logotipo a laser no gabinete.
- Placa de Rede com tecnologia WOL e PXE 2.1.
- Disco com suporte a tecnologia SMART, e tecnologia redutora de danos ao disco rígido, NCQ e AHCI.
- Placa mãe suporta os padrões de gerenciamento WMI.
- Acompanha cabo de alimentação e plug de acordo com a NBR 14136.
- Todas as fontes são bivolts (100 a 240 V)
- A garantia do monitor ofertado cobre ainda o reparo ou substituição do monitor no caso do aparecimento de no mínimo 3 pixels queimados.
- Suporte ao sistema operacional Linux Ubuntu.
  O Bios mostra as configurações de hardware, possuí modo gráfico interativo por mouse e teclado e possuí no próprio hardware cópia de segurança capaz de restauração automática, permitindo carregar em outro equipamento do mesmo modelo estando com senha ou não.
  O Bios possui gravação de Log de eventos acessíveis pelo BIOS, Sistema Operacional e Software de Gerenciamento.
- Bios reconhece automaticamente os discos rígidos instalados.
- Teclado (TECLA00) - possui proteção contra o derramamento de líquidos;

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- Teclado do Notebook citado possui proteção contra o derramamento de líquidos. Acabamentos feito de materiais não cortantes. Permite que o equipamento seja aberto sem a perda de garantia.
- Possuem a capacidade de funcionalidade de segurança avançada de rastreamento pela internet que, em caso de furto ou extravio, permita recuperação e localização do equipamento.
- O compartilhamento randômico de memória RAM com a placa gráfica integrada pode chegar até 50% do total de memória RAM instalada, com o sistema operacional Windows Pro.
- Equipamentos com Microsoft Windows possuem chave de ativação gravada na Bios.
- O desktop possui função que permite ligar o equipamento através de uma combinação de teclas no teclado conectado através de porta USB.
- Conectores integrados à placa-mãe identificados no padrão de cores PC'99 System Design Guide.
- Bios possui capacidade de proteção da memória flash contra gravação.
- Possui função de teste do equipamento, com independência do sistema operacional instalado, capaz de ser executado a partir da UEFI, através do acionamento da tecla função (F1...F12). Este teste verifica, mostra o andamento e emite relatório de componentes, como processador, memória, disco rígico, etc.
- Equipamentos que possuem RJ-45, a interface de rede é compatível com os padrões Ethernet, Fast-Ethernet e Gigabit Ethernet, autosense, full-duplex e plug-and-play, configurável totalmente por software, com função wake-on-lan instalada e em funcionamento, PXE 2.1, TCP/IP/UDP Checksum Offload e RSS (Receive Side Scailling), operando em 10/100/1000 Mbps de forma automática.
- Garantia onsite com atendimento 9x5 (nove horas por cinco dias úteis).
- A substituição das peças estão inclusas durante o prazo de garantia.
- O atendimento pela Assistência Técnica (tempo de solução de um chamado técnico para a definitiva solução) será conforme o edital.
- A garantia não será afetada caso a Contratante venha a instalar placas de rede local, de fax-modem, interfaces específicas para acionamento de outros equipamentos, adicionar unidades de disco rígido, bem como se alterar a capacidade de memória RAM do equipamento, ressaltando que a garantia destes opcionais será total responsabilidade da Contratante.
- O Desktop SFF suporta o peso do monitor quando está na horizontal.
- Para o processo listado, os equipamentos possuem as seguintes fontes:
- -TIO24+M70Q: possuir eficiência igual ou superior a 89%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);
- -P3 Tower: possuir eficiência igual ou superior a 92%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);
- -E14 Intel G6: possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);
- -P16v G2: possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);

- Assistências Técnicas:
- -Regional Manaus - Sede: Manaus - Rua Paracaima, n° 120, Novo Israel, Manaus - AM - Tel.: (92) 98125-1119

- https://support.lenovo.com/br/pt

- O número 0800-701-4815 é o telefone do suporte técnico da Lenovo para os produtos ThinkVision, ThinkPad, ThinkCentre, ThinkStation e ThinkServer.

A Lenovo é responsável pelo atendimento "on site" da garantia padrão dos equipamentos, conforme o Termo de Garantia Padrão da Lenovo, mediante assistência técnica devidamente autorizada e credenciada.

A Garantia adicional/SLA deve ser previamente adquirida pela Revenda, mediante os termos de extensão da Garantia dos produtos.

Para acesso a certificações e quaisquiser outras informações sobre os produtos acima listados, podem ser consultadas no site: https://psref.lenovo.com

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Para acesso a Drivers, atualizações, Software, Diagnósticos, Catálogos, Manuais e Guia de Instalação, podem ser consultados no site: https://pcsupport.lenovo.com/br/pt

Os drivers, atualizações e suporte dos produtos Lenovo estão disponíveis para download, e busca das autorizadas técnicas Lenovo mais próxima no site: https://pcsupport.lenovo.com/br/en/partnerlocator#providerProductName

A Lenovo dispõe de telefone gratuito 0800-701-4815 (ligações fora da cidade de São Paulo) para abertura de chamados técnicos em Língua Portuguesa e service desk.

A presente declaração foi emitida por solicitação da **E.R. SOLUÇÕES INFORMÁTICA LTDA** para atendimento ao Edital **94010/2025**, promovido pela **PROCURADORIA GERAL DE JUSTIÇA DO ESTADO DO AMAZONAS - MPAM.**

Atenciosamente,

Assinado por:
Valter Artea
91541403867D44E...

DocuSigned by:
Maurício Misumi
9359B24D385E4FE...

Valter Artea **Maurício Misumi**

LENOVO TECNOLOGIA (BRASIL) LTDA.

Docusign Envelope ID: 584A497D-0AF3-4A88-9365-C6BBBAB81E01

São Paulo, 27 de junho de 2025.

À
E.R. SOLUÇÕES INFORMÁTICA LTDA

A **LENOVO TECNOLOGIA (BRASIL) LTDA.** ("Lenovo"), pessoa jurídica de direito privado, inscrita no CNPJ/MF sob o nº 07.275.920/0001-61, com escritório administrativo estabelecido na Rua Werner Von Siemens, 111 — Prédio 11 / Torre A — 3º e 4º andar— Bairro da Lapa — São Paulo / SP - CEP 05069-900, **DECLARA** que a empresa **E.R. SOLUÇÕES INFORMÁTICA LTDA**, inscrita no CNPJ/MF sob o nº **05.778.325/0005-47** , sediada na **AV. CEM S/N - SERRA - ES,** está cadastrada nos sistemas internos da Lenovo como revenda autorizada, estando apta a comercializar os produtos abaixo discriminados:

Família	Part Number	Garantia/SLA
ThinkCentre M70Q Gen 5	**13E2CTO1WW**	**Garantia de 60 meses on site - 5WS0T36190 + Retenção HD 60 meses on site - 5PS0K26186 + Danos Acidentais 60 meses on site - 5PS0Q13075**
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ThinkVision TIO24 Gen 5	**12NAGAR1US**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkVision T24i-30	**63CFMAR1BR**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
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ThinkVision T27HV-30	**63D6UAR3US**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkVision T27I-30	**63A4MAR1BR**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkPad E14 Intel Gen 6	**21M8CTO1WW**	**Garantia de 60 meses on site - 5WS1C98064 + Retenção HD 60 meses on site - 5PS0K27099 + Danos Acidentais 60 meses on site - 5PS0K27092 + Bateria 36 meses - 5WS0L01988**
ThinkPad P16v Gen 2	**21KYCTO1WW**	**Garantia de 60 meses on site - 5WS1H31751 + Retenção HD 60 meses on site - 5PS1H31796 + Danos Acidentais 60 meses on site - 5PS1H31752 + Bateria 36 meses - 5WS1H31713**
ThinkCentre M70Q Gen 5	**13E2CTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39013**
ThinkCentre M70Q Gen 5	**12TGCTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39013**
ThinkStation P3 Tower	**30GUCTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39164**
ThinkPad E14 Intel Gen 6	**21M8CTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39126**
ThinkPad P16v Gen 2	**21KYCTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1M88187**

A Lenovo declara ainda que os produtos acima citados:

- Teclado no padrão ABNT2 Português.
- Cpu, teclado, mouse e monitor possuem mesmo padrão de cor e são de fabricação Lenovo.
- Placa mãe fabricada para uso exclusivo
- BIOS com direitos copyright.
- Componentes do produto são novos (sem uso, reforma ou recondicionamento) e produtos pertencentes à Linha Corporativa.
- Os equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, que utilizam materiais recicláveis.
- Os produtos estão em linha de produção sem previsão de encerramento antes de 90 dias.
- Possuem BIOS desenvolvida pela Lenovo em Flash Memory onde somos responsáveis por atualizações e manutenções, em idioma inglês ou português. Implementada em memória Flash-ROM, com suporte plug-and-play, tipo flash EPROM e SMBIOS 2.4.
- Possui Memoria não volátil e reprogramável.
- Possuir recursos de controle de permissão através de senhas.

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- Possibilita que a senha de acesso ao BIOS seja ativada e desativada via SETUP. Suporte a senha de inicialização, Power on, administrador e disco rígido.
- Logo do fabricante na inicialização sendo permitido sua customização, número de série do equipamento gravada na Bios, campo editável que permite inserir identificação customizada como inclusão de identificação e patrimônio, podendo ser consultada e atualizada por software de gerenciamento e via comandos DMI.
- Bios com capacidade de habilitar/desabilitar drivers de entrada e saída, individualmente portas USB, webcam, áudio e microfone.
- Atualização da BIOS por meio de interface gráfica através de utilitário, dentro do sistema operacional ou site do fabricante.
  Em atendimento as diretrizes da lei Nº 12 305/2010, que institui a Política Nacional de Resíduos Sólidos, o fabricante do equipamento será responsável pelo mecanismo de Logística Reversa.
- Suporte ao padrão de gerenciamento DMI 2.0 em conformidade com a especificação UEFI 2.8 e capturáveis pela aplicação de inventário SCCM.
- Suporte a ACPI 6.3 com controle automático de rotação do ventilador da CPU. Monitoramento das velocidades dos coolers, temperatura do processador e tensão utilizada pela fonte Possui sistema de dissipação de calor dimensionado suportando operar por 12 horas diárias.
- Software de Diagnóstico, embarcado no BIOS para diagnóstico de problemas que permite o teste do equipamento, com independência do Sistema Operacional, capaz de ser executado através da tecla função. Capaz de verificar, testar emitir relatório através de tela gráfica com o andamento do teste e informações sobre o fabricante, modelo do equipamento, processador memória, firmware, capacidade do disco.
- Conformidade com a NIST 800 147 nos padrões de criptografia com função integrada para apagar dados do disco rígido de forma segura não permitindo sua recuperação através de ferramentas.
  Em Conformidade NIST 800-88
- A BIOS está em conformidade com a normativa de segurança NIST 800-193 ou ISO/IEC 19678:2015, de maneira a usar métodos de criptografia robusta para verificar a integridade da BIOS antes de passar o controle de execução à mesma;
- Capacidade de desligamento do vídeo e do disco após tempo determinado pelo usuário e religamento por acionamento de teclado ou movimentação do mouse com função de economia de energia para monitor, placa mãe e disco.
- Permite o boot através de unidade de disco óptico, dispositivo USB ou pela rede.
- Permite a replicação da Bios pela rede ou por USB.
- Placa mãe fabricada pela Lenovo, com Lenovo serigrafado na placa, desenvolvida para o mercado corporativo.
  Placa mãe suporta Virtualização baseada em hardware.
- Possui Chip de segurança TPM 2.0 integrado, acompanhado do software capaz de implementar as principais funcionalidades do mesmo.
- Lenovo possui sistema de carregamento de imagens personalizadas, e serviço de gravação de logotipo a laser no gabinete.
- Placa de Rede com tecnologia WOL e PXE 2.1.
- Disco com suporte a tecnologia SMART, e tecnologia redutora de danos ao disco rígido, NCQ e AHCI.
- Placa mãe suporta os padrões de gerenciamento WMI.
- Acompanha cabo de alimentação e plug de acordo com a NBR 14136.
- Todas as fontes são bivolts (100 a 240 V)
- A garantia do monitor ofertado cobre ainda o reparo ou substituição do monitor no caso do aparecimento de no mínimo 3 pixels queimados.
- Suporte ao sistema operacional Linux Ubuntu.
  O Bios mostra as configurações de hardware, possuí modo gráfico interativo por mouse e teclado e possuí no próprio hardware cópia de segurança capaz de restauração automática, permitindo carregar em outro equipamento do mesmo modelo estando com senha ou não.
  O Bios possui gravação de Log de eventos acessíveis pelo BIOS, Sistema Operacional e Software de Gerenciamento.
- Bios reconhece automaticamente os discos rígidos instalados.
- Teclado (TECLA00) - possui proteção contra o derramamento de líquidos;

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- Teclado do Notebook citado possui proteção contra o derramamento de líquidos. Acabamentos feito de materiais não cortantes. Permite que o equipamento seja aberto sem a perda de garantia.
- Possuem a capacidade de funcionalidade de segurança avançada de rastreamento pela internet que, em caso de furto ou extravio, permita recuperação e localização do equipamento.
- O compartilhamento randômico de memória RAM com a placa gráfica integrada pode chegar até 50% do total de memória RAM instalada, com o sistema operacional Windows Pro.
- Equipamentos com Microsoft Windows possuem chave de ativação gravada na Bios.
- O desktop possui função que permite ligar o equipamento através de uma combinação de teclas no teclado conectado através de porta USB.
- Conectores integrados à placa-mãe identificados no padrão de cores PC'99 System Design Guide.
- Bios possui capacidade de proteção da memória flash contra gravação.
- Possui função de teste do equipamento, com independência do sistema operacional instalado, capaz de ser executado a partir da UEFI, através do acionamento da tecla função (F1...F12). Este teste verifica, mostra o andamento e emite relatório de componentes, como processador, memória, disco rígico, etc.
- Equipamentos que possuem RJ-45, a interface de rede é compatível com os padrões Ethernet, Fast-Ethernet e Gigabit Ethernet, autosense, full-duplex e plug-and-play, configurável totalmente por software, com função wake-on-lan instalada e em funcionamento, PXE 2.1, TCP/IP/UDP Checksum Offload e RSS (Receive Side Scailling), operando em 10/100/1000 Mbps de forma automática.
- Garantia onsite com atendimento 9x5 (nove horas por cinco dias úteis).
- A substituição das peças estão inclusas durante o prazo de garantia.
- O atendimento pela Assistência Técnica (tempo de solução de um chamado técnico para a definitiva solução) será conforme o edital.
- A garantia não será afetada caso a Contratante venha a instalar placas de rede local, de fax-modem, interfaces específicas para acionamento de outros equipamentos, adicionar unidades de disco rígido, bem como se alterar a capacidade de memória RAM do equipamento, ressaltando que a garantia destes opcionais será total responsabilidade da Contratante.
- O Desktop SFF suporta o peso do monitor quando está na horizontal.
- Para o processo listado, os equipamentos possuem as seguintes fontes:
- -TIO24+M70Q: possuir eficiência igual ou superior a 89%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);
- -P3 Tower: possuir eficiência igual ou superior a 92%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);
- -E14 Intel G6: possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);
- -P16v G2: possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);

- Assistências Técnicas:
- -Regional Manaus - Sede: Manaus - Rua Paracaima, n° 120, Novo Israel, Manaus - AM - Tel.: (92) 98125-1119

- https://support.lenovo.com/br/pt

- O número 0800-701-4815 é o telefone do suporte técnico da Lenovo para os produtos ThinkVision, ThinkPad, ThinkCentre, ThinkStation e ThinkServer.

A Lenovo é responsável pelo atendimento "on site" da garantia padrão dos equipamentos, conforme o Termo de Garantia Padrão da Lenovo, mediante assistência técnica devidamente autorizada e credenciada.

A Garantia adicional/SLA deve ser previamente adquirida pela Revenda, mediante os termos de extensão da Garantia dos produtos.

Para acesso a certificações e quaisquiser outras informações sobre os produtos acima listados, podem ser consultadas no site: https://psref.lenovo.com

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Para acesso a Drivers, atualizações, Software, Diagnósticos, Catálogos, Manuais e Guia de Instalação, podem ser consultados no site: https://pcsupport.lenovo.com/br/pt

Os drivers, atualizações e suporte dos produtos Lenovo estão disponíveis para download, e busca das autorizadas técnicas Lenovo mais próxima no site: https://pcsupport.lenovo.com/br/en/partnerlocator#providerProductName

A Lenovo dispõe de telefone gratuito 0800-701-4815 (ligações fora da cidade de São Paulo) para abertura de chamados técnicos em Língua Portuguesa e service desk.

A presente declaração foi emitida por solicitação da **E.R. SOLUÇÕES INFORMÁTICA LTDA** para atendimento ao Edital **94010/2025**, promovido pela **PROCURADORIA GERAL DE JUSTIÇA DO ESTADO DO AMAZONAS - MPAM.**

Atenciosamente,

Assinado por:
Valter Artea
91541403867D44E...

DocuSigned by:
Maurício Misumi
9359B24D385E4FE...

Valter Artea **Maurício Misumi**

LENOVO TECNOLOGIA (BRASIL) LTDA.

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CEP 22290-240 Tel.: (21) 2132-5252 Fax: (21) 2132-5082
Internet: www.ibm.com.br CNPJ: 33.372.251/0001-56

DECLARAÇÃO

A IBM Brasil - Indústria, Máquinas e Serviços Ltda., inscrita no CNPJ 11º33.372.251/0001-56, e a PROXXI TECNOLOGIA LTDA, inscrita no CNPJ/MF sob o n.º 47.379.565/0001-95, por intermédio do seu representante legal abaixo assinado, declara para os devidos fins, que prestam serviços de suporte técnico para a Lenovo Tecnologia (Brasil) Ltda, incluindo serviços de instalação e reparos para toda a sua linha de produtos Think (Servidores, Workstation, Desktops, Notebook e Tablet) em todo o território nacional, de acordo com o contrato Master Agreement for Services & MA-14-000138 (the "Master Agreement") e os contratos: SERVICES AGREEMENT SOW & SA-49S1600326 (the "CC&FS SOW") e o contrato SERVICES AGREEMENT SOW SA-49S1600327 the "Parts SOW") firmados entre ambas as partes.
Informamos ainda que possuímos centros de apoio reparos para assegurar atendimento local, na modalidade Centro de Atendimento Técnico do Próprio Fabricante, através de nossas filiais assim distribuídas:

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BAURU	VARGINHA	Praça José Resende, 02 - Terreo - Centro	VARGINHA	MG	14 98136 0984	MARCOS ANTONIO	marcant1@br.ibm.com
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Declara ainda que dispõe de peças de reposição que suportam o atendimento dos chamados técnicos efetuados e toda e qualquer abertura de chamado de produtos em garantia, deve ser efetuada através do número de telefone (11) 3003-2717 para abertura de chamados em São Paulo e 0800-728-7378 para regiões fora de São Paulo.

Tendo também como pessoa para contato o Sr. Rodrigo Franco, Gerente de Vendas, através do telefone (11) 95049-7190 ou pelo email francor@br.ibm.com.

São Paulo, 10 de fevereiro de 2025

Rodrigo Franco
Senior Sales Specialist
Technology Lifecycle Services
IBM / Proxxi

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China Electronics Standardization Institute (CESI) (http://www.en.cesi.cn/)

CXL Consortium (https://www.computeexpresslink.org/)

ETSI-NFV (http://portal.etsi.org/portal/server.pt/community/NFV/367)

HDBaseT (https://hdbaset.org/)

MIPI Alliance (https://www.mipi.org/)

NVM Express (http://nvmexpress.org/)

OMG-Cloud Working Group (http://www.cloud-council.org)

Open Compute Project (OCP) (http://www.opencompute.org/)

Open Data Center Committee (ODCC) (http://www.opendatacenter.cn/)

Open Fabrics Alliance (OFA) (https://www.openfabrics.org/)

Open Grid Forum (http://ogf.org)

OpenInfra Foundation (https://openinfra.dev/)

PCI Industrial Computer Manufacturer Group (PICMG) (https://www.picmg.org/)

PCI-SIG (https://pcisig.com/)

SNIA (http://www.snia.org/)

TeleManagement Forum (http://www.tmforum.org/)

The Green Grid (http://www.thegreengrid.org)

The Open Group (http://www.opengroup.org)

Unified Extensible Firmware Interface (http://www.uefi.org/)

Universal Chiplet Interconnect Express (UCIe) (https://www.uciexpress.org/)

Academic Alliance

"Gheorghe Asachi" Technical University of Iaşi (http://www.tuiasi.ro/en/)

Arizona State University (https://www.asu.edu/)

Athens University of Economics and Business (https://www.aueb.gr/en)

Dongguk University (http://www.dongguk.edu)

Federal Institute of Technology of Espirito Santo (https://www.ufes.br/)

George Mason University (http://c4i.gmu.edu)

Hungarian Academy Of Sciences Institute For Computer Science And Control (https://sztaki.hu/en)

Indian Institute of Technology Roorkee (https://www.iitr.ac.in/)

Institute of Information Security (IISEC) (https://www2.iisec.ac.jp/english/)

Kasetsart University (https://www.ku.ac.th/th)

Logitrain (https://logitrain.edu.au)

Marshall University (http://www.marshall.edu)

National Technical University of Athens (http://www.ntua.gr/)

Paul Sabatier University (https://www.univ-tlse3.fr/)

Research Center on Scientific and Technical Information (CERIST) (http://www.cerist.dz/index.php/en/)

Ruprecht-Karls-University Heidelberg (https://www.uni-heidelberg.de/en)

Shanghai Jiao Tong University (http://en.sjtu.edu.cn/)

Swami Rama Himalayan University (http://www.srhu.edu.in/)

Technische Universitaet Dresden (https://tu-dresden.de/)

Texas Tech University (http://www.ttu.edu/)

Universidade de Sao Paulo (https://www5.usp.br)

University of California (https://www.universityofcalifornia.edu/)

University of New Hampshire (http://unh.edu)

University of Pisa - Italy (https://www.unipi.it/)

University of Seville (https://www.us.es/)

University of Sydney (https://www.sydney.edu.au/)

University of Western Ontario (https://www.uwo.ca/)

University of Wuerzburg (https://www.uni-wuerzburg.de/startseite/)

CIM Forum Leadership

Advanced Micro Devices (http://www.amd.com/)

Broadcom Inc. (http://www.broadcom.com)

Dell Technologies (http://www.dell.com)

CIM Forum Participatory

HP, Inc (http://www.hp.com/)

Lenovo (http://www.lenovo.com)

Loongson Technology Corporation Limited (http://www.loongson.cn)

Realtek Semiconductor (http://www.realtek.com.tw)

Western Digital Technologies, Inc. (https://www.westerndigital.com/)

Redfish Forum Promoter

Cisco (http://www.cisco.com)

Dell Technologies (http://www.dell.com)

Ericsson AB (http://www.ericsson.com)

Hewlett Packard Enterprise (http://www.hpe.com)

HP, Inc (http://www.hp.com/)

IBM (http://www-03.ibm.com/systems/power/)

Inspur Electronic Information Industry Co.,Ltd. (https://zh.ieisystem.com/)

Intel Corporation (http://www.intel.com)

Lenovo (http://www.lenovo.com)

Microsoft Corporation (http://www.microsoft.com)

Supermicro (http://www.supermicro.com)

Verizon (http://www.verizon.com)

VMware Inc. (http://www.vmware.com)

Redfish Forum Supporter

Advanced Micro Devices (http://www.amd.com/)

Alibaba (China) Co., Ltd

American Megatrends, Inc. (http://www.ami.com)

ARM, Inc (http://www.arm.com)

CoreWeave (https://www.coreweave.com/)

DigitalOcean (https://www.digitalocean.com/)

Eaton (http://www.eaton.com/us/en-us.html)

Fujitsu (http://www.fujitsu.com/)

Google LLC (http://www.google.com)

H3C (http://www.h3c.com)

Huawei (http://www.huawei.com/)

Jabil (http://jabil.com)

KIOXIA Corporation (http://www.kioxia.com)

Marvell Asia Pte, Ltd. (http:/www.marvell.com)

Meta (https://about.facebook.com/meta)

Microchip Technology Inc. (http://www.microchip.com/)

NetApp (http://www.netapp.com)

NVIDIA Corporation (http://www.nvidia.com)

Phoenix Technologies (http://www.phoenix.com)

Quanta Computer Inc (http://www.quantatw.com/)

Rambus Inc. (https://www.rambus.com)

Seagate Technology (http://www.seagate.com/)

Vertiv (http://www.avocent.com)

ZT Systems (https://www.ztsystems.com/)

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A

- AcBel Polytech Inc. - R
- ams OSRAM



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- Advanced Micro Devices - F
- Advanced Micro-Fabrication Equipment Inc. China
- Advania AB - R
- Airbus SE
- Allegro MicroSystems
- Alphabet Inc. - R
- Altria Client Services LLC.
- Amazon.com, Inc. - R
- Amkor Technology, Inc. - R
- Amphenol Corporation
- Analog Devices, Inc. - R
- Appl[illegible] - F
- Applied Materials - R
- Arista Networks - R
- ARRIS Group - F
- Arrow Electronics
- ASE Technology Holding Co., Ltd.
- ASM International - F
- ASML Holding - R
- ASUSTeK Computer Inc. - F
- Atea ASA - R
- Avaya

B

- Belden
- Best Buy - F
- Beyondsoft International
- Block, Inc.
- BMW Group - R
- Bosch Sensortec - R
- Bose Corporation - R
- Broadcom, Inc.
- Brother Industries Ltd.
- BT plc
- Bullitt Group Ltd

C

- Cadence Design Systems
- Canon Inc. - R
- CECONOMY AG
- Celestica - R
- CGI IT UK Ltd. - R
- Changhong Meiling Co., Ltd. - R
- ChargePoint, Inc.
- Chicony Electronics Co., Ltd - R
- Ciena - R
- Cirrus Logic, Inc.
- Cisco - F
- Citrix
- Comcast Corporation
- Compal Electronics - R
- Continental AG
- Currys PLC

D

- Dell Technologies - F
- Dexcom Malaysia - R
- Dupont Electronics & Industrial
- Dustin AB
- Dysons Operations

E

- Easee - R
- Eaton Corporation
- Edwards Ltd. - R
- EIZO Corporation
- Element Solutions Inc
- Element TV Company, LP
- Ericsson - R

F

- Fabrinet - R
- Fairphone B.V.
- F5 Networks
- First Solar Inc. - R
- Flex - R
- FLSmidth A/S
- Ford Motor Company - R
- Foxconn - R
- FUJIFILM Business Innovation Corp.
- Fujitsu Limited
- Funai Electric Co., Ltd. - R

G

- General Electric Company
- Global Foundries - R

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H

- HARMAN International
- Hasbro, Inc. - F
- Hewlett Packard Enterprise - F
- Hisense USA Corporation - R
- HP Inc. - F
- HTC Corporation
- Huawei Technologies Co., Ltd. - R
- Hypertechnology Ciara Inc.
- Hyve Solutions - R

I

- IBM Corporation - R
- Ichor Systems
- Impinj
- Infineon Technologies AG - R
- Insulet Corporation
- Intel Corporation - F
- Inventec Corporation - R
- iRobot Corporation
- ISU Petasys Co., Ltd. - R

J

- Jabil - F
- JB HI-FI Limited
- JK Imaging Ltd. - R
- JT International SA
- Juniper Networks - R

K

- Keurig Dr Pepper - F
- Key Foundry Co., Ltd.
- Keysight Technologies, Inc.
- Kingston Technology
- KINPO GROUP - R
- Kioxia Holdings Corporation - R
- KLA Corporation - R
- Konica Minolta - R
- Kyndryl
- KYOCERA AVX Components Corporation
- KYOCERA Corporation
- KYOCERA Document Solutions Inc. - R

L

- Lam Research Corporation
- Lenovo - R
- Lexmark - R
- LG Chem Ltd.
- LG Display
- LG Electronics - R
- LG Energy Solution
- Logitech International S.A. - R
- Longwell Company - R
- Lumentum Holdings Inc. - F

M

- Marvell - R
- Meta
- Microchip Technology Incorporated - F
- Micron Technology, Inc. - R
- Microsoft - R
- Mitsubishi Electric Corporation
- ModusLink
- Molex - R
- Monolithic Power Systems, Inc.
- Motorola Solutions, Inc. - R
- Murata Manufacturing Co., Ltd. - R

N

- Nanco
- NetApp - R
- Nikon Corporation

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- New H3C Group
- Nexperia
- Nielsen
- Nokia Solutions and Networks Oy
- Nordic Semiconductor ASA
- Nvidia Corporation - F
- NXP Semiconductors - F

O

- onsemi - F
- Onto Innovation Inc.
- Oracle America, Inc.

P

- Palo Alto Networks
- Panasonic Holdings Corporation
- Pegatron - R
- Philips - R
- Philip Morris International - R
- Plexus - R
- Polestar Performance AB
- Poly
- Positivo Tecnologia S.A.
- Powertech Technology Inc. - F
- Pure Storage, Inc.

Q

- Qorvo, Inc. - R
- Qualcomm - F
- Quanta Computer Inc. - R
- Quest Global

R

- Rambus, Inc. - R
- Renesas Electronics Corporation - R
- Ricoh Company Ltd.
- Roku, Inc.

S

- Sagemcom - R
- Samsung Display
- Samsung Electro-Mechanics
- Samsung Electronics - R
- Sanmina - R
- Schneider Electric
- Seagate Technology - F
- Seiko Epson Corporation - R
- Semtech Corporation
- Senju Metal Industry Co., Ltd. - R
- Sharp Corporation
- Signify - R
- Silicon Laboratories Inc.
- Silicon Motion Technology Corp.
- Siltronic AG
- Simatelex Manufactory Co. Ltd.
- Simplo Technology Co., Ltd.
- SK hynix Inc. - R
- Skyworks Solutions, Inc. - F
- SMART Global Holdings - R
- Snap Inc. - R
- Solidigm - R
- Sonos, Inc.
- Sony Group Corporation - F
- STMicroelectronics - F
- Sumitomo Electric Industries, Ltd.
- Synopsys, Inc.

T

- Taiwan Chinsan Electronics Industrial Co., Ltd. - R
- Taiwan Semiconductor Manufacturing Company, Ltd. - F
- TCL North America - R
- TDK Group
- Techtronic Industries Company Limited
- Tesla, Inc.
- Texas Instruments - R
- The LEGO Group
- 3M Electronics and Energy Business Group
- Tokyo Electron Limited
- Toshiba Corp. - R
- TPV Technology Ltd.
- Trimble Inc. - R

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U

- United Group B.V. - R
- Universal Electronics Inc. - R

V

- Vantiva SA - F
- Veritas - R
- Versuni
- VIAVI Solutions Inc.
- Vishay Intertechnology, Inc. - R
- Vitesco Technologies GmbH
- VIZIO Inc. - R
- Volvo Car Group
- V.S. Industry Berhad

W

- Walmart
- Western Digital - R
- Wistron Corp. - R

X

- Xerox - R
- XP Power - R

Z

- Zaptec - R
- Zebra Technologies Corporation - R
- Zhen Ding Technology Holding Ltd.
- ZT Systems

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ARM Limited

Dell

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Lenovo

Microsoft

Phoenix Technologies

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ASUSTeK COMPUTER INC.

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Cumulus Networks Inc.

Cybercom Industria E Comercio de Produtos Eletronico LTDA

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Daten Tecnologia

Douyin Vision (Beijing) Co., Ltd. (Beijing Bytedance Network Technology Ltd.)

Dynabook Inc

EMC Corporation

Google

Huawei Technologies Co., Ltd

IBM

ICC Intelligent Platforms GmbH

INSPUR Electronic Information Industry Co., Ltd.

Linaro Ltd.

Login Informatica Com. Repr. LTDA

Loongson Technology Corporation Limited

Marvell Asia Pte. Ltd.

Meta Platforms, Inc. (Facebook)

Montage Technology

Multilaser Industrial S/A

Nanjing Byosoft Co., Ltd.

NVIDIA

NXP B.V.

Oracle America, Inc.

Positivo Tecnologia S.A.

Qualcomm Inc.

Realtek Semiconductor Corp.

Red Hat, Inc.

Rivos Inc.

Seagate Technology LLC

SIFIVE, INC.

SUPER MICRO Computer, Inc.

SUSE LLC

Synaptics (DisplayLink (UK) Limited)

Tachyum Inc

The Linux Foundation

The MITRE Corporation

Ventana Micro Systems Inc.

VMware, Inc.

Western Digital Technologies

xFusion Digital Technologies Co., Ltd.

ZD Technology (Beijing) Co., Ltd. (Kunlun Technology (Beijing) Co., Ltd)

Zoom Tecnologia Ltda.

Adopters

3MD dba Hard Drives NW

3MDEB Embedded Systems Consulting

9elements GmbH

A.D. Nieman & Associates, LLC

AAEON Technology Inc.

ACAS Technologies, Inc.

Accusys, Inc.

Acer Inc.

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Adaptec, Inc.

Ademco, Inc DBA ADI Global Distribution

ads-tech GmbH

Advantech Co., Ltd.

AGN Group Suprimentos

AGS Sundyne Technologies Pvt. Ltd.

Airdesk Ltd.

Alcor Micro Corp.

Allion Labs, Inc.

ALTELL Ltd.

AlterSciences

American Arium

AMOI Electronics Co., Ltd.

Anna University - College of Engineering

Apricorn

Arca Noae, LLC

Arista Corp.

Arquimedes Automacao E Informatica LTDA.

ASSET InterTech, Inc.

AssurAware, Inc.

Atlona Inc.

ATTO Technology

AuthenTrend Technology Inc.

Authorizer Technologies, Inc.

Aver Networks Corp.

Avery Design Systems

Avery Design Systmes

Avid Technology, Inc.

Axiom Electronics, LLC

Axiomtek Co., Ltd.

Balance Software Corp.

Basemark Oy

Battelle Memorial Institute, Pacific Northwest Division

BCM Advanced Research

BedRock Systems, Inc.

Beijing AnHeng SecoTech Information Technology Co., Ltd.

BINARLY Inc.

BiTMICRO Networks Inc.

Booz Allen Hamilton

Brown's Operating System Services Limited

BSQUARE Corporation

CalDigit, Inc.

Calxeda, Inc.

Canon Inc.

Captec Ltd.

Centerm Information Co., Ltd.

CenterTools Software GmbH

Central South University

Check Point Software

Chelsio Communications, Inc.

China Greatwall Computer Shenzhen Co., Ltd.

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CHUNGHSIN INDUSTRY GROUP

CircleSoft LLC

Circuitco

Cisc Systems

Cix Technology (Shanghai) Co., Ltd.

Computer Task Group

Concurrent Technologies Plc

congatec A.G.

conpal GmbH

coresystems GmbH

Courtyard Electronics Ltd.

Cray, Inc.

CrossInfo Architects

Cryptomill Technologies Ltd.

CSWL, Inc.

Dawning Information Industry (Beijing) Corp., Ltd. (Sugon)

Def-Logix, Inc.

Denali Software

DeviceVM, Inc.

Diablo Technologies, Inc.

Dialogue Technology Corp.

Diskeeper Corporation

Dot Hill

Eclypsium, Inc

Egis Technology Inc.

Elite Group Computer Systems Co., Ltd.

EliteBytes Limited

Eltan B.V.

Embedded Now, Inc

Embedded Research Solutions

emBoot Inc.

Emerson Network Power, Embedded Computing

EMUTEX LTD.

Enmotus, Inc.

EPEAK Studio Ltd.

Etegro Technologies

Eurosoft (UK) Ltd.

EVOC

ExpressLuck Industrial Ltd.

Extreme Engineering Solutions, Inc.

F5 Networks, Inc.

Fastwel Group Co., Ltd.

Federal University of Ceara, Brazil

Fermilab

FernUniversität in Hagen

FirmTek, LLC

Flextronics Instituto de Tecnologia

focian Computer

Founder Technology Group Corp.

Framework Computer LLC

Freescale Semiconductor, Inc.

Fujitsu Ltd.

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Gemalto SA

General Dynamics Canada

Genesi USA Inc.

Gigabyte United Inc.

GIGAPC

GIT Japan Inc.

Glacier Peak Technology, LLC

Grain Media, Inc.

Greencroft Code

Guidance Software, Inc.

HighPoint Technologies, Inc.

Hitachi, Ltd.

Houter Brasil Eireli

HTC Corporation

Hunan New Cloudnet Technology Co., Ltd.

HXT Semitech

IATECAM

ICP Electronics, Inc.

InfoTeCS

Infrant Technologies, Inc.

Inphi Corp.

Institute of Physics, Academia Sinica

Integrated Device Technology Inc.

Intellico, LLC

Intelligency

Intelligraphics, Inc.

Inventec Corporation

Inventec Electronic (Tianjin) Co., Ltd.

IRCONA

ISP RAS

ITSC Library

Japan Digital Laboratory Co., Ltd.

JARI

Jetway Information Security Industry Co., Ltd.

KingTrust Systems Ltd.

Kioxia Corporation

Konsulko Group

Kontron Embedded Modules GmbH

Kraftway Corporation PLC

Kuhrman Technology Solutions LLC

LCC Rubinteh

LCFC

LG Electronics

Lockheed Martin Corporation

Lontium Semiconductor Corporation

LucidLogix

Matrixed Reality Technology Co., Ltd.

Matrox Graphics Inc.

MBDA UK Ltd.

MBM Tecnologia e Industria de Informatica LTDA

MediaTek Inc.

MediCapture, Inc.

Mensys B.V.

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Mercury Computer Systems

Micro-Star Int'l Co., Ltd

Microchip Technology

Micron Technology, Inc.

Microsemi Corporation

Mitrastar Technology Corp.

MokaFive

Moore Threads Technology Co., Ltd.

Mossbit Technologies

Myricom, Inc.

National Instruments Corporation

National Technical Systems

Naval Postgraduate School

NEC Personal Products Ltd.

Neterion, Inc.

Netlist Inc.

Network 2000 Inc.

NetXen Inc.

Neusoft

New H3C Technologies Co., Ltd.

Newport Enterprises Inc.

Nextiva

NOLO Co., Ltd.

NTI Corporation

NVELO, Inc.

OpenMars Development LLC

Order N Development, LLC

Orion Technologies, LLC

OSBASE, LLC

Panasonic Corporation

Parallels International GmbH

Pegatron Corporation

Peppercon AG

PGP Corporation

PixelNext Inc.

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Portlock

PQURE Technology AB

Proformatique

Quanta Computer Inc.

Radisys Corporation

Red Flag Software Co., Ltd.

Renesas Electronics Corporation

RPA RusBITech

rubbersoft.com

Ruijie Networks

Sage-Microelectronics

Samsung Electronics Co., Ltd.

Sandia National Laboratories

SanDisk Corporation

Sanmina Corporation d/b/a Viking Technology

SDL Eletro Eletronica Ltda - EPP

SecurStar GmbH

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SEMP TOSHIBA INFORMATICA LTDA

Sensics, Inc.

ServerEngines Corp.

Shandong University

Shanghai Advanced Research Institute

Shanghai IP3 Technology Co., Ltd.

Silicon Image, Inc.

Silicon Integrated Systems Corp.

SinoSun Technology, Ltd.

SoftIron, Inc.

softKVM LLC

Solarflare Communications Inc.

Spirent Communications

Sprezzatech

SSWW

STEC, Inc.

Stonewood Electronics Ltd.

Stream Labs

Super Future Equities, Inc.

SYBERA GmbH

Symantec Corporation

System Fabric Works

System Garden Ltd.

TCORP

Terascala, Inc.

Themis Computer, Inc.

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Tokyo Electron Device Ltd.

Top Victory Investments

Toshiba Samsung Storage Technology Korea Corporation

Trend Micro

Tsinghua Tongfang Co., Ltd.

Tuxera Inc.

TYA

Ubiquitous AI Corporation

ULINK Technology, Inc.

UNH InterOperability Laboratory

Unicompute Technology Co., Ltd

UniFabriX Ltd.

Uninter Informatica S/A

Unisys Corporation

University of California, Davis

UPEK, Inc.

US Technology Resources (M) SDN. BHD.

V&G Information System Co., Ltd.

VAIO Corporation

Validity Sensors

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VIA Alliance Semiconductor Co., Ltd.

VIA Technologies, Inc.

VNPT Technology

VT Miltope

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Wacom Technology

Wave Systems Corp.

WinMagic Inc.

Winsiders Seminars & Solutions, Inc.

WinSystems, Inc.

Wiwynn Corporation

Wuhan University

Wyse Technology

XGI Technology Inc.

Xi'an Saming Technology Co., Ltd.

Xi3 Corporation

Xitrix Computer Corporation

Xsense Connectivity Inc.

Zhejiang Dahua Technology Co., Ltd.

ZNYX Networks

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Justin Loo

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Kushal Koolwal

Lee Fisher

Liqiang Ni

Lucien Pullen

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Michael Johnston

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Robert Jandacek

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Roger Thompson

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Promoter

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CERTIFICATE

Certificate Number: 111969.00
With Two Page Addendum

The Quality Management System and implementation of:

Lenovo Group, LTD

With Central Functions At:
8001 Development Drive
Morrisville, NC 27560
United States

meets the requirements of the standard:

ISO 9001:2015

Scope:

Design, development, manufacturing, distribution, fulfillment, and repair of computer products and devices, data center products, mobile devices, smart devices, and accessories.

Certification Structure: Multi-site

Certificate Expires:	June 30, 2025
Certificate Issued:	July 01, 2022
Certified Since:	July 01, 2016

Dr. Cem O. Onus
Managing Director
DEKRA Certification, Inc.
1120 Welsh Road, Suite 210
North Wales, PA 19454 USA
(215) 997-4519
http://www.dekra.us/en/audit

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CERTIFICATE ADDENDUM

Certificate Number: 111969.00
ADDENDUM Page One of Two

The Quality Management System and implementation of:

Lenovo Group, LTD

meets the requirements of the standard:

ISO 9001:2015

Site Address	Scope Per Site:
Central Function: 8001 Development Drive; Morrisville, NC 27560 USA	Responsibility of the company's overall QMS through the management of documentation/changes, management review, corrective actions, internal audit, planning/evaluation and compliance to applicable requirements.
8001 Development Drive; Morrisville, NC 27560 USA	Design, development, fulfillment, services, marketing, and sales of computer products and devices, data center products, mobile devices, smart devices, and accessories.
19/1A, & 2A Edayar, Cuddalore Main Road, Edayar Palayam Village – Pondicherry, India	Manufacturing of computer products and devices.
Plant #1: Boulevard Escobedo No 316, Apodaca Technology Park, Apodaca, Nuevo Leon C.P. 66600 Plant #2: Boulevard Escobedo No 318, Apodaca Technology Park, Apodaca, Nuevo Leon C.P. 66627	Manufacturing of computer products and devices, and data center products.
Estrada Municipal José Costa de Mesquita, 200 – Chácara Alvorada – Indaiatuba/SP, Brazil	Manufacturing of computer products and devices, and data center products.

Certificate Expires: June 30, 2025
Certificate Issued: July 01, 2022
Certified Since: July 01, 2016

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Certificate Number: 111969.00
ADDENDUM Page Two of Two

The Quality Management System and implementation of:

Lenovo Group, LTD

meets the requirements of the standard:

ISO 9001:2015

Site Address	Scope Per Site:
6540 Franz Warner Parkway; Whitsett, NC 27377 USA	Manufacturing, distribution, fulfillment and services of computer products and devices, data center products, mobile devices, smart devices, and accessories.
Digital Park, Einsteinova 851 01; Bratislava, Slovakia	Fulfillment, services, marketing, and sales of computer products and devices, data center products, mobile devices, smart devices, and accessories.
Minatomiral Center Building; 2F 3-6-1; Minatomiral, Nishi-Ku; Yokohama, Japan	Design and development of computer products and devices.
Motorola Mobility LLC: 222 W Merchandise Mart Plaza, Chicago, IL 60654 USA	Design, development, fulfillment, services, marketing, and sales of computer products and devices, data center products, mobile devices, smart devices, and accessories.
K-Sped krt. 28, Ullo, 2225 Hungary	Manufacturing of computer products and devices, and data center products.
C/Puerto de Somport 9 Planta 1 (Ed. Oxxeo) - 28050 Madrid Spain	Fulfillment, services, marketing, and sales of computer products and devices, data center products, mobile devices, smart devices, and accessories.
Sants FirstWorkplace Carrer de Tarragona 161, planta 13. 08014 Barcelona, Spain	Fulfillment, services, marketing, and sales of computer products and devices, data center products, mobile devices, smart devices, and accessories.

Certificate Expires: June 30, 2025
Certificate Issued: July 01, 2022
Certified Since: July 01, 2016

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Anexado ao processo administrativo ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 603

CERTIFICATE

Certificate Number: 141968.00
With One Page Addendum

The Environmental Management System and implementation of:

Lenovo Group, LTD

With Central Functions At:
8001 Development Drive
Morrisville, NC 27560
United States

meets the requirements of the standard:

ISO 14001:2015

Scope:

Design, development, manufacturing, distribution, fulfillment, and repair of computer products and devices, data center products, mobile devices, smart devices, and accessories.

Certification Structure: Multi-site

Certificate Expires:	July 16, 2025
Certificate Issued:	July 17, 2022
Certified Since:	July 17, 2013

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Managing Director

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CERTIFICATE ADDENDUM

Certificate Number: 141968.00
ADDENDUM Page One of One

The Environmental Management System and implementation of:

Lenovo Group, LTD

meets the requirements of the standard:

ISO 14001:2015

Site Address	Scope Per Site:
Central Function: 8001 Development Drive; Morrisville, NC 27560 USA	Responsibility of the company's overall EMS through the management of documentation/changes, management review, corrective actions, internal audit, planning/evaluation and compliance to applicable requirements.
8001 Development Drive; Morrisville, NC 27560 USA	Design and development of data center products
19/1A, & 2A Edayar, Cuddalore Main Road, Edayar Palayam Village – Pondicherry, India	Manufacturing of computer products and devices.
Plant #1: Boulevard Escobedo No 316, Apodaca Technology Park, Apodaca, Nuevo Leon C.P. 66600 Plant #2: Boulevard Escobedo No 318, Apodaca Technology Park, Apodaca, Nuevo Leon C.P. 66627	Manufacturing of computer products and devices and data center products.
Estrada Municipal José Costa de Mesquita, 200 – Chácara Alvorada – Indaiatuba/SP, Brazil	Manufacturing of computer products and devices and data center products.
6540 Franz Warner Parkway; Whitsett, NC 27377 USA	Manufacturing, distribution, fulfillment, and repair of computer products and devices, data center products, mobile devices, smart devices, and accessories.
Am Zehnthof 77, 45307 Essen, Germany	Design and development of computer products and devices.
Minatomiral Center Building; 2F 3-6-1; Minatomiral, Nishi-Ku; Yokohama, Japan	Design and development of computer products and devices.
Motorola Mobility LLC: 222 W Merchandise Mart Plaza, Chicago, IL 60654 USA	Design and development of computer products and devices, data center products, mobile devices, smart devices, and accessories.
K-Sped krt. 28, Ullo, 2225 Hungary	Manufacturing of computer products and devices and data center products.

Certificate Expires: July 16, 2025
Certificate Issued: July 17, 2022
Certified Since: July 17, 2013

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Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis

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Registro n.º: 5283519 Data da consulta: 10/06/2025 CR emitido em: 09/06/2025 CR válido até: 09/09/2025

Dados básicos

CNPJ: 07.275.920/0001-61
Razão social: LENOVO TECNOLOGIA (BRASIL) LTDA
Nome fantasia: LENOVO TECNOLOGIA (BRASIL) LTDA
Data de abertura: 03/03/2005

Endereço

Logradouro: ESTM JOSE COSTA DE MESQUITA
N.º: 200
Bairro: CHACARA ALVORADA
CEP: 13337-200
Complemento: MOD 5 A 10
Municipio: INDAIATUBA
UF: SP

Cadastro Técnico Federal de Atividades Potencialmente Poluidoras e Utilizadoras de Recursos Ambientais – CTF/APP

Categoria	Detalhe
5 - Indústria de material Elétrico, Eletrônico e Comunicações	2 - Fabricação de material elétrico, eletrônico e equipamentos para telecomunicação e informática

Conforme dados disponíveis na presente data, a pessoa jurídica acima possui Certificado de Regularidade em conformidade com as obrigações cadastrais e de prestação de informações ambientais sobre as atividades desenvolvidas sob controle e fiscalização do Ibama, por meio do CTF/APP.

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0005-10	Gerenciamento de resíduos perigosos - geração de resíduos perigosos - Lei nº 12.305/2010
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greeneletron

SÃO PAULO, 03 DE AGOSTO DE 2018.

DECLARAÇÃO

Declaramos para os devidos fins, que a empresa **Lenovo Tecnologia (Brasil) Ltda**, sediada à Estrada Municipal José Costa de Mesquita, 200 Módulo 5 a 10 - Chácara Alvorada - Indaiatuba SP CEP 13337-200, inscrita no CNPJ sob o nr. 07.275.920/0001-61, é associada a **GREEN Eletron** (Gestora para Resíduos de Equipamentos Eletroeletrônicos Nacional), sob o registro nr. **7005** desde 27/Junho/2016, e que até o presente momento cumpriu rigorosamente suas Obrigações Estatutárias, bem como, o recolhimento das Contribuições Associativas.

Por ser verdade, firmamos a presente Declaração.

Ademir Brescansin

Anexo PROPOSTA ITEM 1 - ER SOLUÇOES (1661785) SEI 2025.001317 / pg. 607

ASSOCIADOS

Conheça as empresas que já fazem parte da Green Eletron e garantem o descarte sustentável de seus equipamentos.

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Página Inicial do Produto

Usar o Lenovo Vantage facilita a sua vida

Descrição

Seu PC Lenovo possui características únicas que você não encontrará em nenhum outro computador, e o Lenovo Vantage torna mais fácil para que você obtenha o máximo do seu dispositivo. Tudo dentro do Lenovo Vantage é feito sob medida para você: você encontrará informações úteis e recomendações com base no seu dispositivo e a maneira como você o utiliza. Com uma interface fácil de usar, você pode:

- Personalizar suas configurações
- Melhorar a segurança do WiFi,
- Atualizar drivers
- Executar o diagnóstico do dispositivo
- Identificar o número de série do sistema e o número de produto
- Solicitação de suporte e muito mais.

Conheça mais sobre o Lenovo Vantage assistindo vídeos tutoriais no Lenovo Suporte no YouTube (https://www.youtube.com/channel/UCAlvKsUHOASIzduN8Tuv3jA/videos)

- (video) Obtenha drivers recentes através do Lenovo Vantage (https://www.youtube.com/watch?v=JV69KDHrOsw&t=2s)
- Dicas Lenovo: ***www.lenovo.com/tips*** (https://www.lenovo.com/tips)

Nota:

- Lenovo Vantage foi criado especificamente para PCs com o Windows 10. Link para download: **https://www.microsoft.com/en-us/store/p/lenovo-companion/9wzdncrfj4mv** (https://www.microsoft.com/en-us/store/p/lenovo-companion/9wzdncrfj4mv)
- O Lenovo Vantage substitui o Lenovo Companion, Lenovo Settings e o Lenovo Account Portal.

Marcas aplicáveis

Desktops, Notebooks, Tablets, Workstations

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Sistema Operacional

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- Windows 10

Solução

Lenovo Vantage (substituto do Lenovo Companion) é um app que mantém o seu dispositivo funcionando corretamente e o ajuda a fazer ainda mais com o seu dispositivo.



Principais características:

- Ajuste o seu PC Lenovo com configurações personalizadas:
  - Power: Ajuda a gerenciar e prolongar a vida da bateria do notebook
  - Áudio, Visual: Configurações da câmera, controle de brilho, configurações de microfone, configurações Dolby
  - Configurações inteligentes: Ajusta automaticamente o seu áudio e exibição com base em aplicativos que estão sendo usados.
  - Entrada: Touchpad, tecla de função (Fn), teclado luminoso, as configurações do mouse/caneta/toque
- Acesso para o Lenovo Migration Assistant - um aplicativo gratuito que transfere perfeitamente arquivos e configurações de um PC para outro
- Protege o seu PC e atualiza os drivers e softwares de sistemas importantes
- Avaliação da integridade do sistema e execução do diagnóstico no seu dispositivo
- Acesso ao guia do usuário do seu sistema e obtenção de suporte
- Descubra outras coisas divertidas e aplicativos úteis
- Veja os acessórios compatíveis com seu dispositivo
- Explore ofertas exclusivas em serviços e produtos da Lenovo
- Identifique o status da garantia
  - Data de início e data de término
  - Links para as opções de garantia e upgrades
- Obter dicas úteis e manter-se atualizado sobre as últimas notícias de tecnologia, com artigos da Lenovo

Como baixar o Lenovo Vantage

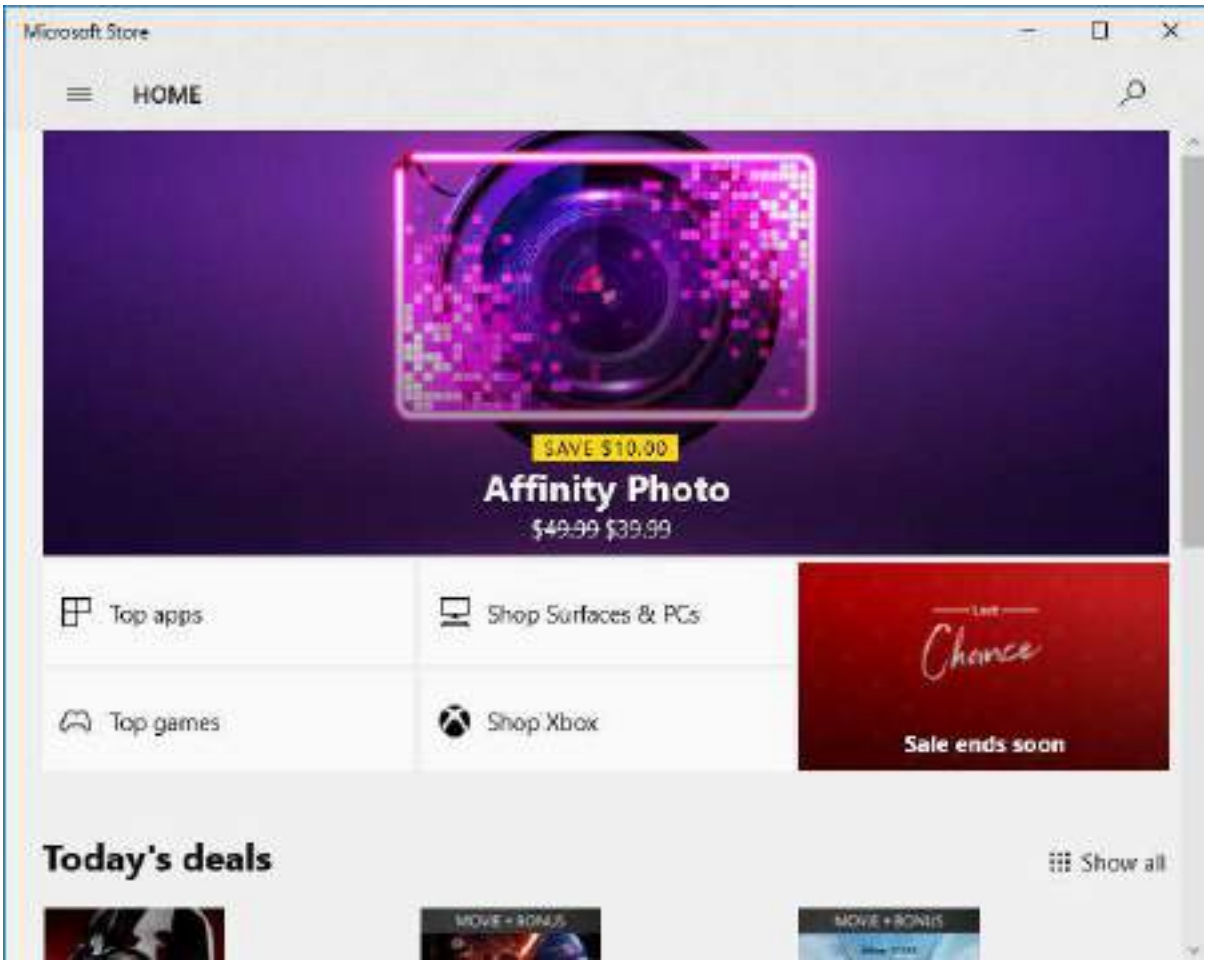
Consulte abaixo os passos para baixar e instalar o Lenovo Vantage.

1. Encontre a Microsoft Store no menu Iniciar

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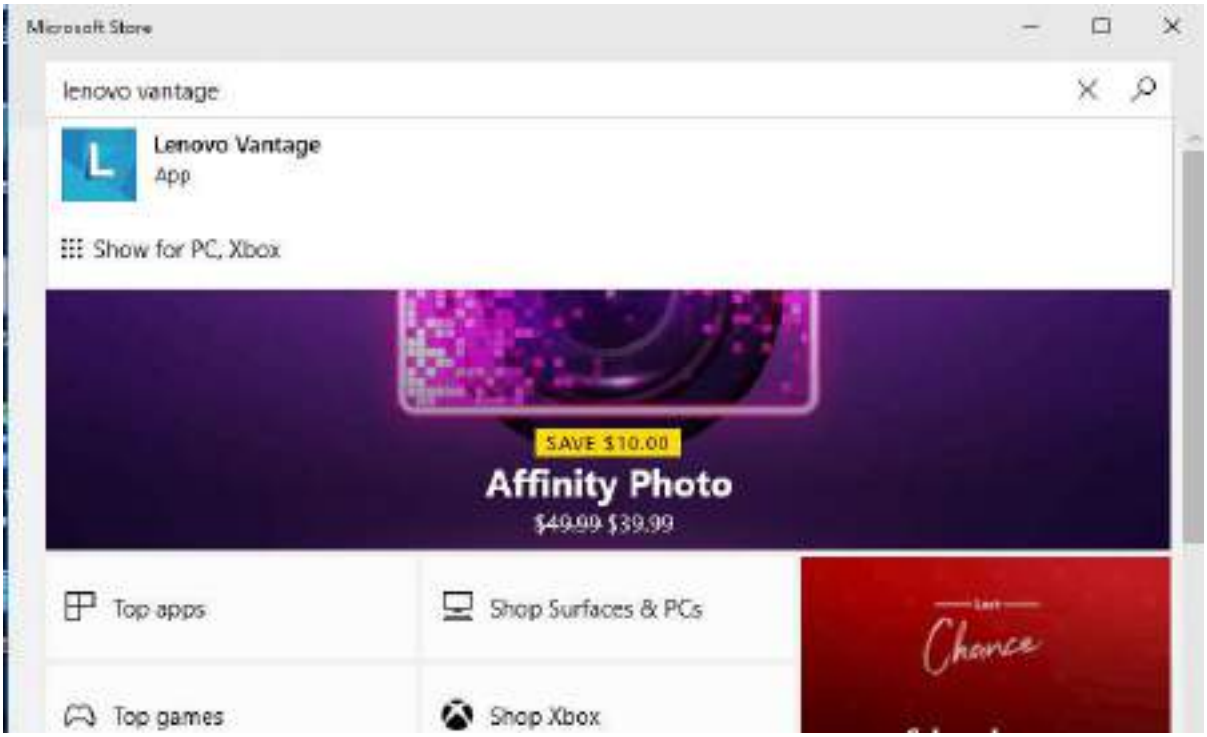




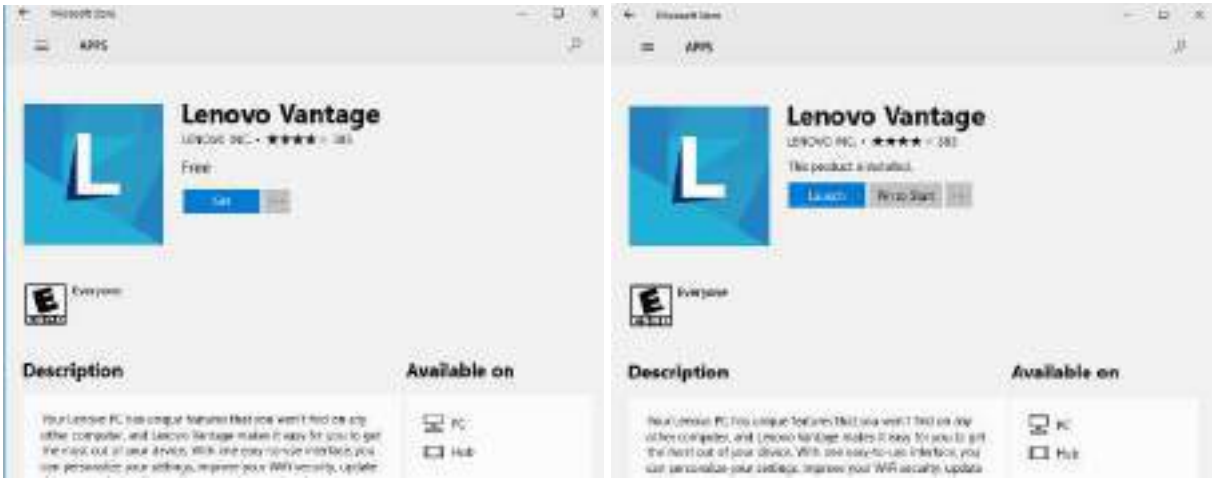
2. Toque "Lenovo Vantage" na barra de pesquisa no Microsoft Store

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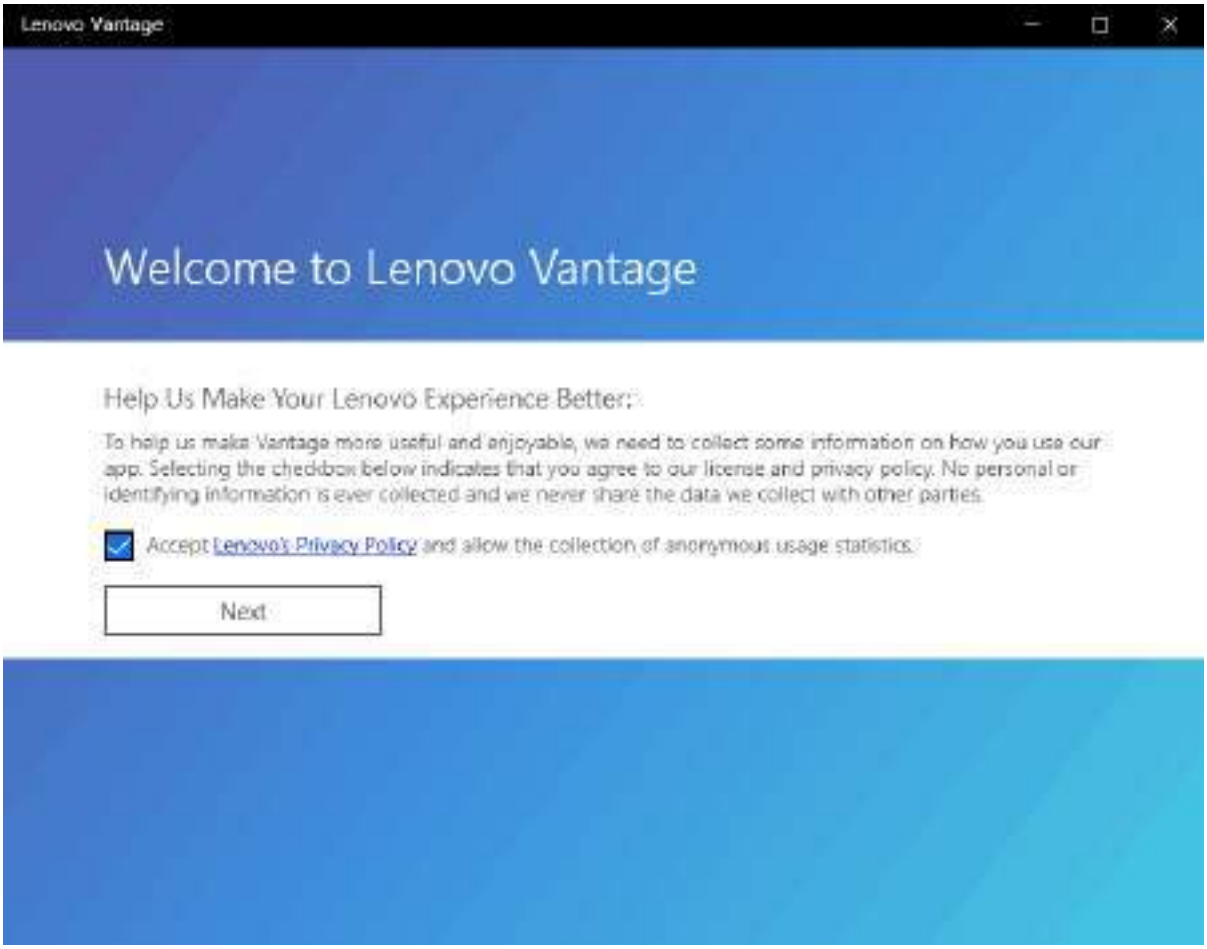
3. Clique no ícone Lenovo Vantage para acessar a página de aplicativos. Então, clique em Obter para lançar e baixar o Lenovo Vantage.



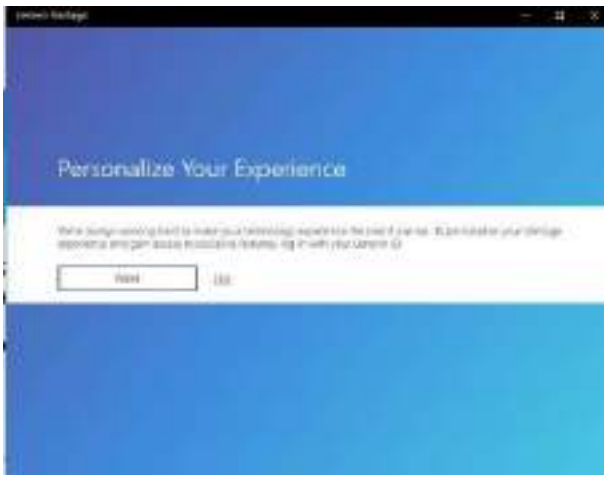
4. Após baixar Lenovo Vantage, execute o arquivo. Em seguida, marque "aceitar a política de privacidade da Lenovo" para ir ao próximo passo.

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5. Se você possui o Lenovo ID, pode entrar com ele. Se você não tiver, você pode pular esta etapa para acessar diretamente o Lenovo Vantage, e registrar mais tarde se quiser.





Como encontrar o Lenovo Vantage

Use um dos procedimentos a seguir para encontrar Lenovo Vantage no seu dispositivo:

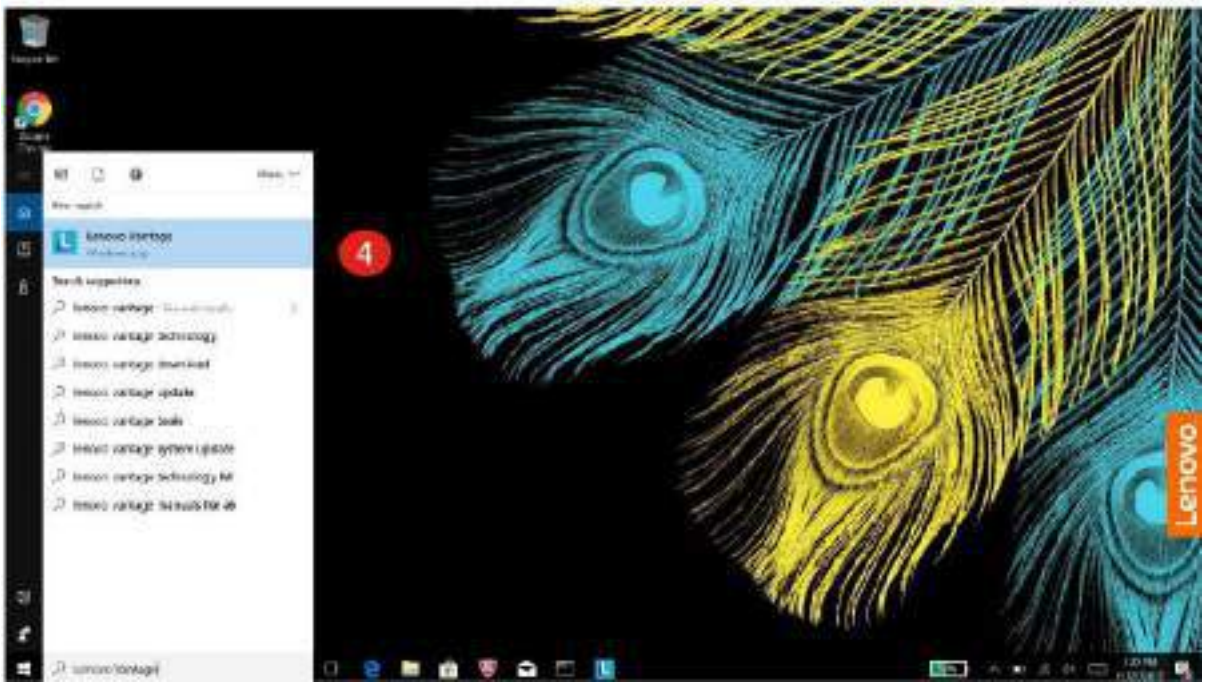
1. Menu iniciar: Listados na lista de aplicativos instalados.
2. *Tiles (*quadradinhos*)* do Windows
3. Barra de tarefas

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4. Barra de pesquisa do Windows





Caso o Lenovo Vantage não esteja instalado no seu dispositivo, você deve baixá-lo gratuitamente na Microsoft Store em **https://www.microsoft.com/en-us/store/p/lenovo-companion/9wzdncrfj4mv** (https://www.microsoft.com/en-us/store/p/lenovo-companion/9wzdncrfj4mv).

Artigos relacionados

- (videos) Saiba tudo sobre o Lenovo Vantage (https://www.youtube.com/watch?v=JV69KDHrOsw&list=PL02UOv7eDl1U8cN2fg0hvwG37HqIASstQ)aqui (https://support.lenovo.com/br/pt/videos/VID500030)
- Encontrar número de série (https://support.lenovo.com/br/pt/solutions/HT505229)

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- (video) Encontre o número de série usando o Lenovo Vantage (https://www.youtube.com/watch?v=XUVeNYXS0F4)
- Para acessar os canais de suporte da Lenovo Brasil, como Chat, WhatsApp, Facebook, Contatos, clique aqui (https://www.lenovo.com/br/pt/contato)
- Para vídeos tutoriais sobre como resolver problemas diversos, acesse aqui (https://www.youtube.com/channel/UCAlvKsUHOASIzduN8Tuv3jA/videos)
- **Conheça o canal Lenovo Suporte no YouTube, clique aqui** (https://www.youtube.com/channel/UCAlvKsUHOASIzduN8Tuv3jA/videos)
- Lenovo Vantage exibe Informação da versão do BIOS equivocada - ThinkPad, ThinkCentre, IdeaPad, IdeaCentre (https://support.lenovo.com/solutions/HT506091)
- Tópicos populares para PC's (/solutions/HT503909)
- Atualização de drivers (https://support.lenovo.com/br/pt/solutions/ht504759)
- Lenovo ID: Acesse tudo da Lenovo, através de todos os nossos sites com um nome de usuário e senha (/solutions/HT103471)
- Suporte técnico para PCs (https://pcsupport.lenovo.com/br/pt/)
- Verifique sua garantia (https://support.lenovo.com/br/pt/warrantylookup)
- Saiba mais sobre a garantia de PCs Lenovo (https://pcsupport.lenovo.com/br/pt/warrantylookup)
- Encontre os principais tópicos pro seu computador (https://support.lenovo.com/br/pt/solutions/HT503909)

Esta informação foi útil?

Sua opinião ajuda a melhorar este site.

Sim Não

ID do documento: HT505081
Última atualização: 5/17/2018

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(//www.youtube.com/lenovovision)

(//pinterest.com/lenovous/)

Nosso compromisso com o meio ambiente (//www.lenovo.com/us/en/about#social-responsibility)

A Lenovo tem o compromisso de liderança ambiental em operações para design de produtos e soluções de reciclagem.

Veja o nosso Relatório Global de Sustentabilidade. (https://www3.lenovo.com/us/en/social_responsibility/sustainability_reports/)

Sobre a Lenovo

Nossa Empresa (https://www.lenovo.com/br/pt/lenovo/?linkTrack=footer:About%20Lenovo_Our%20Company)

Notícias (https://www3.lenovo.com/br/pt/noticias?linkTrack=footer:About Lenovo_News)

INVESTIDORES (http://static.lenovo.com/ww/lenovo/investor_relations.html?linkTrack=footer:About%20Lenovo_Investor%20Relations)

Responsabilidade Social (https://www3.lenovo.com/us/en/social_responsibility/product/?linkTrack=footer:About%20Lenovo_Social%20Responsibility)

Product Compliance (https://www.lenovo.com/us/en/lenovo/compliance?linkTrack=footer:About%20Lenovo_Product%20Compliance)

Informações Legais (https://www.lenovo.com/br/pt/legal/?linkTrack=footer:About Lenovo_Legal Information)

OPORTUNIDADES (http://lenovocareers.com/por/index.html)

Loja

Notebooks e Ultrabooks (http://shop.lenovo.com/br/pt/laptops/)

Tablets (http://shop.lenovo.com/br/pt/tablets/)

Workstations (http://shop.lenovo.com/br/pt/desktops/>Desktops e All-in-Ones <a href=)

Servidores (https://www.lenovo.com/us/en/data-center/servers/c/servers?menu-id=explore_servers)

Acessórios e Atualizações (http://shop.lenovo.com/br/pt/acessorios/?IPromoID=LEN130115)

Ofertas (http://shop.lenovo.com/br/pt/ofertas/)

services and repairs (http://shop.lenovo.com/br/pt/servicos_e_garantia/?IPromoID=LEN930148)

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Suporte

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Login de prestador

Downloads (/ng/pt/products/downloads?linkTrack=footer:Support_Downloads)

Documentação (/ng/pt/products/documentation?linkTrack=footer:Support_Manuals)

Como fazer & soluções (/ng/pt/products/solutions?linkTrack=footer:Support_Solutions)

Pesquisa de garantia (/ng/pt/warrantylookup?linkTrack=footer:Support_Warranty Lookup)

Fale conosco (/ng/pt/contactus)

Lista de telefones de Suporte (/ng/pt/supportphonelist)

Suporte para Armazenamento (https://download.lenovo.com/lenovoemc/la/pt)

Recursos

Fale Conosco (http://shop.lenovo.com/br/pt/contato/)

Onde Comprar (http://shop.lenovo.com/br/pt/revendedores/)

Blogs (http://news.lenovo.com/blog/?linkTrack=footer:Resources_Blogs)

Fóruns (http://forums.lenovo.com/)

Acessibilidade do Produto (//www.lenovo.com/social_responsibility/us/en/accessibility_notebooks/)

Informação ambiental (http://www.lenovo.com/social_responsibility/br/pt/)

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Termos de uso (//www.lenovo.com/br/pt/legal/) | Política de privacidade (//www.lenovo.com/br/pt/privacy/) | Mapa do site (/sitemap) | Procurar Compatibilidade (/solutions/browsercompatibility)

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Certificate CN19/31787.06

Lenovo Tecnologia (Brazil) Ltd.

Business Registration Address: ESTRADA MUNICIPAL JOSÉ COSTA DE MESQUITA, 200-BAIRRO CHÁCARA ALVORADA-MODULES 5 TO 10-INDAIATUBA / SP BRAZIL – ZIP CODE: 13.337-200 Brasil
Business Operation Address: ESTRADA MUNICIPAL JOSÉ COSTA DE MESQUITA, 200-BAIRRO CHÁCARA ALVORADA-MODULES 5 TO 10-INDAIATUBA / SP BRAZIL – ZIP CODE: 13.337-200 Brasil

Has been assessed under the management system of the certified organisation defined in the main certificate CN19/31787.00 as meeting the requirements of

ISO 45001:2018

For the following activities

Manufacture of Computer Products and Servers.

This certificate is valid from 28 October 2022 until 27 October 2025 and remains valid subject to satisfactory surveillance audits.
Issue 2.
The validity of this certificate depends on the validity of the main certificate.

Authorised by
Jonathan Hall
Global Head - Certification Services

SGS United Kingdom Ltd
Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN, UK
t +44 (0)151 350-6666 - www.sgs.com

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Suporte (/br/pt)

Base de Conhecimento & Guias

Download Lenovo Tools for Administrators

Este é um artigo traduzido automaticamente, por favor clique aqui para

As seguintes ferramentas são fornecidas para auxiliar os administradores de TI no gerenciamento e implantação de produtos Lenovo

- System Update (https://support.lenovo.com/us/en/solutions/ht037099#tvsu)
- Thin Installer (https://support.lenovo.com/us/en/solutions/ht037099#ti)
- Update Retriever (https://support.lenovo.com/us/en/solutions/ht037099#ur)
- Gerente de Dock (https://support.lenovo.com/us/en/solutions/ht037099#dm)

Guia de implantação System Update
Este guia se destina a administradores de TI ou responsáveis por implantar e usar o System Update do sistema de programas (Lenovo System Update , Update Retriever, Thin I suas organizações. Este guia fornece as informações necessárias para instalar e configurar esses aplicativos em um ou mais computadores.

- Guia de implantação System Update (https://download.lenovo.com/cdrt/docs/DG-SystemUpdateSuite.pdf) (inglês)

System Update

- System Update 5.07.0127 (https://download.lenovo.com/pccbbs/thinkvantage_en/system_update_5.07.0127.exe) (7,92 MB)
- Leiame da System Update (https://download.lenovo.com/pccbbs/thinkvantage_en/system_update_5.07.0127.txt) 5.07.0127 (18 KB)

O que mudou:

```
- (Novo)  1. Suporta novas atualizações de firmware baseadas em cápsulas 2. Atualize a biblioteca de CV para 3.1.20 - (Correção) 1. Não é possível
```

Lenovo System Update baixa atualizações de software, drivers e BIOS de um Lenovo diretamente da Internet sem exigir conhecimento específico do usuário de onde o pacote necessário para o sistema de destino. System Update pode determinar quais atualizações são necessárias e aplicá-las. System Update também pode ser direcionada a um repos Update Retriever.

Observação:

- System Update 5.07 é **SOMENTE** compatível com Microsoft Windows 10 e Windows 7; pode ser usado como está no Windows 8 / 8.1
- O Microsoft .NET Framework versão 4.5.2 (https://www.microsoft.com/en-us/download/details.aspx?id=42643) ou superior é necessário para que a System Update
- Antes de usar a System Update com o Windows 7, clique aqui (http://www.catalog.update.microsoft.com/search.aspx?q=kb4474419) para baixar e instalar a atualiza

lançada pela Microsoft para garantir que as System Update possam ser instaladas com êxito. Para obter mais informações sobre esta atualização de segurança da Micros https://support.microsoft.com/en-us/help/4472027/2019-sha-2-code-signing-support-requirement-for- windows -and-wsus (https://support.microsoft.com/en-us/help signing-support-requirement-for-windows-and-wsus) .

Ferramentas de administrador
O arquivo de modelo administrativo (ADM) define as configurações de política usadas por aplicativos nos computadores clientes. As políticas são configurações específicas qu do aplicativo. As configurações de política também definem se o usuário terá permissão para definir configurações específicas por meio do aplicativo. As configurações definid servidor são definidas como políticas. As configurações definidas por um usuário no computador cliente para um aplicativo são definidas como preferências. Conforme definid configurações de política têm precedência sobre as preferências.

- Baixe as System Update (511 KB) (https://download.lenovo.com/pccbbs/thinkvantage_en/zb59_tvsu_win7_win8_admin110.exe)

Thin Installer

- Thin Installer 1.3.0031 (https://download.lenovo.com/pccbbs/thinkvantage_en/lenovo_thininstaller_1.3.0031.exe) (6,7 MB)
- Leiame do Thin Installer (https://download.lenovo.com/pccbbs/thinkvantage_en/lenovo_thininstaller_1.3.0031.txt) 1.3.0031 (9 KB)

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O que mudou:

```
1. Suporta novas atualizações de firmware baseadas em cápsulas. 2. Atualize a biblioteca de CV para 3.1.20. 3. Corrija alguns problemas.
```

Thin Installer é uma versão menor do System Update que não requer instalação - pode simplesmente ser copiado para o sistema de destino. Thin Installer procura os pacotes c que você cria. O repositório pode ser criado em seu disco rígido local, um compartilhamento de rede, um servidor web ou mídia externa, como um CD, DVD ou disco rígido US termina de instalar os pacotes aplicáveis, não existe nenhuma chave de registro relacionada ao Thin Installer - portanto, o usuário só precisa excluir a pasta que contém o Thin arquivos associados ao Thin Installer e ao repositório associado.

Observação:

- Thin Installer **SÓ** é compatível com Microsoft Windows 10 e Windows 7; pode ser usado como está no Windows 8 / 8.1
- O Microsoft .NET Framework versão 4.5.2 (https://www.microsoft.com/en-us/download/details.aspx?id=42643) ou superior é necessário para que o Thin Installer fu

Update Retriever

- Updateretriever_5.00.0085 (https://download.lenovo.com/pccbbs/thinkvantage_en/updateretriever_5.00.0085.exe) (5,6 MB)
- Updateretriever_5.00.0085 Leiame (https://download.lenovo.com/pccbbs/thinkvantage_en/updateretriever_5.00.0085.txt) (11 KB)

O que mudou:

```
1. Atualize a biblioteca CV para 3.1.18.
```

Update Retriever é um programa que permite a um administrador procurar e fazer download de atualizações do Lenovo para uma pasta de repositório em uma unidade local ou pasta do repositório fornece o armazenamento para pacotes de atualização. System Update ou o Thin Installer podem ser configurados para pesquisar pacotes de atualização r compartilhamento de rede em vez de pesquisar no site de suporte Lenovo Com o Update Retriever, é possível iniciar manualmente a pesquisa de pacotes de atualização ou age de novos pacotes de atualização em um intervalo de tempo especificado. Isso permite maior controle das atualizações disponíveis para dispositivos gerenciados.

Observação:

- O Microsoft .NET Framework versão 4.5.2 (https://www.microsoft.com/en-us/download/details.aspx?id=42643) ou superior é necessário para que o Update Retriev

Gerente de Dock

- Dock Manager 1.1.0.13 (https://download.lenovo.com/consumer/options/dockmanagersetup_1.1.0.13.exe)
- Leiame do Dock (https://download.lenovo.com/consumer/options/dock_manager_1.1.0.13.txt)

O que mudou:

```
[Atualizações importantes] - Adicione suporte para " ThinkPad Universal USB -C Dock " [Novas funções ou aprimoramentos] - Melhore os registros que
```

Lenovo Dock Manager é uma nova solução para melhorar a implementação em grande escala de atualizações de firmware para docks da Lenovo Esta solução é executada em s das versões atuais do firmware para docks Lenovo Quando um dock com firmware de nível inferior é conectado, ele é atualizado automaticamente pelo Dock Manager. Ele poc atualizações de firmware do Lenovo Support diretamente da Internet ou de um repositório local em sua rede que é criado e mantido usando o Update Retriever. O aplicativo ta docas no WMI para os administradores consultarem remotamente para fins de gerenciamento. Consulte o Guia do usuário para obter mais detalhes.

Recursos adicionais:

- Guia de usuario (https://download.lenovo.com/consumer/options/dockmanager user manual.pdf)
- Arquivo de modelo de política de grupo (https://download.lenovo.com/consumer/options/policy_setup.exe)

Observação:

- O Microsoft .NET Framework versão 4.5.2 (https://www.microsoft.com/en-us/download/details.aspx?id=42643) ou superior é necessário para que o Dock Manager

Artigos relacionados

Anexo PROPOSTA ITEM 1 - ER SOLUÇÕES (1661785) SEI 2025.001317 / pg. 622

- Soluções de implantação empresarial (https://support.lenovo.com/us/en/solutions/HT104232)
- Lenovo Diagnostic Solutions (https://pcsupport.lenovo.com/lenovodiagnosticsolutions)
- Tópicos populares para PC (/solutions/HT503909)
- Lenovo ID: acesso a tudo da Lenovo , em todos os Lenovo com um nome de usuário e senha (/solutions/HT103471)
- Centro de Suporte do Windows (https://support.lenovo.com/windows-support)

Data de
Data da

Esta informação foi útil?

Sua opinião ajuda a melhorar este site.

Sim Não

Ajuda

Obtenha ajuda na página inicial do produto

Encontre mais soluções, ferramentas e informações úteis em nossa página inicial do produto.

Fale Conosco

Economize tempo iniciando sua solicitação de suporte onl

Fique em contato

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(//www.youtube.com/lenovovision)
(//pinterest.com/lenovous/)

Nosso compromisso com o meio ambiente
(https://www.lenovo.com/us/en/about#social-responsibility)

Veja o nosso Relatório Global de Sustentabilidade. (https://www3.lenovo.com/us/en/social_responsibility/sustainability_reports/)

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Notícias (https://www3.lenovo.com/br/pt/noticias?linkTrack=footer:About Lenovo_News)
INVESTIDORES (https://static.lenovo.com/ww/lenovo/investor_relations.html?linkTrack=footer:About%20Lenovo_Investor%20Relations)
Responsabilidade Social (https://www3.lenovo.com/us/en/social_responsibility/product/?linkTrack=footer:About%20Lenovo_Social%20Responsibility)
Product Compliance (https://www.lenovo.com/us/en/lenovo/compliance?linkTrack=footer:About%20Lenovo_Product%20Compliance)
Código aberto Lenovo (/br/pt/solutions/HT511330)
Informações Legais (https://www.lenovo.com/br/pt/legal/?linkTrack=footer:About Lenovo_Legal Information)
OPORTUNIDADES (https://lenovocareers.com/por/index.html)

Loja

Notebooks e Ultrabooks (https://shop.lenovo.com/br/pt/laptops/)
Tablets (https://shop.lenovo.com/br/pt/tablets/)
Workstations (https://www.lenovo.com/br/pt/desktops-y-all-in-one/c/DESKTOPS)
Servidores (https://www.lenovo.com/us/en/data-center/servers/c/servers?menu-id=explore_servers)
Acessórios e Atualizações (https://shop.lenovo.com/br/pt/acessorios/?IPromoID=LEN130115)
Ofertas de laptop (https://shop.lenovo.com/br/pt/ofertas/)
services and repairs (https://shop.lenovo.com/br/pt/servicos_e_garantia/?IPromoID=LEN930148)

Suporte

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Drivers e Software (/br/pt/products/desktops-and-all-in-ones/thinkcentre-m-series-desktops/thinkcentre-m80q/downloads?linkTrack=footer:Support_Downloads)

Documentação (/br/pt/products/desktops-and-all-in-ones/thinkcentre-m-series-desktops/thinkcentre-m80q/documentation?linkTrack=footer:Support_Manuals)

Como fazer & soluções (/br/pt/products/desktops-and-all-in-ones/thinkcentre-m-series-desktops/thinkcentre-m80q/solutions?linkTrack=footer:Support_Solutions)

Pesquisa de garantia (/br/pt/warrantylookup?linkTrack=footer:Support_Warranty Lookup)

Fale Conosco (/br/pt/contactus)

Suporte para Armazenamento (https://download.lenovo.com/lenovoemc/la/pt)

Recursos

Fale Conosco (https://shop.lenovo.com/br/pt/contato/)

Onde Comprar (https://shop.lenovo.com/br/pt/revendedores/)

Blogs (https://news.lenovo.com/blog/?linkTrack=footer:Resources_Blogs)

Especificações do produto (PSREF) (https://psref.lenovo.com/)

Fóruns (https://forums.lenovo.com/)

Acessibilidade do Produto (https://www.lenovo.com/social_responsibility/us/en/accessibility_notebooks/)

Informação ambiental (https://www.lenovo.com/social_responsibility/br/pt/)

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POSITIVO
TECNOLOGIA

AO
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA GERAL DE JUSTIÇA

Ref.: PREGÃO ELETRÔNICO Nº 94010/2025-CPL/MP/PGJ SRP

PROPOSTA DE PREÇOS

Proposta que faz a empresa Positivo Tecnologia S/A (Filial), inscrita no CNPJ (MF) n.º 81.243.735/0009-03, localizada Rua Ásia, s/n – Lote 05 – Quadra N – Bairro Iguape – Ilhéus – Bahia – CEP 45.658-464, fone (41) 3239-7928 / (41) 3312-3677, e-mail: editais.info@positivo.com.br / contratosgov@positivo.com.br, para o fornecimento dos bens abaixo relacionados, de acordo com todas as especificações e condições estabelecidas no Pregão Eletrônico n.º94.010/2025-CPL/MP/PGJ-SRP, promovido pelo MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS / PROCURADORIA-GERAL DE JUSTIÇA:

Item	Descrição	Marca / Modelo	Quantidade	Valor Unitário R$	Subtotal R$
3	COMPUTADOR TIPO 3 - "NOTEBOOK DE 14"". Especificações técnicas em anexo.	**MARCA**: Positivo **MODELO**: Positivo Master N8450 **FABRICANTE**: Positivo Tecnologia S.A.	300	R$ 5.700,00 (cinco mil e setecentos reais)	R$ 1.710.000,00 (Um milhão, setecentos e dez mil reais)
VALOR TOTAL DA PROPOSTA: R$ 1.710.000,00 (Um milhão, setecentos e dez mil reais)					

A Positivo Tecnologia S/A (Filial) declara que concorda com todas as especificações do Edital.

a. Prazo de validade da proposta: **90 (noventa) dias,** a contar da data de sua apresentação.
b. Prazo de entrega: **90 (noventa) dias corridos,** contados do primeiro dia útil subsequente ao do recebimento da respectiva Nota de Empenho.
c. Modo de Transporte dos Produtos:
( ) rodoviário/terrestre
(X) aéreo: (X) normal ( ) expresso
( ) outros. Especificar: _____
d. Prazo de garantia: 60 (sessenta) meses, contados a partir da emissão do TERMO DERECEBIMENTO DEFINITIVO do objeto.
e. Nome, meios de contato e endereço completo da assistência técnica ou representante em Manaus-AM:

- Dados da Assistência Técnica autorizada da Positivo:

AM	**Razão Social**	POSITIVO TECNOLOGIA S/A (OP.COM TÉCNICO PROPRIO -POSITIVO TECNOLOGIA)
	Endereço	Endereço: R JUAN DE QUINTANA,42 -ADRIANOPOLIS- MANAUS 69057-550 (end. Base de peças e logística - empresa terceira)
	CNPJ	81.243.735/0001-48
	Telefone/e-mail	41 99290-7230 jnunes@positivo.com.br
	Responsável Técnico	Jorge Henrique Fernandes Nunes

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f. Site e/ou e-mail do fabricante, se houver: www.positivotecnologia.com.br / editais.info@positivo.com.br
g. Dados Bancários: Banco: Banco do Brasil Agência:3306-5/Corporate Paraná Conta Corrente: 211.210-8
h. Contato para fins de faturamento: (indicar o nome, cargo, endereço, telefone, e-mail de contato do responsável pelo recebimento das futuras notas de empenho);
i. Dados dos 3 (três) principais integrantes do quadro acionário da licitante, assim compreendidos aqueles que detenham maior parcela das cotas societárias ou o poder de gestão da sociedade: Conforme Declaração em anexo.

Caso seja vencedora indicamos para assinar o contrato o seguinte responsável:
NOME: Alberto Manoel Custodio
TITULARIDADE: Representante Comercial / Representante Legal
CPF: 510.378.076-34 RG: 1.846.112/SSP/MG
ENDEREÇO: Av. Dom Pedro II, nº 1.111 - Centro, na Cidade de Porto Velho/RO
DADOS BANCÁRIOS:
Banco: Banco do Brasil **Agência:** 3306-5/Corporate Paraná **Conta Corrente:** 99.878-8

DECLARAÇÕES:

Declaro para os devidos fins junto à Comissão Permanente de Licitação que:
a) cumpro plenamente os requisitos de habilitação e estou ciente de que respondo pela veracidade das informações prestadas, na forma da lei;
b) em atenção ao item 5.6. do Edital e ao Art. 14, e incisos, da Lei n.º 14.133/2021, não estou impedido de participar direta ou indiretamente desta licitação, e ainda, que não possuo acionistas, diretores ou gerentes, que sejam cônjuge, companheiro ou parente em linha reta, colateral ou por afinidade, até o terceiro grau, inclusive, de membros ou de servidores ocupantes de cargo de direção, chefia ou assessoramento no âmbito do Ministério Público do Estado do Amazonas e de sua CPL;
c) recebi o edital e todos os documentos que o integram, dispondo de todos os elementos e informações necessários à elaboração da proposta de preços com total e completo conhecimento do objeto da licitação;
d) os documentos e declarações apresentados são fiéis e verdadeiros;
e) caso seja vencedora do certame e não cadastrada no SISTEMA DEADMINISTRAÇÃO FINANCEIRA E CONTABILIDADE da SECRETARIA DA FAZENDA DOESTADO DO AMAZONAS – SEFAZ-AM, encaminharei à CONTRATANTE os documentos necessários para efetuar o referido cadastramento no prazo de 05 (cinco) dias úteis, a contar da adjudicação, sob pena de perder o direito de preferência à contratação em favor dos demais licitantes subsequentes, sem prejuízo da possibilidade de responder a procedimento administrativo de responsabilização (PAR) por eventual retardamento da licitação;
f) o preço inclui, além do lucro, todos os custos e despesas, com tributos incidentes e encargos devidos, materiais, serviços, transporte, a integralidade dos custos para atendimento dos direitos trabalhistas assegurados na Constituição Federal, nas leis trabalhistas, nas normas infralegais, nas convenções coletivas de trabalho e nos termos de ajustamento de conduta vigentes na data de entrega das propostas, bem como quaisquer outras despesas diretas e indiretas incidentes na prestação de serviços;
g) a proposta apresentada para participar do presente Pregão foi elaborada de maneira independente por esta licitante e o seu conteúdo não foi, no todo ou em parte, direta ou indiretamente, informado, discutido ou recebido de qualquer outro participante potencial ou de fato, por qualquer meio ou por qualquer pessoa.

Caso seja vencedora indicamos para assinar o contrato o seguinte responsável:
NOME: Alberto Manoel Custodio
TITULARIDADE: Representante Comercial / Representante Legal
CPF: 510.378.076-34 RG: 1.846.112/SSP/MG
ENDEREÇO: Av. Dom Pedro II, nº 1.111 - Centro, na Cidade de Porto Velho/RO

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POSITIVO
TECNOLOGIA

DADOS BANCÁRIOS: Banco: Banco do Brasil **Agência:**3306-5/Corporate Paraná **Conta Corrente:** 211.210-8

Nos preços unitários e totais apresentados nesta proposta estão inclusos todos os impostos vigentes até esta data.

Curitiba, 01 de julho de 2025.

Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

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POSITIVO
TECNOLOGIA

AO
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA GERAL DE JUSTIÇA

Ref.: PREGÃO ELETRÔNICO Nº 94010/2025-CPL/MP/PGJ SRP

DECLARAÇÃO DE COMPOSIÇÃO ACIONÁRIA

POSITIVO TECNOLOGIA S.A. ("POSITIVO"), pessoa jurídica de direito privado, inscrita no CNPJ sob o nº 81.243.735/0009-03, estabelecida na Rua Ásia, s/n, Lote 05, Quadra N, Bairro Iguape, na Cidade de Ilhéus, Estado da Bahia, CEP 45.658-464, neste ato representada na forma de seu Estatuto Social/Procuração, por meio da sua representante legal abaixo assinada, em atendimento aos subitens 5.3 e 5.4 do Anexo II e item 3.7 do Edital, **DECLARA**, para os devidos fins de direito e há quem possa interessar:

I. Que por se tratar de sociedade anônima, a composição acionária da POSITIVO não é descrita em seu Estatuto Social, razão pela qual é emitida a presente declaração.

II. Destaca-se, que a POSITIVO é uma sociedade anônima de capital aberto com ações negociadas na B3 – Brasil, Bolsa, Balcão, e a totalidade do seu capital é representada por 141.800.000 ações ordinárias, distribuídas entre milhares de acionistas[1], com negociações na bolsa de valores e, consequentemente, com variação diária da titularidade de suas ações, o que impossibilita a apresentação de documento societário contendo a lista da totalidade de seus acionistas.

III. Neste sentido, visando dar integral atendimento à exigência de abertura da composição acionária, com base no que determina as normas regulamentadoras da CVM (Resolução CVM 80/22, art. 25, §3º, V[2]), abaixo é apresentada a abertura do quadro acionário da POSITIVO, contendo os acionistas detentores de mais de 5% do capital social da Companhia.

IV. Importante esclarecer que as informações abaixo reportadas tratam-se de dados públicos, que periodicamente são divulgadas pela POSITIVO diretamente no sistema da CVM - Comissão de Valores Mobiliários, também disponíveis para consulta por meio do link https://sistemas.cvm.gov.br/[3] ou, ainda, em seu website de Relação com os Investidores, por meio do link https://ri.positivotecnologia.com.br/informacoes-ao-mercado/formulario-de-referencia/.

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[1] Visando dar maior clareza sobre a dimensão da composição acionária da Positivo, na data de 29/12/2023 a Positivo possuía mais de 47.000 acionistas e em data de 29/05/2024 possuía mais de 43.000 acionistas.

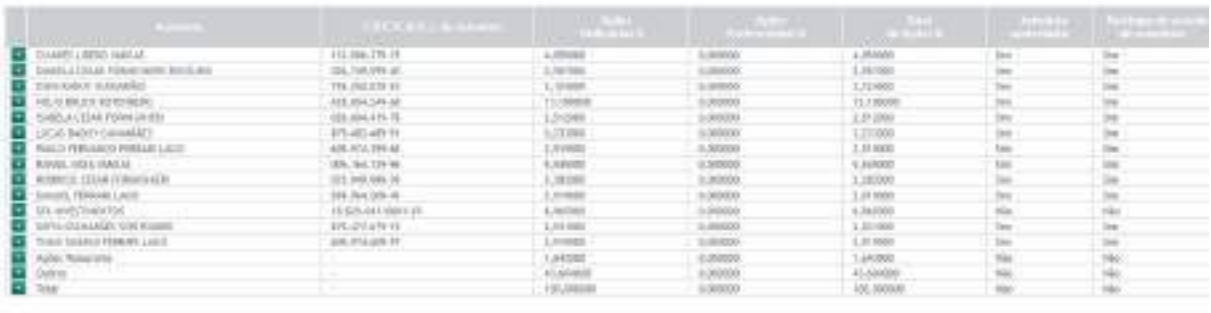
[2] Art. 25. O formulário de referência é o documento eletrônico cujo conteúdo reflete o Anexo C. (...)
§ 3º O emissor registrado na categoria A deve atualizar os campos correspondentes do formulário de referência, em até 7 (sete) dias úteis contados da ocorrência de qualquer dos seguintes fatos: (...)
V – alteração dos acionistas controladores, diretos ou indiretos, ou variações em suas posições acionárias que os levem a ultrapassar, para cima ou para baixo, os patamares de 5% (cinco por cento), 10% (dez por cento), 15% (quinze por cento), e assim sucessivamente, de uma mesma espécie ou classe de ações do emissor;
VI – quando qualquer pessoa natural ou jurídica, ou grupo de pessoas representando um mesmo interesse, direta ou indiretamente, ultrapassar, para cima ou para baixo, os patamares de 5% (cinco por cento), 10% (dez por cento), 15% (quinze por cento), e assim sucessivamente, de uma mesma espécie ou classe de ações do emissor, desde que o emissor tenha ciência de tal alteração;

[3] Ao clicar no link acima, seguir os seguintes passos: **1.** Clicar em Companhia. **2.** Clicar em Consulta de Documentos de Companhia. **3.** Digitar o nome Positivo no campo de pesquisa e clicar em Continuar. **4**. Clicar no número do CNPJ da Positivo. **5.** Expandir o "+Exibir Filtros de Pesquisa". **6.** No campo "Data de Entrega", selecionar "No período" e determinar um período mínimo de 12 meses. **7.** No campo "Categoria", selecionar a opção FRE – Formulário de Referência. **8.** Clicar em "Consultar". **9.** Selecionar a versão mais recente do documento pela Data de Entrega e na coluna "Ações", clicar no ícone com lupa para "Visualizar Documento". **10.** Ao abrir uma nova janela contendo o FRE - Formulário de Referência, selecionar na caixa de opções com lista suspensão o capítulo "6. Controle e grupo Econômico" e o subitem "6.1/2 Posição Acionária".

Proposta de Preço ITEM 3 - POSITIVO TECNOLOGIA (1661786) SEI 2025.001317 / pg. 628

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POSITIVO
TECNOLOGIA



*O quadro acima trata-se de print do FRE – Formulário de Referência, disponível para consulta no sistema da CVM

V. As informações acima são extraídas do Formulário de Referência (FRE), cujo encaminhamento periódico e eventual, previsto no artigo 22, inciso II, da Resolução CVM nº 80/22, reúne todas as informações referentes ao emissor de valores mobiliários admitidos à negociação em mercados regulamentados de valores mobiliários.

Ante todo o exposto, tem a presente declaração o intuito de esclarecer a identificar os principais beneficiários finais da participação, indireta, no capital social da POSITIVO, baseando-se em registros atualizados e públicos nesta data. Aproveitamos a oportunidade para reiterar nossos votos de estima e consideração, bem como nos colocamos à inteira disposição para eventuais dúvidas e esclarecimentos necessários.

Curitiba, 01 de julho de 2025.

Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

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POSITIVO
TECNOLOGIA

AO
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA GERAL DE JUSTIÇA

Ref.: PREGÃO ELETRÔNICO Nº 94010/2025-CPL/MP/PGJ SRP

DECLARAÇÃO

A empresa **POSITIVO TECNOLOGIA S.A (Filial)**, pessoa jurídica de direito privado, estabelecida na Rua Ásia, s/n – Lote 05 – Quadra N – Bairro Iguape, na Cidade de Ilhéus, Estado da Bahia – CEP 45.658-464, inscrita sob o CNPJ n.º 81.243.735/0009-03, declara como fabricante dos equipamentos ofertados para o pregão em referência que:

- Os produtos ofertados serão industrializados, novos e entregues acondicionados adequadamente em suas embalagens originais lacradas, acompanhados de guias e manuais de utilização e de cabos e conectores, além de licenças dos softwares necessários à sua perfeita instalação e funcionamento;
- A licença do software dedicado terá cobertura equivalente ao período de garantia do equipamento (60 meses) e estará plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;
- Os equipamentos pertencem à linha corporativa, não sendo equipamentos destinados ao uso da linha doméstica;
- A fonte de alimentação modelo PI-ADAP090-A(02) possui eficiência superior a 85% com 50% da carga de trabalho e implementa PFC (Power Factor Correction) ativo;
- A fonte de alimentação modelo PI-ADAP090-A(02) é totalmente compatível e homologada para utilização no equipamento POSITIVO MASTER N8450.
- Os equipamentos adquiridos incluem solução de segurança e rastreamento remoto, garantindo proteção contra acessos não autorizados, controle administrativo centralizado e mitigação de riscos relacionados à perda, furto ou roubo. A solução é fornecida com licenciamento válido para o período de 60 (sessenta) meses, com uma licença individual para cada equipamento adquirido, sem necessidade de aquisição de licenças adicionais além das atribuídas ao uso de cada dispositivo.

- A solução conta com as seguintes funcionalidades obrigatórias:

    - **Gerenciamento Centralizado na Nuvem**: A solução opera totalmente na nuvem, permitindo o gerenciamento remoto e centralizado de todos os equipamentos licenciados, sem necessidade de infraestrutura local dedicada para controle e administração.
    - **Rastreamento e Geolocalização**: Possibilita o rastreamento dos equipamentos em tempo real, utilizando geolocalização via rede, garantindo a identificação da última localização conhecida dos dispositivos cadastrados.
    - **Bloqueio e Proteção contra Acessos Não Autorizados**: Permite o bloqueio remoto do equipamento em caso de perda, furto ou uso indevido, garantindo que os dados armazenados fiquem inacessíveis a terceiros até a recuperação ou redefinição do dispositivo.
    - **Proteção contra Adulteração**: Inclui mecanismo de proteção contra tentativas de remoção ou desativação da solução, mesmo em casos de substituição do disco rígido ou reinstalação do sistema operacional, assegurando a persistência do software de segurança.

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- **Monitoramento de Hardware e Atividade**: Permite o monitoramento do status do hardware e da atividade do equipamento, gerando logs e relatórios sobre tentativas de acesso, movimentação e uso não autorizado.
- **Recuperação do Dispositivo**: A solução oferece mecanismos que auxiliem na recuperação do equipamento em caso de extravio ou furto, incluindo mensagens na tela para identificação do proprietário e envio de alertas automáticos para administradores da solução.

- **Outros Requisitos Técnicos e de Compatibilidade**

  - O software é compatível com Windows 11 Pro, garantindo suporte integral às funcionalidades do sistema operacional sem restrições.
  - A implementação da solução permite integração com ferramentas institucionais de gerenciamento de ativos, caso necessário, garantindo compatibilidade com os sistemas já utilizados pela **CONTRATANTE**.
  - O fornecedor garante atualizações contínuas e suporte técnico durante os 60 (sessenta) meses de vigência da licença, sem custos adicionais para a **CONTRATANTE**.

Curitiba, 01 de julho de 2025.

Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

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POSITIVO
TECNOLOGIA

AO
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA GERAL DE JUSTIÇA

Ref.: PREGÃO ELETRÔNICO Nº 94010/2025-CPL/MP/PGJ SRP

DECLARAÇÃO

Retorno de Equipamentos: A Positivo Tecnologia oferece serviço de coleta dos equipamentos, ao final da vida útil, através de solicitação e em condições a serem negociadas. Para utilização deste serviço e orçamento basta o cliente entrar em contato com a Central de Relacionamento Positivo pelo 0800-644-6591.

Prazo de Fornecimento de Peças de Reposição: A Positivo Tecnologia garante a disponibilidade de peças, sob orçamento, de equipamentos dentro do período de até 5 (cinco) anos após a fabricação do mesmo. Para obter maiores informações sobre a aquisição de peças de reposição para equipamentos fora da garantia, basta o cliente entrar em contato com a Central de Relacionamento Positivo pelo 0800-644-6591. A peça disponibilizada terá funcionamento equivalente ou superior ao da peça original. O prazo de fornecimento das peças será conforme disponibilidade.

Serviço de Manutenção Adicional: A Positivo Tecnologia disponibiliza o Serviço de Manutenção por até 36 (trinta e seis) meses adicionais após o vencimento da garantia contratada, mediante orçamento. Para a utilização deste serviço, o cliente deverá formalizar o interesse no ato da compra do equipamento.

Curitiba, 01 de julho de 2025.

Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

Rua Ásia, s/n, Lote 05 Quadra N | Iguape
45.658 464 | Ilhéus - BA

Javari, 1.255, Lote 2578 | Distrito Industrial
69075 110 | Manaus - AM

Positivo Tecnologia S.A.
Rua João Bettega, 5200 | CIC
CEP 81350 000 | Curitiba - PR

www.positivotecnologia.com.br

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POSITIVO
TECNOLOGIA

AO
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA GERAL DE JUSTIÇA

Ref.: PREGÃO ELETRÔNICO Nº 94010/2025-CPL/MP/PGJ SRP

DECLARAÇÃO

A empresa **POSITIVO TECNOLOGIA S.A (Filial)**, pessoa jurídica de direito privado, estabelecida na Rua Ásia, s/n – Lote 05 – Quadra N – Bairro Iguape, na Cidade de Ilhéus, Estado da Bahia – CEP 45.658-464, inscrita sob o CNPJ n.º 81.243.735/0009-03, declara como fabricante dos equipamentos ofertados ao pregão em referência, que conhece, aceita, se submete e atende plenamente todos os requisitos e as cláusulas do Edital e seus anexos, bem como, esclarecimentos adicionais se for o caso.

Curitiba, 01 de julho de 2025.

Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

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POSITIVO
TECNOLOGIA

CONDIÇÕES GERAIS

PRAZO DE ENTREGA	:	**90 (noventa) dias corridos,** contados do primeiro dia útil subsequente ao do recebimento da respectiva Nota de Empenho.
VALIDADE DA PROPOSTA	:	**90 (noventa) dias,** a contar da data de sua apresentação.
PRAZO DE VALIDADE DA ATA DE REGISTRO DE PREÇOS	:	**12 (doze) meses,** a partir da data de publicação do extrato da Ata de Registro no Portal Nacional de Contratações Públicas - PNCP.
CONDIÇÕES DE PAGAMENTO	:	**Até 10 (dez) dias úteis,** contados da finalização da liquidação da despesa.
GARANTIA	:	**60 (sessenta) meses on-site,** prestado pela Positivo ou por sua rede de assistência técnica autorizada. Para as baterias, a garantia será de 36 (trinta e seis) meses. O prazo máximo para conclusão dos reparos será de 5 (cinco) dias úteis, e consistirá na reparação das eventuais falhas dos produtos e na substituição de peças ou componentes que se apresentem defeituosos, completamente de acordo com manuais e normas técnicas específicas para os materiais.

Curitiba, 01 de julho de 2025.

Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

Certificado de Conclusão

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Assunto: Complete com o Docusign: 01 - Proposta PGJ AM.docx
Empresa Responsável: Positivo Tecnologia
Envelope fonte:
Documentar páginas: 10
Assinaturas: 6
Certificar páginas: 1
Rubrica: 4
Assinatura guiada: Ativado
Selo com EnvelopeId (ID do envelope): Ativado
Fuso horário: (UTC-03:00) Brasília

Remetente do envelope:
Hingrid Barbara Miguel
Rua João Bettega, 5200.
Curitiba, PR 81530000
hingridm@positivo.com.br
Endereço IP: 200.186.50.209

Rastreamento de registros

Status: Original
01 de julho de 2025 | 10:45
Portador: Hingrid Barbara Miguel
hingridm@positivo.com.br
Local: DocuSign

Eventos do signatário	Assinatura	Registro de hora e data
MARIA HELENA PEREIRA mhpereira@positivo.com.br Positivo Tecnologia S.A. Nível de segurança: E-mail, Autenticação da conta (Nenhuma), Certificado Digital **Detalhes do provedor de assinatura:** Tipo de assinatura: ICP Smart Card Emissor da assinatura: AC Certisign RFB G5 **Termos de Assinatura e Registro Eletrônico:** Não oferecido através da Docusign	Signed by: MARIA HELENA PEREIRA 83968BDA4C4443B... Adoção de assinatura: Estilo pré-selecionado Usando endereço IP: 200.186.50.209	Enviado: 01 de julho de 2025 | 10:47 Visualizado: 01 de julho de 2025 | 11:21 Assinado: 01 de julho de 2025 | 11:23

Eventos do signatário presencial	Assinatura	Registro de hora e data

Eventos de entrega do editor	Status	Registro de hora e data

Evento de entrega do agente	Status	Registro de hora e data

Eventos de entrega intermediários	Status	Registro de hora e data

Eventos de entrega certificados	Status	Registro de hora e data

Eventos de cópia	Status	Registro de hora e data

Eventos com testemunhas	Assinatura	Registro de hora e data

Eventos do tabelião	Assinatura	Registro de hora e data

Eventos de resumo do envelope	Status	Carimbo de data/hora
Envelope enviado	Com hash/criptografado	01 de julho de 2025 | 10:47
Entrega certificada	Segurança verificada	01 de julho de 2025 | 11:21
Assinatura concluída	Segurança verificada	01 de julho de 2025 | 11:23
Concluído	Segurança verificada	01 de julho de 2025 | 11:23

Eventos de pagamento	Status	Carimbo de data/hora

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POSITIVO
TECNOLOGIA

ESPECIFICAÇÕES TÉCNICAS

Item : 3
Marca : Positivo
Modelo : Positivo Master N8450
Fabricante : Positivo Tecnologia S.A.
Quantidade : 300 (Trezentas) unidades.

Os equipamentos serão fornecidos nas especificações/configurações abaixo:

1. PLACA PRINCIPAL (PLACA MÃE)
1. A placa mãe é construída pelo próprio fabricante do microcomputador sendo produzida sob a especificação do mesmo, não sendo placas de livre comercialização no mercado, nem em regime de OEM;
2. Possui 2 (dois) slots para memória RAM, “do tipo DDR-5 SODIMM”, permitindo a instalação de até 40 (quarenta) Gigabytes. Possui 2 slots com 1 módulo de memória cada, como configuração superior, em substituição aos módulos soldados na placa principal;
3. Suporta tecnologia Dual Channel de utilização de memória RAM;
4. Possui 1 (um) Socket M.2 para SSD SATA ou NVMe;
5. Possui 1 (um) Socket M.2 Para Cartões Wi-Fi/Bluetooth;
6. Possui recursos DASH 1.1 (Desktop and mobile Architecture for System Hardware) e vPro;
7. É compatível com Energy Star 7.0/7.1;
8. Possui capacidade de desligamento do vídeo e do disco rígido após tempo determinado pelo usuário, religamento por acionamento de teclado ou mouse, bem como função de economia de energia para monitor, placa mãe e unidades de armazenamento internas;
9. Possui chip TPM (Trusted Platform Module), versão 2.0, soldado à placa principal, e destinado ao armazenamento de senhas, certificados digitais e chaves criptográficas em conformidade com as especificações do Trusted Computing Group;
10. Possui suporte a virtualização por hardware;
11. Possui suporte a implementação de extensões de virtualização de I/O por hardware;
13. Possui suporte a aceleração de segurança AES no hardware;
14. Possui suporte à tecnologia de acesso remoto out-of-band embutida no hardware;
15. Possui controle da velocidade de rotação do cooler do processador de forma automática, de acordo com a variação de temperatura da CPU;
16. Suporta boot por pendrive ou disco conectado a uma porta USB 3.2;
17. Suporta a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/https boot.

2. BIOS
1. O BIOS é desenvolvido pelo mesmo fabricante do equipamento;
2. O fabricante do equipamento, é totalmente responsável pelo BIOS fornecido juntamente com a placa mãe e pela atualização do mesmo, promovendo as alterações que se façam necessárias e corrigindo problemas ou danos causados ao equipamento em razão desse BIOS ou de procedimentos de atualização deste, (que poderão ser acompanhados pela empresa caso haja necessidade), durante o período de garantia do equipamento;
3. BIOS em português ou inglês, desenvolvido em conformidade com a especificação UEFI 2.9 (http://www.uefi.org) e capturáveis pela aplicação de inventário SCCM (System Center Configuration Manager);
4. O fabricante comprova a compatibilidade com o padrão UEFI através do site http:// www.uefi.org/members, na categoria membros;
5. É do tipo flash EPROM, atualizável por software, compatível com o padrão plug-and-play;
6. É lançado a partir de 2016 e entregue na versão mais atual disponibilizada pelo fabricante;
7. Tem suporte a ACPI;
8. É desenvolvido de acordo com o padrão de segurança NIST 800-147, para garantir a integridade do BIOS;

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9. Possui recursos de controle de permissão através de senhas, sendo uma para inicializar o computador e outra para acesso e alterações das configurações do BIOS;
10. Possui software embarcado no BIOS com funções de diagnóstico de problemas, e gerenciamento com as seguintes características:
    1. Permite o teste do equipamento, com independência do sistema operacional instalado, o software de diagnóstico é capaz de ser executado (inicializado) a partir da UEFI (Unified /Extensible Firmware Interface) ou do Firmware do equipamento através do acionamento de tecla função (F11);
    2. O software de diagnóstico é capaz de informar, através de tela gráfica: O fabricante e modelo do equipamento, processador, memória RAM, firmware, e capacidade do disco rígido;
11. Possui ferramenta que possibilita realizar a formatação definitiva dos dispositivos de armazenamento conectados ao equipamento, desenvolvida em acordo com o padrão de segurança NIST 800-88r1. Esta ferramenta é nativa do BIOS, é oficialmente homologada pelo fabricante do equipamento;
12. Possui opção para exportar/importar configurações;
13. Oferece a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela CONTRATANTE;
14. Possui campo não editável com o número de série do equipamento gravado em memória não volátil e campo editável que permite inserir identificação customizada (identidade patrimonial com pelo menos 10 caracteres). Serão aceitos BIOS com reprogramação via software desde que estes estejam devidamente licenciados para o equipamento e disponibilizados para download no web site de suporte do fabricante;
15. Permite o gerenciamento remoto do microcomputador mesmo desligado, desde que energizado pela rede elétrica e conectado localmente à rede de dados, permitindo ligar e desligar o microcomputador remotamente, com controle de acesso, e com possibilidade de definir horários programados;
    1. Permite acesso remoto através da rede ao POST (procedimento de inicialização) e BIOS para leitura e gravação, mesmo com o equipamento desligado;
    2. Permite acesso remoto ao sistema operacional e processo de inicialização do microcomputador através de interface gráfica, com controle remoto do mouse e teclado (KVM remoto), independente do suporte de aplicações locais ou estado do sistema operacional;
    3. Possui a capacidade de inventário remoto de Hardware mesmo com o equipamento desligado.

3. PROCESSADOR
1. Possui, 2 (dois) núcleos, e 14 (quatorze) threads de processamento com frequência de operação interna básica de, 1.6 GHz;
2. Em caso de processadores com arquitetura de computação heterogênea (big.LITTLE), só serão contabilizados os cores voltados para performance, na contagem mínima de núcleos e ciclos de clock base (MHz);
3. Memória cache total de 12MB;
4. O processador ofertado será o Intel Core Ultra 5, "de 1ª geração";
5. O processador é da última geração disponível utilizada pelo fabricante do equipamento, com desempenho de 17.467 (dezessete mil quatrocentos e sessenta e sete) pontos, considerando o uso pleno de todos os núcleos e sem a aplicação de configurações específicas para aumento ou modificação de desempenho, como "overclock", "undervoltage", "overvoltage" ou quaisquer outras que não estejam em conformidade com os padrões definidos pelo fabricante;
    1. O desempenho é comprovado por intermédio de resultados de BenchMark, disponíveis em: http://www.cpubenchmark.net/cpu_list.php.
    2. Será admitida uma margem de tolerância de 2% (dois por cento) do desempenho mínimo exigido.
6. Possui tecnologia de controle dinâmico de frequência do processador para núcleos individuais e ou múltiplos núcleos, podendo atingir até 4.4 GHz;
7. Possui controlador com suporte à memória RAM do tipo DDR5-5600 MT/s;
8. Possui tecnologia de fabricação de 7nm (sete nanômetros);
9. TDP (Thermal Design Power) mínimo de 12W, e máximo de 57W, declarado pelo fabricante;
10. Possui instruções do padrão AVX 2.0;
11. Possui instruções do padrão SSE4.1/4.2;

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12. Possui instruções que implementem extensões de virtualização de hardware;
13. Possui instruções AES-NI embutidas;
14. O proponente declara em sua proposta comercial o modelo do processador ofertado: Intel Core Ultra 5 135U.

4. MEMÓRIA RAM
1. Possui 16 (dezesseis) GB de memória RAM instalados, com capacidade de expansão de 64 (sessenta e quatro) GB;
2. É do tipo DDR-5 SODIMM e possui 5600 MT/s de velocidade de comunicação com o barramento principal;
3. A implementação do total de memória RAM utiliza 2 (dois) módulos de 8 (oito) GB, utilizando tecnologia dual channel;
    1. Ambos os módulos são do tipo SODIMM, e removíveis como configuração superior a soldada;
4. Os módulos removíveis serão instalados durante o processo de manufatura do computador, e homologados como parte do equipamento, inclusive estando cobertos pela garantia e suporte como descrito no Termo de Referência.

5. UNIDADE DE ARMAZENAMENTO
1. Possui 1 (uma) unidade padrão tipo Solid State Drive (SSD) interna instalada do tipo M.2, na capacidade de 256 GB e velocidade mínima de gravação de 1.200MB/s;
2. Utiliza interface tipo M.2 PCIe 4.0, com o protocolo NVMe;
3. É instalada durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência.

6. CONECTIVIDADE
1. Possui 4 (quatro) portas USB;
    1. Do total de portas, 2 (duas) são do tipo USB 3.2 tipo A;
    2. 2 (duas) são do tipo USB 3.2 Tipo C;
2. Possui 1 (uma) porta de vídeo adicional, suportando a utilização de 1 (um) monitor auxiliar simultânea e independentemente da tela integrada;
3. O tipo da porta auxiliar de vídeo supracitada é HDMI 2.1.

7. INTERFACES DE REDE
1. Possui 1 (uma) interface de rede RJ45 compatível com os padrões 10, 100 e 1000 Mbps, autosense, full-duplex e plug-and-play, configurável totalmente por software e com função Wake On Lan instalada e em funcionamento;
2. A controladora ethernet, é do tipo "onboard", e suporta recurso WOL (Wake On LAN);
3. Possui 1 (uma) interface de rede sem fios no padrão Wi-Fi 6E (802.11 B/G/N/AX), com velocidade de até 2.4Gbps, Tecnologia MU-MIMO, banda dupla em 2.4Ghz e 5Ghz, e suporte a Bluetooth 5.3;
4. As controladoras Wi-Fi e Bluetooth, estarão em um único cartão M.2, conectado em slot específico na placa mãe, que é instalado durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência;
5. A interface Wireless ofertada possui, na data da entrega da proposta, homologação junto à ANATEL com certificado disponível publicamente no endereço eletrônico desta agência, conforme a Resolução n.º 242 de 30 de novembro de 2000.

8. CONTROLADORA DE VÍDEO
1. Possui controlador 3D/2D com suporte a DirectX 12.2;
2. Suporta Pixel Shader 3.0;
3. Suporta OpenGL 4.6;
4. Suporta HDCP ou HDR;
5. Suporta a resolução de 1920 X 1080 @ 60 Hz;
6. Possui tecnologia de controle dinâmico de frequência, podendo atingir 1.9GHz;
7. Suporta o uso de 3 (três) monitores simultânea e independentemente.

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9. CONTROLADORA DE SOM E MULTIMÍDIA
1. O equipamento possui uma controladora de som integrada, do tipo "onboard";
2. Possui uma interface de som com 1 (um) conector combinado para fone de ouvido e microfone, de 3,5 mm;
3. Possui 2 alto-falantes internos, com 2 Watt RMS de potência cada, compatíveis com a controladora de som;
4. Incorpora microfones, com cancelamento de ruído, voltados para captar o som do usuário em frente ao computador.

10. TECLADO
1. É integrado e retroiluminado no idioma padrão, português (Brasil), ABNT-II;
2. Possui teclas multimídia, com aumentar e diminuir volume, além do mute;
    1. Utiliza-se de teclas de função (F1...F12), para tais ações.

11. DISPOSITIVOS APONTADORES
1. Possui um touchpad integrado, com dois botões, e área útil superior a 4 (quatro) pol²;
    1. Admite-se que os botões sejam integrados, como cliques diretos na parte inferior do touchpad;
2. Suporta gestos de rolagem;
3. Acompanha um mouse adicional, da mesma cor e do mesmo fabricante do equipamento ofertado;
    1. É óptico, com conexão USB, com 3 (três) botões e sistema de rolagem de página, com formato ergonômico e com design ambidestro, possui resolução por hardware de 1.000 dpi.

12. TELA INTEGRADA
1. É de tecnologia IPS (In-Plane Switching);
2. Tamanho de 14 polegadas widescreen;
3. Suporta 16 milhões de cores;
4. Resolução de 1920x1200@60Hz;
5. Ângulo de visão de 85° horizontal e vertical;
6. Possui brilho de 300 cd/m².

13. WEBCAM
1. O equipamento possui uma webcam integrada, de 2 megapixels, com resolução de vídeo FHD, não sendo solução externa;
2. Possui mecanismo de bloqueio por tampa, como solução de privacidade, também integrada ao equipamento.

14. FORMATO DE MANUFATURA E FONTE DE ALIMENTAÇÃO
1. O equipamento é produzido no formato laptop.
2. O peso total do equipamento sem a fonte, não excede os 1.6 Kg (um quilo e seiscentos gramas);
3. A dobradiça do equipamento, é construída em metal, e com articulação de 180º;
4. O material do gabinete é de estrutura livre de BFR e outros materiais tóxicos e/ou antiecológicos;
5. Possui botão de liga/desliga e luz de indicação de computador ligado (power-on) em local visível e acessível do computador, quando ele estiver aberto;
6. Possui leitor biométrico integrado, em área acessível, quando o notebook estiver aberto;
7. Oferece a possibilidade de, se demandado, aplicar logo oficial da CONTRATANTE, com área de impressão mínima de 3,00 x 2,72 cm, através de sistema de gravação direta como aplicação em laser, não sendo admitido o uso de adesivagem, serigrafias ou adaptações semelhantes. A gravação deverá ser feita apenas na parte inferior do laptop, visando medidas de segurança;
8. O computador possui fenda de encaixe padrão "Kensington" para utilização de cabo de aço do mesmo tipo;
9. É fornecido com fonte de carregamento/alimentação do mesmo fabricante e compatível com o equipamento, com potência suficiente para suportar todos os dispositivos internos em suas configurações máximas permitidas, além de possibilitar o pleno carregamento da bateria do equipamento;

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10. A fonte de alimentação possui eficiência superior a 85%, com 50% da carga de trabalho e que implementa PFC (Power Factor Correction);
11. A fonte possui tensão de entrada 110 e 220 Volts de forma automática;
12. A fonte fornece uma alimentação de 90W para o equipamento;
13. Os plugues de conexão à rede elétrica seguem o padrão NBR 14136:2002.

15. BATERIA
1. É integrada ao corpo do equipamento, (não destacável);
2. Potência de 57Wh;
3. Possui 3 (três) células de carregamento;
    1. É capaz de manter o equipamento funcionando ininterruptamente por no mínimo 11 (onze) horas, conforme o padrão de teste do aplicativo Mobile Mark 2018.

16. SISTEMA OPERACIONAL E SOFTWARES COMPLEMENTARES
1. Acompanha o equipamento licença OEM do sistema operacional Microsoft Windows 11 Professional de 64 bits, no idioma Português Brasil;
2. O equipamento será entregue com o Windows 11 Professional 64 bits, instalado;
3. Cada equipamento inclui uma licença específica de software dedicado para:
- Controle: Funções de bloqueio e desbloqueio remoto.
- Inventário: Gestão detalhada de hardware e software do equipamento.
- Rastreabilidade: Recursos de geolocalização integrados.
4. O software de controle e monitoramento possui a funcionalidade de persistência, garantindo a preservação do cliente do software e de suas funcionalidades, mesmo após a perda total de dados ou formatação do disco rígido, utilizando tecnologia de residência em firmware;
5. A interface de controle e monitoramento dos equipamentos é baseada em nuvem, sem a necessidade de licenças adicionais além daquelas atribuídas a cada equipamento;
6. A licença do software dedicado tem cobertura equivalente ao período de garantia do equipamento, de 60 (sessenta) meses, e estará plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;
7. Os equipamentos poderão ser entregues com imagem de instalação do sistema operacional e softwares customizada e previamente fornecida pela CONTRATANTE, conforme especificado no Termo de Referência.

17. COMPATIBILIDADE
1. É apresentado o certificado de compatibilidade dos equipamentos com o sistema operacional Windows 11 x64 obtido junto à Microsoft. Consta no Microsoft Hardware Compatibility List (HCL) para o sistema operacional exigido e ofertado.
    1. A comprovação da compatibilidade é efetuada pela apresentação do documento Hardware Compatibility Test Report emitido especificamente para o modelo no sistema operacional ofertado, sendo indicação no site da Microsoft;
2. O equipamento possui certificado de homologação comprovando a compatibilidade do mesmo com, pelo menos, uma distribuição de Linux. A comprovação da compatibilidade é efetuada pela apresentação de documento emitido especificamente para o modelo ofertado;
3. O equipamento, na configuração ofertada, possui certificado de conformidade contra incidentes elétricos e de combustão dos materiais (IEC62368-1) e de imunidade eletromagnética (IEC 61000), comprovado através de certificado nos moldes da portaria 304/2023 vigente do INMETRO.

18. OUTROS REQUISITOS
1. Todas as partes do computador têm coloração neutra em gradações de preto, mantendo o padrão e cor;
2. Acompanha maleta, para transporte com segurança, de tamanho suficiente para acondicionar o equipamento e seus acessórios (fonte de alimentação e cabos), confeccionada em material resistente e impermeável;
3. Equipamento será novo, partes e peças, de primeiro uso, que serão acondicionados em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;

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POSITIVO
TECNOLOGIA

4. Informa marca e modelo dos componentes utilizados na solução e apresenta prospecto com as características técnicas do equipamento e da placa mãe, processador, memórias, interfaces de rede, fonte de alimentação e unidade de armazenamento, incluindo especificação de marca, modelo, e outros elementos que de forma inequívoca identificam e constatam as configurações, possíveis expansões e upgrades, comprovando-os através de certificados, manuais técnicos, folders e demais literaturas técnicas editadas pelos fabricantes;
5. Todos os equipamentos serão entregues idênticos, ou seja, todos os componentes externos e internos terão os mesmos modelo e marca;
6. O equipamento proposto estará em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;
7. Não sendo produtos descontinuados por seus fabricantes, não consta em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não tem previsão de descontinuidade de fornecimento, suporte ou vida;
8. O equipamento em pleno funcionamento atende à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que acompanha a proposta;
9. Tem compatibilidade eletromagnética e de radiofrequência IEC 61000 comprovado através de certificado emitido por órgão credenciado pelo INMETRO;
10. Tem compatibilidade com o padrão DMI 2.0 (Desktop Management Interface) da DMTF (Desktop Management Task Force), o fabricante do equipamento é membro do consórcio DMTF listado na categoria BOARD;
11. Tem compatibilidade com a norma TPM Specification Version 2.0 especificadas pelo TCG (Trusted Computing Group), o fabricante é membro de uma das categorias listadas no site http://www.trustedcomputinggroup.org/about_tcg/tcg_members;
12. Tem compatibilidade com EPEAT na nova categoria Bronze, comprovada através de indicação que o equipamento consta no site www.epeat.net na nova categoria Bronze, que mostrem que o equipamento é aderente ao padrão de eficiência energética EPEAT.
13. Não contêm substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs),éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS (Restriction of Certain Hazardous Substances);
14. Os equipamentos pertencem à linha corporativa, não sendo equipamentos destinados ao uso da linha doméstica.
    1. A comprovação é apresentada junto com a proposta;
15. Não sendo equipamentos que contenham lacres de violação de garantia por abertura, que inviabilizem a inspeção dos componentes a qualquer momento;
16. Garantia de 60 (sessenta) meses on-site, prestado pelo fabricante. Para as baterias, a garantia é de 36 (trinta e seis) meses. Nos meses que restarem para completar o prazo total de garantia, a FORNECEDORA disporá de bateria para venda em caso de eventual necessidade, e a realizar o suporte e assistências técnicas sem ônus para a CONTRATANTE.

Componentes	**Marca**	**Modelo**
Placa-mãe	POSITIVO	POS-SIPWOAA
Processador	INTEL	INTEL CORE ULTRA 5 135U
Memórias	ZILIA	ZMS5WMC3C1J0B46SPG
Interface de rede LAN	INTEL	I219-LM
Interface de rede Wireless	INTEL	Wi-Fi 6E AX211
Fonte de alimentação	POSITIVO	PI-ADAP090-A(02)
Unidade de armazenamento	SSSTC	CL4-8D256

Curitiba, 01 de julho de 2025.

Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

Certificado de Conclusão

Identificação de envelope: 73049949-2E23-4A55-A930-1D7BA15A95AA
Status: Concluído
Assunto: Complete com o Docusign: 02 - Especificacão Técnica - ITEM 3.docx
Empresa Responsável: Positivo Tecnologia
Envelope fonte:
Documentar páginas: 6
Assinaturas: 1
Certificar páginas: 1
Rubrica: 5
Assinatura guiada: Ativado
Selo com EnvelopeId (ID do envelope): Ativado
Fuso horário: (UTC-03:00) Brasília

Remetente do envelope:
Hingrid Barbara Miguel
Rua João Bettega, 5200.
Curitiba, PR 81530000
hingridm@positivo.com.br
Endereço IP: 200.186.50.209

Rastreamento de registros

Status: Original
01 de julho de 2025 | 11:02
Portador: Hingrid Barbara Miguel
hingridm@positivo.com.br
Local: DocuSign

Eventos do signatário	Assinatura	Registro de hora e data
MARIA HELENA PEREIRA mhpereira@positivo.com.br Positivo Tecnologia S.A. Nível de segurança: E-mail, Autenticação da conta (Nenhuma), Certificado Digital **Detalhes do provedor de assinatura:** Tipo de assinatura: ICP Smart Card Emissor da assinatura: AC Certisign RFB G5 **Termos de Assinatura e Registro Eletrônico:** Não oferecido através da Docusign	Signed by: MARIA HELENA PEREIRA 83968BDA4C4443B... Adoção de assinatura: Estilo pré-selecionado Usando endereço IP: 200.186.50.209	Enviado: 01 de julho de 2025 | 11:03 Visualizado: 01 de julho de 2025 | 11:19 Assinado: 01 de julho de 2025 | 11:21

Eventos do signatário presencial	Assinatura	Registro de hora e data

Eventos de entrega do editor	Status	Registro de hora e data

Evento de entrega do agente	Status	Registro de hora e data

Eventos de entrega intermediários	Status	Registro de hora e data

Eventos de entrega certificados	Status	Registro de hora e data

Eventos de cópia	Status	Registro de hora e data

Eventos com testemunhas	Assinatura	Registro de hora e data

Eventos do tabelião	Assinatura	Registro de hora e data

Eventos de resumo do envelope	Status	Carimbo de data/hora
Envelope enviado	Com hash/criptografado	01 de julho de 2025 | 11:03
Entrega certificada	Segurança verificada	01 de julho de 2025 | 11:19
Assinatura concluída	Segurança verificada	01 de julho de 2025 | 11:21
Concluído	Segurança verificada	01 de julho de 2025 | 11:21

Eventos de pagamento	Status	Carimbo de data/hora

POSITIVO MASTER *N8450*

ALTA PERFORMANCE E DURABILIDADE + TECNOLOGIA Intel® vPro®

Com a linha de notebooks Positivo Master N8450 sua empresa terá o máximo em performance, produtividade, segurança e gerenciamento remoto com os processadores Intel® Core™ Ultra e Windows 11 Pro. Alta durabilidade e resistência para sua empresa focar apenas no negócio, sem preocupações extras. Proteja o seu investimento com um notebook com as tecnologias mais modernas e recentes, eficiência e a qualidade comprovadas pelas principais certificações exigidas para o ambiente corporativo.



INTELIGÊNCIA ARTIFICIAL

A Positivo oferece recurso de IA para acelerar a sua produtividade. O Positivo Master N8450 possui uma nova arquitetura de PC híbrida com CPU, GPU e NPU*. **NPU é um processador projetado para otimizar cargas de trabalho específicas de Inteligência Artificial.**



MICROSOFT COPILOT

Com tecla de atalho para o Copilot. O aplicativo Copilot no Windows é um assistente que integra a IA nas suas atividades, ajuda você a obter respostas e inspiração em suas tarefas, apoia a criatividade e ajuda você a se concentrar.



DESEMPENHO EXCEPCIONAL

- Conta com Processadores Intel® Core™ Ultra
- Gerenciamento remoto Intel® vPro®
- Memória DDR5 e duas portas Thunderbolt 4™
- Opção de Armazenamento com SSD PCIe NVMe Gen 4
- Opção de bateria estendida com maior autonomia
- Opções com a tecnologia mais recente de WiFi – WiFi 6E e 7

DURABILIDADE DE ALTO NÍVEL

Estrutura de metal robusto e teclado resistente ao derramamento de líquido com dreno para escoamento. Projetado para ser extremamente resistente e submetido aos mais variados testes, incluindo rígidas normas militares para computadores.

O MÁXIMO EM SEGURANÇA

Leitor de impressão digital tipo Touch* e Chip TPM* (Trusted Platform Module) integrado para autenticação e criptografia de informações que requerem mais segurança.

DESIGN FEITO PARA O DIA A DIA

Com apenas 17.9 mm de espessura e pesando a partir de 1,41 kg, é fácil carregar o notebook para qualquer lugar

TECLADO RETRO ILUMINADO

Teclado resistente a líquidos e retro iluminado com LED* para melhor digitação em ambientes escuros



E mais: Dobradiças metálicas e resistentes com **abertura em até 180°** para utilização mais confortável do notebook e compartilhamento da tela; **Windows Hello** no Windows e em aplicativos compatíveis com segurança de nível empresarial; Conecte todos os seus dispositivos com as **4 portas USB disponíveis**, sendo duas delas **Thunderbolt 4;** Autonomia da bateria** de **até 11 hrs** obtido pelo MobileMark 25.

* Itens opcionais. Consulte os modelos com disponibilidade. ** Autonomia real da bateria pode variar conforme a configuração do produto, softwares, configurações de gerenciamento de energia, brilho da tela e utilização do notebook. Configuração: Processador Intel Core Ultra 5 135U, 8 GB de RAM, tela FHD+ brilho da tela 50%, bateria 57Wh, Windows 11 no modo de energia equilibrado.

Proposta de Preço ITEM 3 - POSITIVO (PE0000250/2024) - SEI 2020.0.001.2317.1 pg. 6/48

POSITIVO MASTER *N8450*

Processadores	• Intel® Core™ Ultra 5 / 7 (Série 1) Série U e H • Intel® Core™ Ultra 5 / 7 (Série 2) Série U e H TDP de 15W para processadores Série U | TDP de 28W para processadores Série H
NPU	Integrado ao processador, Intel® AI Boost *Somente em modelos de processadores selecionados*
Sistema Operacional	• Windows 11 Pro (64 bits) • Windows 11 Home (64 bits) • Linux • Shell EFI *Outras opções sob consulta*
Tela	• LCD 14", 16:10, anti-reflexiva, Resolução Full HD+ (WUXGA) 1920 x 1200, LED, IPS, brilho 300 nits, contraste 800:1. • LCD 14", 16:10, anti-reflexiva, Resolução Full HD+ (WUXGA) 1920 x 1200, LED, IPS, brilho 350 nits, contraste 1500:1, com filtro de privacidade eletrônico integrado. Ângulo de abertura do LCD de 180°
Placa-mãe / Chipset	Positivo POS-SIPWOAA | SoC (System on Chip), funcionalidades integradas junto ao processador Suporta Tecnologia de Virtualização Intel® para E/S (VT-d)
Gerenciamento de Sistema	• Intel® vPro® Enterprise Suporta a tecnologia Intel® vPro® para gerenciamento remoto por meio da plataforma Intel® Active Management Technology
BIOS/UEFI	• BIOS desenvolvida pela Positivo seguindo a UEFI versão 2.9 • Memória flash ROM de 32MB de acordo com SMBIOS V.3.6 e com função "Plug & Play" • Idiomas: Português ou Inglês • Conformidade com as diretrizes do NIST SP800-147 e SP800-193 para proteção contra ataques maliciosos • Permite customização do logo de inicialização (BMP ou JPG) • Senhas de administrador/usuário para controle de acesso ao BIOS, alteração da configuração e inicialização do equipamento • Senha para proteção da unidade de armazenamento • Capacidade de habilitar/desabilitar as portas USBs, Webcam, LAN, SSD, WiFi, Bluetooth, Leitor de Cartão e Touchpad • Capacidade de boot através de: Unidades de Armazenamento, Adaptador de Rede (WoL/PXE) e interfaces USB • Suporte a ACPI versão 6.5 com funções de economia de energia e controle automático de temperatura • Registro de número de série e patrimônio com até 20 caracteres, podendo ser lido remotamente via comandos SMBIOS • Função Desktop Management Interface e Common Information Model (CIM) • Suporta atualização remota por meio de software de gerenciamento • Suporte às tecnologias PXE 2.1, S.M.A.R.T., AHCI e NVMe • Compatível com a plataforma SCCM da Microsoft
Memória RAM	2x slots SO-DIMM DDR5 com suporte para até 64 GB e 4800/5600 MT/s. Com suporte ao modo dual-channel
Armazenamento	• SSD de até 1 TB, PCIe Gen 4.0 x4, NVMe, M.2 2280 • SSD de até 1 TB, PCIe Gen 3.0 x4, NVMe, M.2 2280 • SSD de até 1 TB, SATA III, M.2 2280
Leitor de Cartões	Leitor de cartões MicroSD 4.0 (SD / SDHC / SDXC)
Câmera	• FHD 1080p • Infravermelho (IR) FHD 1080p | Suporte ao Windows Hello Cortina de privacidade integrada
Áudio	Áudio de alta definição (HD Áudio), Realtek ALC233 Dois microfones digitais integrados 2x alto-falantes em configuração estéreo com amplificador (total de 4W) Sistema de cancelamento de ruído dos microfones
Conectividade	**LAN** • Intel I219-LM 10/100/1000 Mbps, padrão Gigabit Ethernet (autosense) • Intel I226-LM 2.5 Gbps (autosense) - Conformidade com os padrões IEEE 802.3, 802.3u e 802.3ab - Suporta Wake-on-LAN (WoL), SNMP, PXE, CSMA/CD e iAMT - Compatível com os padrões DASH 1.1, DASH 1.2 e WS-MAN[5] - Conformidade com os padrões IEEE 802.1q, 802.1p, 802.2, 802.1x, 802.3x - Eficiência de Energia IEEE 802.3az - Auto-negociação IEEE 802.3u, Full-Duplex, configurável totalmente por software, compatível com TCP/IP v.4/v.6 **WLAN + Bluetooth** • Intel® Wi-Fi 7 BE200 (802.11be) 2x2 + Bluetooth 5.4[1] • Intel® Wi-Fi 6E AX211 (802.11ax) 2x2 + Bluetooth 5.3[1]

POSITIVO MASTER *N8450*

Portas de Conexão	• 2x USB-C Thunderbolt™ 4 (Alimentação de dispositivos, Power Delivery 3.1, Dados, DisplayPort 2.1 e carregamento da bateria) • 1x USB 3.2 Gen 2 (com função Always On) • 1x USB 3.2 Gen 1 • 1x HDMI 2.1 • 1x RJ-45 • 1x DC-IN • 1x Áudio combo (entrada + saída de áudio) • 1x Leitor de cartão Smart Card (opcional)
Slots	1x PCIe Gen 4.0 x4, M.2 2280, para SSD 1x PCIe Gen 4.0 x4 / SATA, M.2 2280, para SSD 1x PCIe, M.2 2230, para WiFi
Gráficos	• Intel® Graphics integrado ao processador, com memória alocada dinamicamente. Suporte a Microsoft® DirectX® 12.1 e OpenGL 4.6. • Intel® Arc™ Graphics integrado aos processador, com memória alocada dinamicamente. Suporte a Microsoft® DirectX® 12.2 e OpenGL 4.6. *- Varia de acordo com o modelo do processador.* *- Intel Arc Graphics está disponível em modelos de processadores selecionados da série H, com no mínimo 16 GB de memória RAM e sistema configurado em dual-channel.*
Teclado	• Com retroiluminação • Sem retroiluminação - Padrão ABNT2, 84 teclas com sinalizador visual da tecla CapsLock ativa - Resistência a derramamento de líquidos com dreno para escoamento - Teclas impressas do tipo permanente - Teclas de Função (Fn + tecla de função): Função mudo, aumenta/diminui volume. Ativa/desativa microfone. Liga/desliga e alterna a intensidade da iluminação do teclado retroiluminado (opcional). Aumenta/diminui o brilho da tela. Ativa/desativa touchpad. Alterna entre tela do notebook e tela externa. Ativa/desativa modo avião (WiFi e bluetooth). Função Suspender.
Touchpad	Touchpad com botões integrados, suporte a toques múltiplos, gestos e função de rolagem Resistência a derramamento de líquidos
Segurança	• Leitor de impressões digitais integrado tipo Touch compatível com Windows Hello (opcional). • Sensor de intrusão integrado para detecção da abertura do notebook. • Leitor de cartão Smart Card em conformidade com a norma ISO-7816 (opcional). • Solução TPM 2.0 integrado no SoC. | Chip de criptografia TPM 2.0 discreto certificado pelo TCG e FIPS 140-2 (opcional). • Abertura para trava tipo Kensington. • Limpeza segura dos dados do SSD via BIOS em conformidade com as diretrizes do NIST SP800-88r1. • Suporte a soluções de segurança Absolute². • Suporta Intel® Boot Guard que ajuda a proteger o BOOT contra vírus e ataques de softwares maliciosos.
Chassi	Tampas externas de alumínio | Dobradiças metálicas | Base antiderrapante
LEDs indicadores	Indicador de ligado/hibernação, atividade da unidade de armazenamento, WiFi, indicador de bateria em nível baixo e status de carregamento, Caps Lock, câmera e atividade de rede na porta LAN
Diagnóstico (opcional)	• Solução para recuperação de BIOS corrompido através de hardware local, unidade local ou de unidade externa USB. Possui função de verificação de inicialização que permite recuperação automática. • Ferramenta de diagnóstico pré-boot de hardware abrangendo testes dos seguintes componentes: CPU, Memória, Unidades de armazenamento, Teclado, Mouse, Vídeo, Bateria, Interface de rede, portas USBs e componentes da Placa Mãe. • Sistema de diagnóstico de hardware através de LED e alerta sonoro.
Softwares Positivo (opcional)	• Software de gerenciamento para gestão de TI • Software para atualizações de drivers e BIOS • Software para gerenciamento e controle do TPM • Software para criptografia de dados • Software de backup • Software para consulta de vigência da garantia
Fonte de alimentação	• 65W, USB-C • 65W, DC-IN • Outras opções sob consulta Eficiência nível VI, 100~240V (+/-10%) / 50~60Hz automática, 3 pinos – Com suporte a fast charging (carregamento de 80% da capacidade da bateria em até 1 hora com o notebook desligado)
Bateria	• 45 Wh (3 células, 3948mAh, 11.4V) • 57 Wh (3 células, 4936mAh, 11.55V) Bateria de Polímero de Lítio-Ion interna removível, 3 células, com suporte a fast charging (carregamento de 80% da capacidade da bateria em até 1 hora com o notebook desligado)
Cor	Cinza

Dimensões (L x P x A)	• 318 x 224,9 x 17.9 mm (modelos com tela comum) • 318 x 224,9 x 19.3 mm (modelos com tela com filtro de privacidade integrado)
Peso Líquido[3]	• 1,41 Kg (modelos com bateria de 45Wh) • 1,43 Kg (modelos com bateria de 57Wh)
Documentos e Acessórios (opcional)	• Adaptador CA • Cabo de alimentação NBR 14136/02 – 2P+T • Adaptador de tomada padrão antigo para NBR 14136/02 • Guia Rápido e/ou Manual do Usuário • Discos/Mídias de Recuperação • Trava/Kit de Segurança • Mouse/MiniMouse Ótico • Mousepad • Maleta/Mochila para transporte • Docking Station / HUB USB • Adaptadores de vídeo HDMI/USB-C para DVI/HDMI/DP/VGA • Fone de Ouvido / Headset
Certificações/ Compatibilidades[4]	**Compatibilidade de hardware:** Microsoft® Windows 11® (x64) **Segurança, Compatibilidade Eletromagnética e Eficiência Energética:** Portaria INMETRO 304/2023 **Compatibilidade eletromagnética:** IEC 61000, CISPR22 e CISPR24 **Segurança do usuário:** IEC 60950/IEC 62368 **Ruído acústico:** De acordo com NBR 10152 (ISO 7779 e ISO 9296) **Equipamento ecológico:** RoHS **Certificado DMI:** DMI 2.0
MIL-STD 810H	Teste queda, Método 516.8, Procedimento IV Teste choque mecânico, Método 516.8, Procedimento I Teste umidade, Método 507.6, Procedimento II Teste alta temperatura, Método 501.7, Procedimento II Teste baixa temperatura, Método 502.7, Procedimento II Teste baixa pressão em operação, Método 500.6, Procedimento I Teste baixa pressão em armazenamento, Método 500.6, Procedimento II Teste areia e poeira, Método 510.7, Procedimento I Teste rajadas de poeira, Método 510.7, Procedimento II Teste vibração, Método 514.8, Procedimento II Teste congelamento e descongelamento, Método 524.1, Procedimento III

1 A versão do Bluetooth pode variar devido a limitação do sistema operacional.
2 Equipamento preparado para receber as soluções de segurança Absolute. Para aquisição consulte os termos e condições em https://homeoffice.absolute.com/pt-br.
3 O peso final do notebook pode variar conforme a sua configuração.
4 As certificações podem variar de acordo com a configuração do equipamento.
5 A tecnologia DASH estará disponível quando a tecnologia Intel® vPro™estiver habilitada e funcional.

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Processador Intel® Core™ Ultra 5 135U
12 M de cache, até 4,40 GHz



Processador Intel® Core™ Ultra 5 135U
12 M de cache, até 4,40 GHz

Adicionar para comparar

Conheça os processadores Intel mais recentes e experimente o desempenho aprimorado

Essenciais

Coleção de produtos	Intel® Core™ Ultra processors (Series 1)
Codinome	Products formerly Meteor Lake
Segmento vertical	Mobile
Número do processador	135U
Litografia	Intel 4

Especificações da CPU

Número de núcleos	12
Nº de Performance-cores	2
Nº de Efficient-cores	8
Nº de Efficient-core de baixo consumo de energia	2
Total de threads	14
Frequência turbo max	4.4 GHz
Frequência turbo máx. do Performance-core	4.4 GHz
Frequência turbo máx. do Efficient-core	3.6 GHz
Frequência turbo máx. do Efficient-core de baixo consumo de energia	2.1 GHz
Frequência base do Performance-core	1.6 GHz
Frequência base do Efficient-core	1.1 GHz
Frequência base do Efficient-core de baixo consumo de energia	700 MHz
Cache	12 MB Intel® Smart Cache
Potência básica do processador	15 W
Energia turbo máxima	57 W

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Potência mínima garantida	12 W
Intel® Deep Learning Boost (Intel® DL Boost)	Yes
Frameworks de software de IA suportados pela CPU	OpenVINO™, WindowsML, ONNX RT

Informações complementares

Status	Launched
Data de introdução	Q4'23
Opções integradas disponíveis	Yes
Ajuste de produto (usos embarcados)	Yes
Ficha técnica	Veja agora

Especificações de memória

Tamanho máximo de memória (de acordo com o tipo de memória)	96 GB
Tipos de memória	Up to LPDDR5/x 7467 MT/s Up to DDR5 5600 MT/s
Nº máximo de canais de memória	2
Compatibilidade com memória ECC ‡	No

GPU Specifications

GPU Name‡	Intel® Graphics
Máxima frequência dinâmica da placa gráfica	1.9 GHz
Saída gráfica	DP2.1 UHBR20, HDMI2.1
Xe-cores	4
Traçado de raio	Yes
Resolução máxima (HDMI)‡	4096 x 2304 @ 60Hz (HDMI 2.1 TMDS) 7680 x 4320 @ 60Hz (HDMI2.1 FRL)
Resolução máxima (DP)‡	7680 x 4320 @ 60Hz
Resolução máxima (eDP - tela plana integrada)‡	3840x2400 @ 120Hz
Suporte para DirectX*	12.2
Suporte para OpenGL*	4.6
Suporte a OpenCL*	3.0
Mecanismos de Codec Multiformatos	2
Codificação/Decodificação de hardware H.264	Yes
Codificação/Decodificação de hardware H.265 (HEVC)	Yes
Codificação/Decodificação AV1	Yes
Fluxo de bits e decodificação VP9	Yes
Intel® Quick Sync Video	Yes

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Nº de monitores aceitos ‡	4
ID do dispositivo	0x7D45
Intel® Deep Learning Boost (Intel® DL Boost) na GPU	Yes
Frameworks de software de IA suportados pela GPU	OpenVINO™, WindowsML, DirectML, ONNX RT, WebGPU

Especificações da NPU

Nome da NPU‡	Intel® AI Boost
Suporte à esparsidade	Yes
Suporte para efeitos do Windows Studio	Yes
Frameworks de software de IA suportados pela NPU	OpenVINO™, WindowsML, DirectML, ONNX RT

Opções de expansão

Intel® Thunderbolt™ 4	Yes
Suporte para PCI	4.0
Configurações PCI Express ‡	3 (x4) Gen4 + 8 (x1,x2,x4) Gen4
Nº máximo de linhas PCI Express	20

Especificações de encapsulamento

Soquetes suportados	FCBGA2049
Configuração máxima da CPU	1
Temperatura máxima de operação	110 °C
Tamanho do pacote	50 mm x 25 mm

Tecnologias avançadas

Acelerador Gaussiano e Neural da Intel®	3.5
Intel® Thread Director	Yes
Intel® Image Processing Unit	6.0
Tecnologia Intel® Smart Sound	Yes
Intel® Wake on Voice	Yes
Áudio de alta definição Intel®	Yes
Tecnologia Intel® Adaptix™	Yes
Tecnologia Intel® Speed Shift	Yes
Tecnologia Intel® Turbo Boost Max 3.0 ‡	No
Tecnologia Hyper-Threading Intel® ‡	Yes
Conjunto de instruções	64-bit
Extensões do conjunto de instruções	Intel® SSE4.1, Intel® SSE4.2, Intel® AVX2
Tecnologias de monitoramento térmico	Yes
Acesso de Memória Flexível Intel®	Yes

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Intel® Volume Management Device (VMD - Dispositivo de Gerenciamento de Volume)	Yes

Segurança e confiabilidade

Elegibilidade Intel vPro® ‡	Intel vPro® Enterprise
Intel® Threat Detection Technology (TDT)	Yes
Intel® Active Management Technology (AMT) ‡	Yes
Intel® Standard Manageability (ISM) ‡	Yes
Intel® Remote Platform Erase (RPE) ‡	Yes
Intel® One-Click Recovery ‡	Yes
Elegibilidade para o Intel® Hardware Shield ‡	Yes
Intel® Control-Flow Enforcement Technology	Yes
Intel® Total Memory Encryption - Multi Key	Yes
Novas instruções Intel® AES	Yes
Chave Segura	Yes
Intel® Trusted Execution Technology ‡	Yes
Bit de desativação de execução ‡	Yes
Intel® OS Guard	Yes
Intel® Boot Guard	Yes
Controle de Execução baseado em Modo (MBEC — Mode-based Execute Control)	Yes
Programa Intel® da Plataforma de Imagem Estável (SIPP)	Yes
Tecnologia de Virtualização Intel® com proteção de redirecionamento (VT-rp) ‡	Yes
Tecnologia de virtualização Intel® (VT-x) ‡	Yes
Tecnologia de virtualização Intel® para E/S dirigida (VT-d) ‡	Yes
Intel® VT-x com Tabelas de páginas estendidas (EPT) ‡	Yes

Todas as informações fornecidas estão sujeitas a alterações a qualquer momento, sem aviso prévio. A Intel pode alterar o ciclo de vida da fabricação, as especificações e as descrições dos produtos a qualquer momento, sem aviso prévio. As informações aqui contidas são fornecidas "no estado em que se encontram" e a Intel não atribui qualquer declaração ou garantias relacionadas à precisão das informações, nem sobre os recursos dos produtos, disponibilidade, funcionalidade ou compatibilidade dos produtos listados. Para obter mais informações sobre os produtos ou sistemas, entre em contato com o fornecedor do sistema.

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‡ Este recurso pode não estar disponível em todos os sistemas de computação. Verifique com o fornecedor do sistema para determinar se seu sistema oferece este recurso ou consulte as especificações de seu sistema (motherboard, processador, chipset, alimentação, HDD, controle gráfico, memória, BIOS, drivers, monitor de máquina virtual [VMM], software de plataforma e/ou sistema operacional) para saber sobre a compatibilidade do recurso. A funcionalidade, o desempenho e outros benefícios deste recurso podem variar, dependendo das configurações do sistema.

Os números dos processadores Intel não são indicação de desempenho. Os números dos processadores diferenciam recursos dentro de cada família de processador, e não entre famílias diferentes de processadores. Consulte https://www.intel.com.br/content/www/br/pt/processors/processor-numbers.html para obter mais detalhes.

SKUs "anunciados" ainda não estão disponíveis. Favor consultar a data de lançamento para a disponibilidade no mercado.

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Os gráficos Intel® Arc™ estão disponíveis apenas em sistemas selecionados equipados com processadores Intel® Core™ Ultra série V com design térmico do sistema qualificado ou sistemas selecionados equipados com o processador Intel® Core™ Ultra série H, com pelo menos 16 GB de memória do sistema em uma configuração de canal duplo. É necessária a habilitação do OEM. Outras configurações de sistema com processador Intel® Core™ Ultra apresentam gráficos Intel®. Verifique com o OEM ou varejista os detalhes da configuração do sistema.

Apenas gráficos Intel® Iris® Xe: para usar a marca Intel® Iris® Xe, o sistema deve ser preenchido com memória de 128 bits (canal duplo). Caso contrário, use a marca Intel® UHD.

Consulte https://www.intel.com.br/content/www/br/pt/architecture-and-technology/hyper-threading/hyper-threading-technology.html?wapkw=hyper+threading para obter mais informações, incluindo detalhes sobre quais processadores são compatíveis com a Tecnologia Hyper-Threading Intel®.

Alguns produtos suportam as novas instruções AES com uma atualização da Configuração do processador, em particular, i7-2630QM/i7-2635QM, i7-2670QM/i7-2675QM, i5-2430M/i5-2435M, i5-2410M/i5-2415M. Favor entrar em contato com o OEM para o BIOS que inclui a mais recente atualização da Configuração do processador.

Informações sobre a empresa

Nosso compromisso

Inclusão

Relações com investidores

Fale conosco

Sala de imprensa

Mapa do site

Empregos

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*Marcas comerciais

Cookies

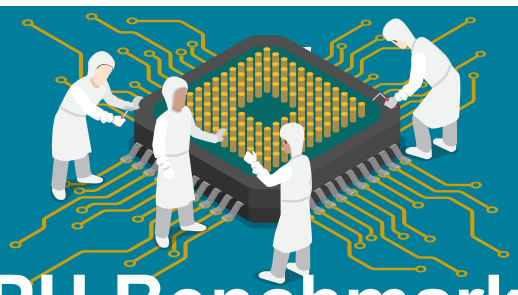
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CPU Benchmarks



CPU Benchmarks

Over 1,000,000 CPUs Benchmarked

Intel Core Ultra 5 135U

Benchmarks for the Intel Core Ultra 5 135U can be found below. Release dates, price and performance comparisons are also listed when available. This is made using thousands of PerformanceTest benchmark results and is updated daily.

- The first graph shows the relative performance of the CPU compared to the 10 other common (single) CPUs in terms of PassMark CPU Mark.
- The 2nd graph shows the value for money, in terms of the CPUMark per dollar.
- The pricing history data shows the price for a single Processor. For multiple Processors, multiply the price shown by the number of CPUs.

Is the Intel Core Ultra 5 135U Good for Gaming?

This is relatively new CPU that contains 12 Cores and 14 Threads. The Intel Core Ultra 5 135U also has reasonable threaded performance that will serve well in games. Paired with a good videocard, *is this CPU Good for Gaming?* Yes, this would be a suitable CPU for gaming. [More ...]

Intel Core Ultra 5 135U	Average CPU Mark
Description: Intel Graphics	Multithread Rating **17488**
Class: Laptop / **Socket:** FCBGA2049	Single Thread Rating **3356**
Total Cores: 12 Cores, 14 Threads	Samples: 519*
Performance Cores: 2 Cores, 4 Threads, 1.6 GHz Base, 4.4 GHz Turbo	*Margin for error: Low
Efficient Cores: 10 Cores, 10 Threads, 1.1 GHz Base, 3.6 GHz Turbo	+ COMPARE
Typical TDP: 28 W / **TDP Down:** 12 W	
TDP Up : 57 W	
Cache per CPU Package: L1 Instruction Cache: 2 x 64 KB; L1 Data Cache: 2 x 48 KB; L2 Cache: 5 x 2048 KB; L3 Cache: 12 MB / **Cache per Eff. CPU Package:** Eff. L1 Instruction Cache: 10 x 64 KB; Eff. L1 Data Cache: 10 x 32 KB	
Memory Support: Max. Memory Size: 96 GB (Up to LPDDR5/x 7467 MT/s Up to DDR5 5600 MT/s)	

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Other names: Intel(R) CoreTM Ultra 5 135U, Intel(R) Core(TM) Ultra 5 135U, Intel Core Ultra 5 135U

CPU Benchmarks

CPUmark/$Price: NA

Overall Rank:
938th fastest in multithreading out of 5246 CPUs
455th fastest in single threading out of 5246 CPUs
215th fastest in out of 1496 Laptop CPUs

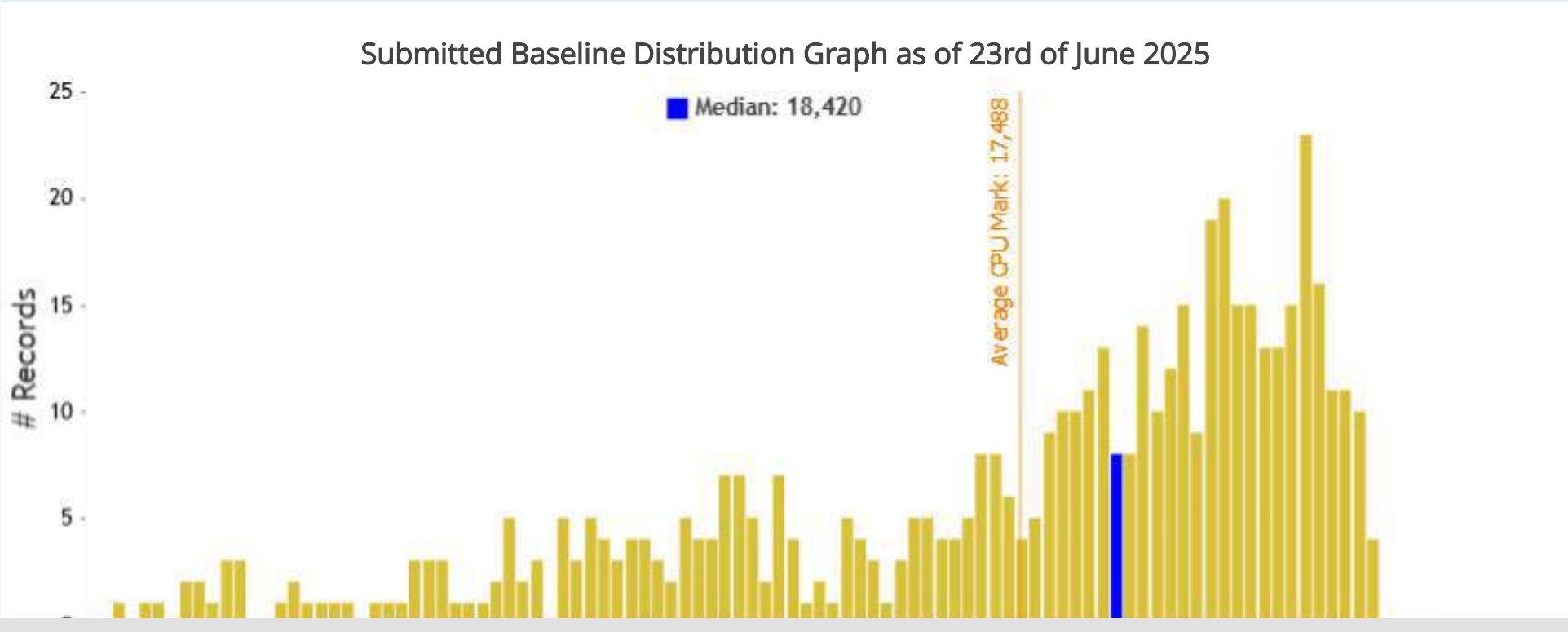
Last Price Change: NA

CPU Test Suite Average Results for Intel Core Ultra 5 135U

Integer Math	57,035 MOps/Sec
Floating Point Math	41,480 MOps/Sec
Find Prime Numbers	65 Million Primes/Sec
Random String Sorting	21,769 Thousand Strings/Sec
Data Encryption	12,300 MBytes/Sec
Data Compression	198,850 KBytes/Sec
Physics	1,129 Frames/Sec
Extended Instructions	11,262 Million Matrices/Sec
Single Thread	3,356 MOps/Sec

From submitted results to PerformanceTest V10 as of 27th of June 2025.

CPU Mark Distribution for Intel Core Ultra 5 135U



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From submitted results since PerformanceTest V10 as of 23rd of June 2025.

For distribution graph only: Results are trimmed to exclude outliers by disregarding the bottom 1% and top 1% of submissions.

CPU Benchmarks

Search for Intel Core Ultra 5 135U

from the Featured Merchants below:

amazon

newegg

BEST BUY

ebay

Note: PassMark Software may earn compensation for sales from links on this site through affiliate programs.

Machines with this CPU (or similar)

	Dell Latitude 5450 5000 14" FHD Business Laptop Computer, Intel 12-Core Ultra 5 135U (Beat i7-1355U), 16GB DDR5 RAM, 512GB PCIe SSD, WiFi 6E, Backlit Keyboard, Thunderbolt 4, HDMI, Windows 11 Pro	$979.00 (www.amazon.com)
	Dell Latitude 3550 Laptop Computer for Business Work, Intel 12-Core Ultra 5 135U (Beat i7-1355U), 16GB DDR5 RAM, 512GB PCIe SSD, 15.6" FHD, WiFi 6, Backlit Keyboard, Fingerprint Reader, Windows 11 Pro	$849.00 (www.amazon.com)
	Dell Latitude 5550 5000 Business Laptop Computer, Intel 12-Core Ultra 5 135U (Beat i7-1355U), 32GB DDR5 RAM, 1TB PCIe SSD, 15.6" FHD, WiFi 6, Thunderbolt 4, Backlit KB, Fingerprint Reader, Win11 Pro	$1299.00 (www.amazon.com)
	Dell Latitude 5550 Multi-Touch Laptop 15.6" FHD, Intel Core Ultra 5-135U vPro, 64GB RAM, 2TB NVMe SSD, Webcam, WiFi 6E, BT, Backlit Keyboard, Thunderbolt, HDMI, USB C, Windows 11 Pro, Notebook Grey	$1199.99 (www.amazon.com)
	Dell Latitude 5550 15 5000 15.6" FHD Business AI Laptop Computer, Intel 12-Core Ultra 5 135U (Beat i7-1355U), 16GB DDR5 RAM, 512GB SSD, WiFi 6, BT 5.3, Backlit KB, FR, Thunderbolt 4, Windows 11 Pro	$1179.00 (www.amazon.com)

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CPU Mark Relative to Top 10 Common Laptop CPUs

As of 27th of June 2025 - Higher results represent better performance

Processor	Average CPU Mark	
Apple M1 Max 10 Core 3200 MHz		22,145
AMD Ryzen 7 5800H		20,823
Intel Core i7-11800H @ 2.30GHz		20,052
AMD Ryzen 7 4800H		18,243
Intel Core Ultra 5 135U		17,488

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Apple M2 8 Core 3500 MHz		15,657

CPU Benchmarks

Intel Core i7-10750H @ 2.60GHz		11,641
Intel Core i7-9750H @ 2.60GHz		10,689
Intel Core i5-1135G7 @ 2.40GHz		9,534

CPU Value (CPU Mark / $Price)

As of 27th of June 2025 - Higher results represent better value

Processor	CPU Mark / $Price	
Intel Core i7-11800H @ 2.30GHz		50.76
Intel Core i5-1135G7 @ 2.40GHz		30.85
Intel Core i7-9750H @ 2.60GHz		11.13
Intel Core Ultra 5 135U		NA
Apple M1 8 Core 3200 MHz		NA
Apple M2 8 Core 3500 MHz		NA
Apple M1 Max 10 Core 3200 MHz		NA
AMD Ryzen 7 5800H		NA
AMD Ryzen 7 4800H		NA
AMD Ryzen 5 5600H		NA
Intel Core i7-10750H @ 2.60GHz		NA

Single Thread Rating

As of 27th of June 2025 - Higher results represent better performance

Processor	Average Thread Rating	
Apple M2 8 Core 3500 MHz		3,901
Apple M1 Max 10 Core 3200 MHz		3,836
Apple M1 8 Core 3200 MHz		3,680
Intel Core Ultra 5 135U		3,356

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AMD Ryzen 7 5800H	3,025

CPU Benchmarks

Intel Core i5-1135G7 @ 2.40GHz	2,644
Intel Core i7-10750H @ 2.60GHz	2,630
AMD Ryzen 7 4800H	2,598
Intel Core i7-9750H @ 2.60GHz	2,406

Last 5 Baselines for Intel Core Ultra 5 135U

Most recent listed first

Baseline	CPU Mark
BL2720376 - Jun 25 2025	19741
BL2716188 - Jun 23 2025	19062
BL2715161 - Jun 23 2025	20359
BL2715160 - Jun 23 2025	20440
BL2711176 - Jun 21 2025	20337

Additional baselines can be obtained using Windows version of PerformanceTest's Manage Baselines feature.

Popular comparisons for Intel Core Ultra 5 135U

As of 27th of June 2025 - Higher results represent better performance

Processor	Average CPU Mark
Intel Core Ultra 5 135U	17,488
Apple M3 8 Core vs Intel Core Ultra 5 135U	19,182 *(+9.7%)*
Intel Core Ultra 5 125U vs Intel Core Ultra 5 135U	17,499 *(+0.1%)*
Intel Core Ultra 7 165U vs Intel Core Ultra 5 135U	17,137 *(-2.0%)*
Intel Core Ultra 7 155U vs Intel Core Ultra 5 135U	16,460 *(-5.9%)*
Intel Core 7 150U vs Intel Core Ultra 5 135U	15,355 *(-12.2%)*
Intel Core i5-1335U vs Intel Core Ultra 5 135U	14,314 *(-18.2%)*
Intel Core i7-1355U vs Intel Core Ultra 5 135U	14,307 *(-18.2%)*

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Intel Core 3 100U vs Intel Core Ultra 5 135U		14,049 (-19.7%)

CPU Benchmarks

Intel Core i7-1255U vs Intel Core Ultra 5 135U		13,253 (-24.2%)
Intel Core Ultra 7 164U vs Intel Core Ultra 5 135U		13,250 (-24.2%)

Is the Intel Core Ultra 5 135U Good for Gaming?

As of 27th of June 2025 - Higher results represent better performance

Processor	Relative Gaming Score	
AMD Ryzen 9 9955HX3D		9,834
Intel Core Ultra 9 275HX		8,937
Intel Core Ultra 7 255HX		8,128
Intel Core Ultra 7 265		8,089
Intel Core Ultra 7 265H		7,774
Intel Core i9-14900HX		7,051
AMD Ryzen AI Max 390		7,027
Intel Core 7 250H		6,905
AMD Ryzen AI Max Pro 390		6,823
Intel Core i9-13900HX		6,783
Intel Core i9-13980HX		6,764
Intel Core i9-13950HX		6,757
Intel Core Ultra 5 135U		3,964

Software

- BurnInTest
- PerformanceTest
- OSForensics
- MemTest86

Hardware

- USB3.0 Loopback Plugs
- USB2.0 Loopback Plugs
- PCIe Test Cards
- USB Power Delivery Tester

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› Zoom Search Engine

› Free Software

CPU Benchmarks

Benchmarks

› CPU Benchmarks

› Video Card Benchmarks

› Hard Drive Benchmarks

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Industrial



CL4 Series

M.2 2230/2242/2280 | NVMe™ PCIe® SSD

KEY BENEFITS

- High Performance NVMe PCIe
- Low latency
- Slim form factor
- LDPC technology

APPLICATIONS

- Office Workloads
- SQL Logging
- PC Caching
- Boot

PCIE GEN 4 ADVANTAGE

Meet the perfect solid-state drive solution for boot and caching needs. The CL4 SSD series boasts the latest PCIe Gen 4 x4 interface that delivers 2x faster data transfers rates than the Gen 3 version, up to 16GT/s. CL4 delivers superior speed with random read/write performance of up to 450,000/400,000 IOPS.

SMALL BUT POWERFUL

With its small M.2 form factor, CL4 takes up less space and can easily fit into today's ultra-thin notebooks. Built to store your data efficiently and securely, CL4 supports NVMe protocol providing better performance than SATA SSD to reduce latency, increase IOPs and lower power consumption.

THE FIRMWARE ADVANTAGE

Our teams work closely with industry-leading chip manufacturers to develop solutions specific to your needs. With customized proprietary firmware, CL4 will provide superior performance at consistent speeds for years to come.

ENHANCE ENDURANCE WITH LDPC

Take advantage of the latest improvement in error correction with LDPC. LDPC has greater correction power than conventional BCH, so the life of the drive will last longer.

QUALITY YOU CAN TRUST

Designed and manufactured in-house, we have dedicated teams and on-site testing capabilities for component and compatibility verification. This process ensures the quality each SSD and ability to operate successfully in a wide range of complex hardware and operating system environments.

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CL4 Series NVMe™ PCIe® SSD

	CI 4-3D256 CI 4-4D256 CI 4-6D256	CI 4-3D512 CI 4-4D512 CI 4-6D512	CI 4-3D1024 CI 4-4D1024 CI 4-6D1024
Configuration			
Capacity	256 GB	512GB	1 TB
Interface		NVMe PCIe Gen 4 x4	
Form Factor		M.2 2230/ M.2 2242/M.2 2280	
Performance			
Sequential Read/Write[1]	3,200/2,100 MB/s	3,500/2,100 MB/s	3,700/2,600 MB/s
4K Random Read/Write[1]	400K/350K IOPS	400K/350K IOPS	450K/400K IOPS
TBW	340	680	1360
Reliability			
Power on/off cycles		50,000	
MTBF		> 3 million hours	
Warranty		3 Years	
Features			
ECC		LDPC Gen 4 Engine	
S.M.A.R.T.		Supported	
NVMe Deallocate		Supported	
TCG-OPAL 2.0		Optional	
Power Consumption			
Typical		4W	
Sleep Mode		5mW	
Environment			
Operating Temperature		0 to 70° C	
Non-operating Temperature		-40 to 85° C	
Power-On Ready		500 ms	

[1] [illegible]

For more information, please visit:

ssstc.com

HEADQUARTERS
1F., 127, Jian Kang Road, Zhonghe,
New Taipei, Taiwan 235

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Memory Module Datasheet

DDR5-5600 SODIMM
Based on 16Gb P-die

Jul 04th, 2024

Rev 1.0

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Proposta de Preço ITEM 3 - Pregão Nº 12/2024 (1668798) SEI 2025.001317 / pg. 661
Identificação interna do documento: I2SE6K90B9-TDFBBC1

Ordering Information

Part Number	Description	Device Vendor
ZMS5WMC3C1J0B46SPG	8GB SODIMM (1Gx64) 1Rx16, DDR5-5600 (46-45-45), 1Gx16 based IC, 262-pin, 1.1V, 30.00 mm, Halogen-Free (RoHS Compliant)	IC Zilia P/N ZDRPAH6Y16XCWM1N9T Samsung IC ref. P/N K4RAH165VP-BCWM, Samsung module ref. P/N M425R1GB4PB0-CWMOD
ZMS5WMC8C2J0B46SPG	16GB SODIMM (2Gx64) 1Rx8, DDR5-5600 (46-45-45), 2Gx8 based IC, 262-pin, 1.1V, 30.00 mm, Halogen-Free (RoHS Compliant)	IC Zilia P/N ZDRPAH2Y08XCWM8N9T Samsung IC ref. P/N K4RAH086VP-BCWM Samsung module ref. P/N M425R2GA3PB0-CWMOD
ZMS5WMC8C4J0B46SPG	32GB SODIMM (4Gx64) 2Rx8, DDR5-5600 (46-45-45), 2Gx8 based IC, 262-pin, 1.1V, 30.00 mm, Halogen-Free (RoHS Compliant)	IC Zilia P/N ZDRPAH2Y08XCWM8N9T Samsung IC ref. P/N K4RAH086VP-BCWM, Samsung module ref. P/N M425R4GA3PB0-CWMOD

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Identificação interna do documento: I2SE6K90B9-TDFBBQ1

Part Number Decoder

Z	M	S	5	W	M	C	#	C	#	J	0	B	4	6	S	P	G
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

1	**Module Manufacturer** **Z:** Zilia Technologies
2	**Product Identification** **M:** Memory Module (RoHS & Halogen-Free & Sb-Free)
3	**DIMM Type** **S:** Small Outline DIMM
4	**DRAM Component Type** **5:** DDR5 SDRAM
5~6	**Speed** **WM:** DDR5-5600B (46-45-45)
7	**Temperature & Power** **C:** Commercial Temp (0°~85°C) & Normal Power
8	**DRAM Bit Organization** **3:** x16 **8:** x8
9	**DRAM Package Type** **C:** FBGA(Flip-Chip)
10~11	**Module Depth** **1J**: 1Gb **2J**: 2Gb **4J**: 4Gb
12	**PCB Revision** **0:** None
13	**PMIC & RCD Information** **B:** RNS
14~15	**Module Pinout/Data Width** **46:** 262-Pin x64
16	**Module Design** **S:** Samsung
17	**DRAM IC Generation** **P:** P-die
18	**Internal Code** **G**

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Identificação interna do documento: H2SE6K90B9-TDFBBG1

Revision History

Date	Description
Jul 04th, 2024	Initial release.

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1.0 DDR5 SMALL OUTLINE DIMM ORDERING INFORMATION

[Table 1] Ordering Information

Part Number	Density	Organization	Component Composition	Number of Rank	Height
ZMS5WMC3C1J0B46SPG	8GB	1Gx64	1Gx16(ZDRPAH6Y16XCWM1N9T) * 4	1	30mm
ZMS5WMC8C2J0B46SPG	16GB	2Gx64	2Gx8(ZDRPAH2Y08XCWM8N9T) * 8	1	30mm
ZMS5WMC8C4J0B46SPG	32GB	4Gx64	2Gx8(ZDRPAH2Y08XCWM8N9T) * 16	2	30mm

2.0 KEY FEATURES

[Table 2] Speed Bin

Speed	DDR5-4400	DDR5-4800	DDR5-5200	DDR5-5600	Unit
	36-36-36	40-39-39	42-42-42	46-45-45	
tCK(min)	0.454	0.416	0.384	0.357	ns
CAS Latency	36	40	42	46	nCK
tRCD(min)	16.000	16.000	16.000	16.000	ns
tRP(min)	16.000	16.000	16.000	16.000	ns
tRAS(min)	32.000	32.000	32.000	32.000	ns
tRC(min)	48.000	48.000	48.000	48.000	ns

- JEDEC standard compliant.
- VDD = VDDQ = 1.1V (1.067V(- 3%) ~ 1.166V(+6%)).
- VPP = 1.8V (1.746 (-3%) ~ 1.908 (+6%).
- 2000MHz fCK for 4000Mb/sec/pin, 2200MHz fCK for 4400Mb/sec/pin, 2400MHz fCK for 4800Mb/sec/pin. 2600MHz fCK for 5200Mb/sec/pin 2800MHz fCK for 5600Mb/sec/pin.
- 32 Banks (8 Bank Groups).
- Programmable CAS Latency (posted CAS): 22,26,28,30,32,36,40,42,46,50
- Programmable CAS Write Latency (CWL) = CL-2.
- 16-bit prefetch.
- Burst Length: 16 by default. 8 with tCCD=8, which does not allow gapless READ or WRITE, where BC8 and BL32 refer to CA5 BL*=L.
- Bi-directional Differential Data-Strobe.
- Internal ZQ calibration via Multi-Purpose Command (MPC) - ZQcal start and ZQcal Latch.
- On Die Termination (ODT) via Mode Register setting : RTT_PARK, RTT_WR, RTT_NOM_WR, RTT_NOM_RD.
- Average Refresh period 3.9us at lower than TCASE 85°C, 1.95us at 85°C < TCASE < 95 °C.
- Connectivity Test Mode (TEN) is supported.
- Asynchronous Reset.

3.0 ADDRESS CONFIGURATION

[Table 3] Address Information

Configuration		2Gb x8	1Gb x16
Bank Address	BG Address	BG0~BG2	BG0~BG1
	Bank Address in a BG	BA0~BA1	BA0~BA1
	# BG / # Banks per BG / # Banks	8 / 4 / 32	4 / 4 / 16
Row ddress		R0~R15	R0~R15
Column Address		C0~C9	C0~C9
Page size		1KB	2KB

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4.0 SMALL OUTLINE DIMM PIN INFORMATION

[Table 4] PIN Configuration

Pin#	Front Side	Pin#	Back Side	Pin#	Front Side	Pin#	Back Side	Pin#	Front Side	Pin#	Back Side
1	VIN_BULK	2	HSA	99	CB2_A	100	DQS4_A_c	195	DQ6_B	196	VSS
3	VIN_BULK	4	HSCL	101	VSS	102	DQS4_A_t	197	VSS	198	DQ7_B
5	RFU	6	HSDA	103	CB3_A	104	VSS	199	DQ8_B	200	VSS
7	PWR_GOOD	8	PWR_EN	105	VSS	106	CS0_A_n	201	VSS	202	DQ9_B
9	VSS	10	VSS	107	CA0_A	108	ALERT_n	203	DQ10_B	204	VSS
11	DQ0_A	12	DQ1_A	109	CA1_A	110	CS1_A_n	205	VSS	206	DQ11_B
13	VSS	14	VSS	111	VSS	112	VSS	207	DQS1_B_c	208	VSS
15	DQ2_A	16	DQ3_A	113	CA2_A	114	CA3_A	209	DQS1_B_t	210	DM1_B_n
17	VSS	18	VSS	115	CA4_A	116	CA5_A	211	VSS	212	VSS
19	DM0_A_n	20	DQS0_A_c	117	VSS	118	VSS	213	DQ12_B	214	DQ13_B
21	VSS	22	DQS0_A_t	119	CA6_A	120	CA7_A	215	VSS	216	VSS
23	DQ4_A	24	VSS	121	CA8_A	122	CA9_A	217	DQ14_B	218	DQ15_B
25	VSS	26	DQ5_A	123	VSS	124	VSS	219	VSS	220	VSS
27	DQ6_A	28	VSS	125	CA10_A	126	CA11_A	221	DQ16_B	222	DQ17_B
29	VSS	30	DQ7_A	KEY				223	VSS	224	VSS
31	DQ8_A	32	VSS	127	CA12_A	128	RFU	225	DQ18_B	226	DQ19_B
33	VSS	34	DQ09_A	129	VSS	130	VSS	227	VSS	228	VSS
35	DQ10_A	36	VSS	131	CK0_A_t	132	CK1_A_t	229	DM2_B_n	230	DQS2_B_c
37	VSS	38	DQ11_A	133	CK0_A_c	134	CK1_A_c	231	VSS	232	DQS2_B_t
39	DQS1_A_c	40	VSS	135	VSS	136	VSS	233	DQ20_B	234	VSS
41	DQS1_A_t	42	DM1_A_n	137	CK0_B_t	138	CK1_B_t	235	VSS	236	DQ21_B
43	VSS	44	VSS	139	CK0_B_c	140	CK1_B_c	237	DQ22_B	238	VSS
45	DQ12_A	46	DQ13_A	141	VSS	142	VSS	239	VSS	240	DQ23_B
47	VSS	48	VSS	143	RFU	144	CA12_B	241	DQ24_B	242	VSS
49	DQ14_A	50	DQ15_A	145	CA11_B	146	CA10_B	243	VSS	244	DQ25_B
51	VSS	52	VSS	147	VSS	148	VSS	245	DQ26_B	246	VSS
53	DQ16_A	54	DQ17_A	149	CA9_B	150	CA8_B	247	VSS	248	DQ27_B
55	VSS	56	VSS	151	CA7_B	152	CA6_B	249	DQS3_B_c	250	VSS
57	DQ18_A	58	DQ19_A	153	VSS	154	VSS	251	DQS3_B_t	252	DM3_B_n
59	VSS	60	VSS	155	CA5_B	156	CA4_B	253	VSS	254	VSS
61	DM2_A_n	62	DQS2_A_c	157	CA3_B	158	CA2_B	255	DQ28_B	256	DQ29_B
63	VSS	64	DQS2_A_t	159	VSS	160	VSS	257	VSS	258	VSS
65	DQ20_A	66	VSS	161	CS0_B_n	162	CA1_B	259	DQ30_B	260	DQ31_B
67	VSS	68	DQ21_A	163	RESET_n	164	CA0_B	261	VSS	262	VSS
69	DQ22_A	70	VSS	165	CS1_B_n	166	VSS				
71	VSS	72	DQ23_A	167	VSS	168	CB0_B				
73	DQ24_A	74	VSS	169	DQS4_B_c	170	VSS				
75	VSS	76	DQ25_A	171	DQS4_B_t	172	CB1_B				
77	DQ26_A	78	VSS	173	VSS	174	VSS				
79	VSS	80	DQ27_A	175	CB3_B	176	CB2_B				
81	DQS3_A_c	82	VSS	177	VSS	178	VSS				
83	DQS3_A_t	84	DM3_A_n	179	DQ0_B	180	DQ1_B				
85	VSS	86	VSS	181	VSS	182	VSS				
87	DQ28_A	88	DQ29_A	183	DQ2_B	184	DQ3_B				
89	VSS	90	VSS	185	VSS	186	VSS				
91	DQ30_A	92	DQ31_A	187	DM0_B_n	188	DQS0_B_c				
93	VSS	94	VSS	189	VSS	190	DQS0_B_t				
95	CB0_A	96	CB1_A	191	DQ4_B	192	VSS				
97	VSS	98	VSS	193	VSS	194	DQ5_B				

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[Table 5] PIN Description

Pin Name	Description
CA0_A – CA12_A, CA0_B – CA12_B	SDRAM Command/Address bus
CS0_A_n – CS1_A_n, CS0_B_n – CS1_B_n	SDRAM Chip Select
DQ0_A – DQ31_A, DQ0_B – DQ31_B	DIMM memory data bus
CB0_A – CB3_A, CB0_B – CB3_B	DIMM ECC check bits
DQS0_A_t – DQS4_A_t, DQS0_B_t – DQS4_B_t	SDRAM data strobes (positive line of differential pair)
DQS0_A_c – DQS4_A_c, DQS0_B_c – DQS4_B_c	SDRAM data strobes (negative line of differential pair)
DM0_A_n – DM3_A_n, DM0_B_n – DM3_B_n	SDRAM data masks
CK0_A_t, CK1_A_t, CK0_B_t, CK1_B_t	SDRAM clocks (positive line of differential pair)
CK0_A_c, CK1_A_c, CK0_B_c, CK1_B_c	SDRAM clocks (negative line of differential pair)

Pin Name	Description
HSCL	SidebandBus clock
HSDA	SidebandBus data
HSA	SidebandBus address
ALERT_n	SDRAM ALERT_n
RESET_n	Set DRAMs to a Known State
VIN_BULK	5V power input supply to the PMIC for analog circuits
VSS	Power supply return (ground)
PWR_GOOD	Power good indicator
PWR_EN	PMIC Enable
RFU	Reserved for future use

NOTE :
1) DDR5 SO-DIMM has 2 channels (channel-A and channel-B) of signal bus.
The signals with suffix: _A (e.g. DQ0_A) are for channel-A, and the signals with suffix: _B (e.g. DQ0_B) are for channel-B

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5.0 INPUT/OUTPUT FUNCTIONAL DESCRIPTION

[Table 6] Input/Output Function Description

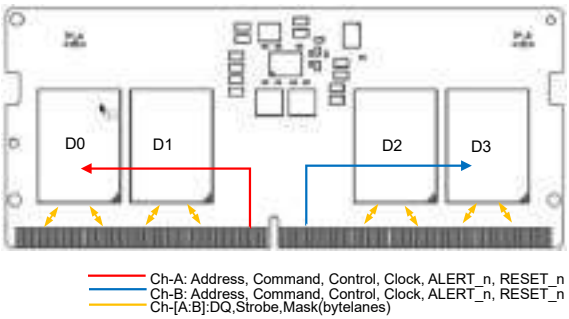
Symbol	Type	I/O Level	Function
CK0_A_t, CK0_A_c, CK1_A_t, CK1_A_c, CK0_B_t, CK0_B_c, CK1_B_t, CK1_B_c	Input	VDD	Clock: CK_t and CK_c are differential clock inputs. All address and control input signals are sampled on the crossing of the positive edge of CK_t and negative edge of CK_c.
CA0_A - CA12_A, CA0_B –CA12_B	Input	VDD	Command/Address Inputs: CA signals provide the command and address inputs according to the Command Truth Table. Note: Since some commands are multi cycle, the pins may not be interchanged between devices on the same bus.
CS0_A_n – CS1_A_n, CS0_B_n – CS1_B_n	Input	VDD	Chip Select: All commands are masked when CS_n is registered HIGH. CS_n provides for external Rank selection on systems with multiple Ranks.
DQ0_A – DQ31_A, DQ0_B – DQ31_B	Input/Output	VDDQ	Data Input/Output: Bi-directional data bus. If CRC is enabled via Mode register then CRC code is added at the end of Data Burst.
CB0_A – CB3_A, CB0_B – CB3_B	Input/Output	VDDQ	DIMM ECC check bits.
DQS0_A_t – DQS4_A_t, DQS0_A_c – DQS4_A_c, DQS0_B_t – DQS4_B_t, DQS0_B_c – DQS4_B_c	Input/Output	VDDQ	Data Strobe: output with read data, input with write data. Edge-aligned with read data, centered in write data. DDR5 SDRAM supports differential data strobe only and does not support single-ended.
DM0_A_n – DM3_A_n, DM0_B_n – DM3_B_n	Input	VDDQ	Input Data Mask: DM_n is an input mask signal for write data. Input data is masked when DM_n is sampled LOW coincident with that input data during a Write access. DM_n is sampled on both edges of DQS. For x8 device, the function of DM_n is enabled by MR5:OP[5]=1.
ALERT_n	Input/Output	VDD	Alert: If there is error in CRC, then Alert_n goes LOW for the period time interval and goes back HIGH. During Connectivity Test mode, this pin works as input. Using this signal or not is dependent on system. In case of not connected as Signal, ALERT_n Pin must be bounded to VDDQ on board.
RESET_n	Input	VDD	Active Low Asynchronous Reset: Reset is active when RESET_n is LOW, and inactive when RESET_n is HIGH. RESET_n must be HIGH during normal operation. RESET_n is a CMOS rail to rail signal with DC high and low at 80% and 20% of VDDQ,
HSCL	Input	1.0V	Host SidebandBus bus clock, supplied by the master.
HSDA	Input/Output	1.0V	Host SidebandBus data, connected from the master to hubs or host bus client devices.
HSA	Input	2.1V max	Host SidebandBus bus device ID address pin; input to a hub or other client device to distinguish between identical devices in the I3C Basic address range.
RFU			Reserved for Future Use. No on DIMM electrical connection is present.
PWR_GOOD	Input/Output	Open Drain	Power good indicator. Open Drain output. The PMIC floats this pin high when VIN_Bulk input supply as well as all enabled output buck regulators and all LDO regulator tolerance threshold is maintained as configured in appropriate register. The PMIC drives this pin low when VIN_Bulk input goes below the threshold or when any of the enabled switch output regulators exceed the threshold configured in the appropriate register or any LDO output regulator exceeds the threshold tolerance. Input: The PMIC disables its output regulators when this pin is low. The LDO outputs shall remain on.
PWR_EN	Input	3.3V	PMIC Enable. When this pin is high, the PMIC turns on the regulator. When this pin is low, the PMIC turns off the regulator. This signal is connected to PMIC's VR_EN pin.
VIN_BULK	Supply	5V	5 V power input supply to the PMIC for analog circuits.
VSS	Supply		Ground.

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6.0 FUNCTION BLOCK DIAGRAM

6.1 8GB, x64 DIMM (Populated as 1 rank of x16 DDR5 SDRAMs)

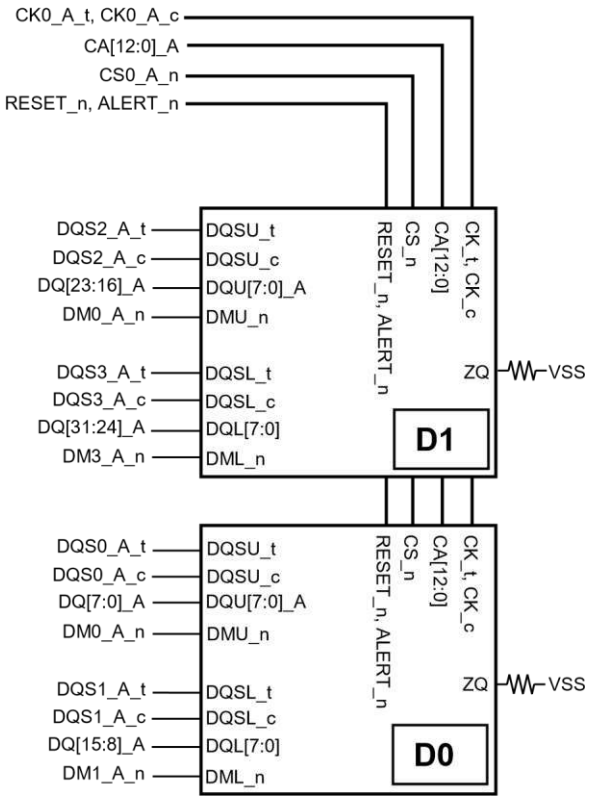
6.1.1 8GB, x64 DIMM (Populated as 1 rank of x16 DDR5 SDRAMs) – Part 1 of 4



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6.1.2 8GB, x64 DIMM (Populated as 1 rank of x16 DDR5 SDRAMs) – Part 2 of 4

Channel A



NOTE :

1) Unless otherwise noted resistors are 15Ω ± 5% 2) ZQ resistors are 240Ω ± 1%.

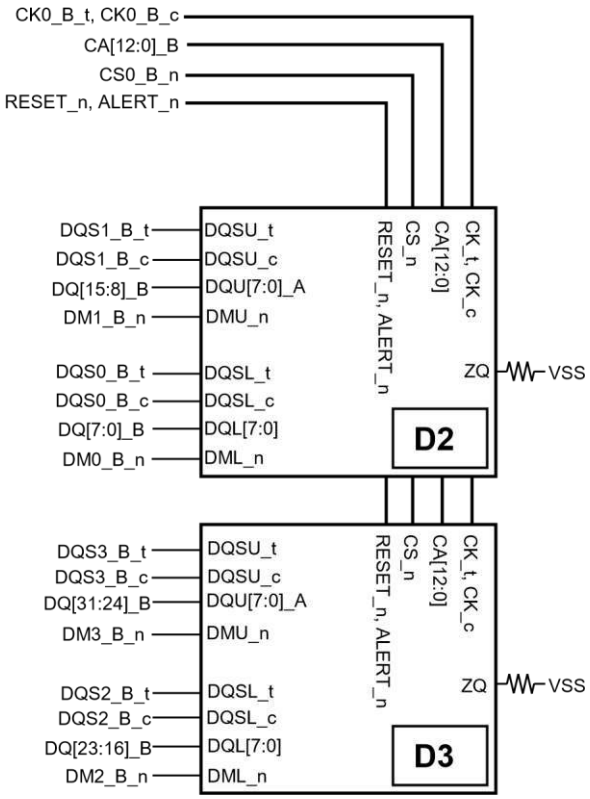
3) CK1_[A:B]_t/c edge pin signals are each terminated with 33Ω ± 5% resistor to VSS.

4) CS1_[A:B]_n edge pin signals are each terminated with 39Ω ± 5% resistor to VSS.

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6.1.3 8GB, x64 DIMM (Populated as 1 rank of x16 DDR5 SDRAMs) – Part 3 of 4

Channel B

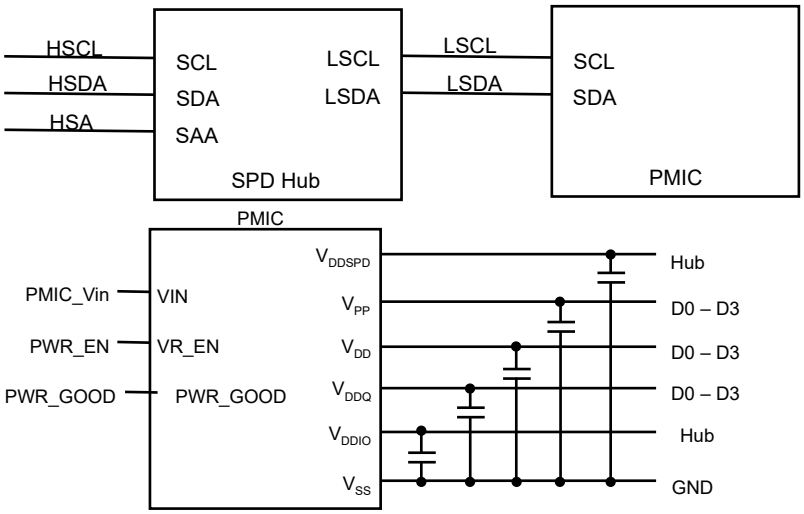


NOTE :

1) Unless otherwise noted resistors are
15Ω ± 5% 2) ZQ resistors are 240Ω ± 1%.
3) CK1_[A:B]_t/c edge pin signals are each terminated with 33Ω ± 5% resistor to VSS.
4) CS1_[A:B]_n edge pin signals are each terminated with 39Ω ± 5% resistor to VSS.

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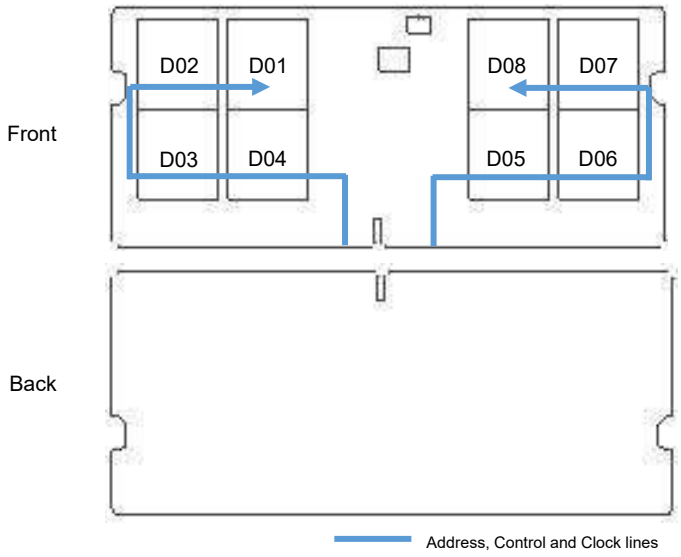
6.1.4 8GB, x64 DIMM (Populated as 1 rank of x16 DDR5 SDRAMs) – Part 4 of 4



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6.2 16GB, x64 DIMM (Populated as 1 rank of x8 DDR5 SDRAMs)

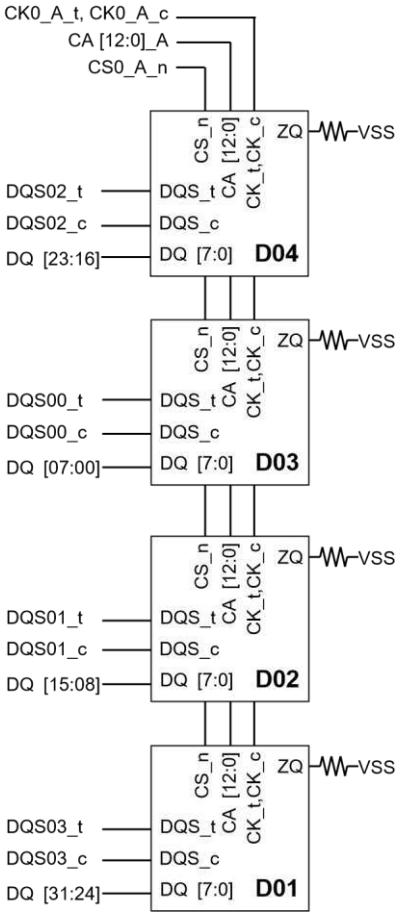
6.2.1 16GB, x64 DIMM (Populated as 1 rank of x8 DDR5 SDRAMs) - Part 1 of 4



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6.2.2 16GB, x64 DIMM (Populated as 1rank of x8 DDR5 SDRAMs) - Part 2 of 3

Channel A



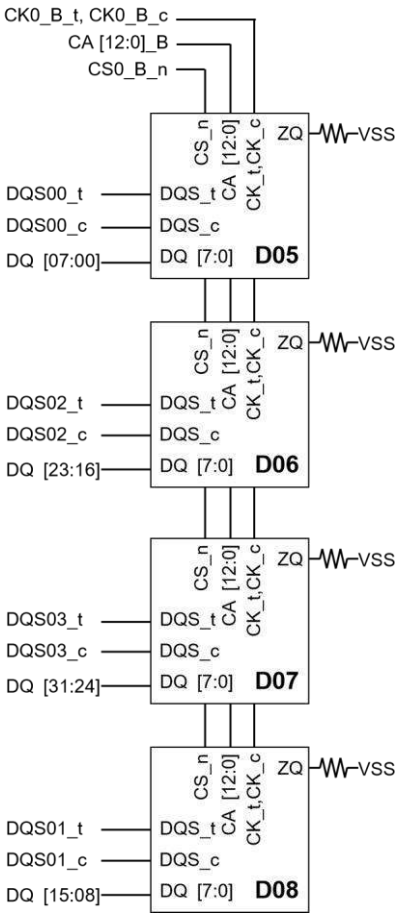
NOTE :

1) ZQ resistors are 240 Ω ± 1%.

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Identificação interna do documento: I2SE6K90B9-TDFBBQ1

6.2.3 16GB, x64 DIMM (Populated as 1rank of x8 DDR5 SDRAMs) - Part 3 of 3

Channel B

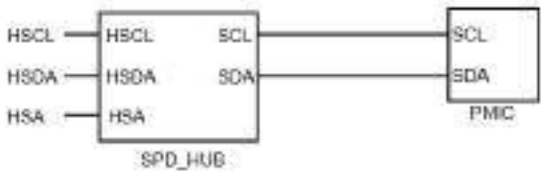


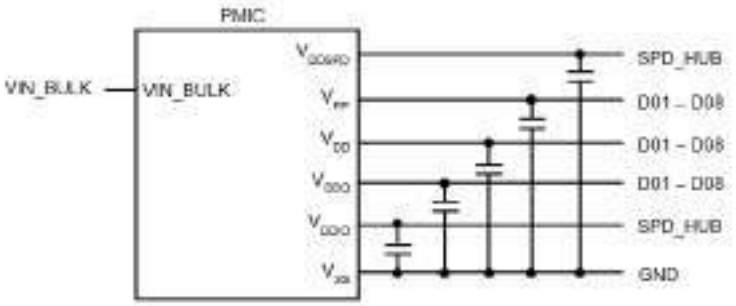
NOTE :

1) ZQ resistors are 240 Ω ± 1%.

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Identificação interna do documento: H2SE6K90B9-TDFBBQ1

6.2.4 16GB, x64 DIMM (Populated as 1 rank of x8 DDR5 SDRAMs) - Part 4 of 4

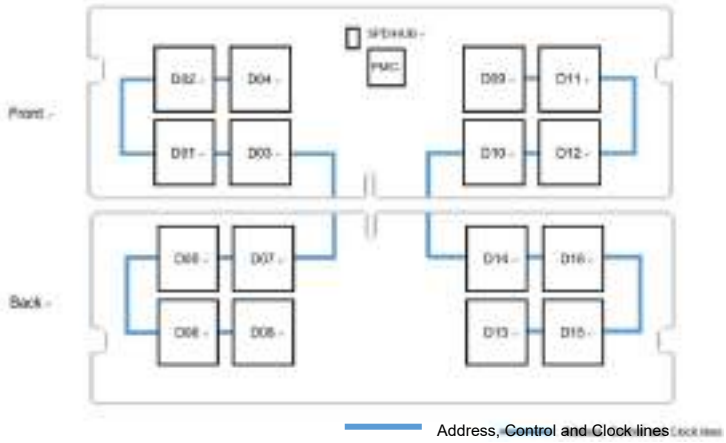




Proposta de Preço ITEM 3 - Identificação interna do documento: H2SE6K90B9-TDFBBC1 SEI 2025.001317 / pg. 677

6.3 32GB, x64 DIMM (Populated as 2 ranks of x8 DDR5 SDRAMs)

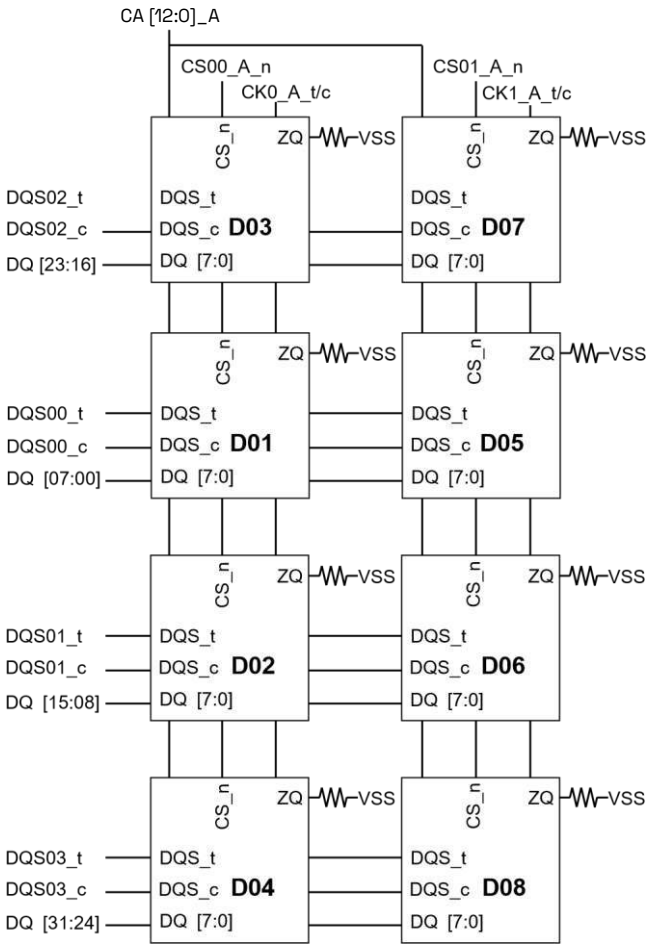
6.3.1 32GB, x64 DIMM (Populated as 2 ranks of x8 DDR5 SDRAMs) - Part 1 of 4



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6.3.2 32GB, x64 DIMM (Populated as 2 ranks of x8 DDR5 SDRAMs) - Part 2 of 4

Channel A



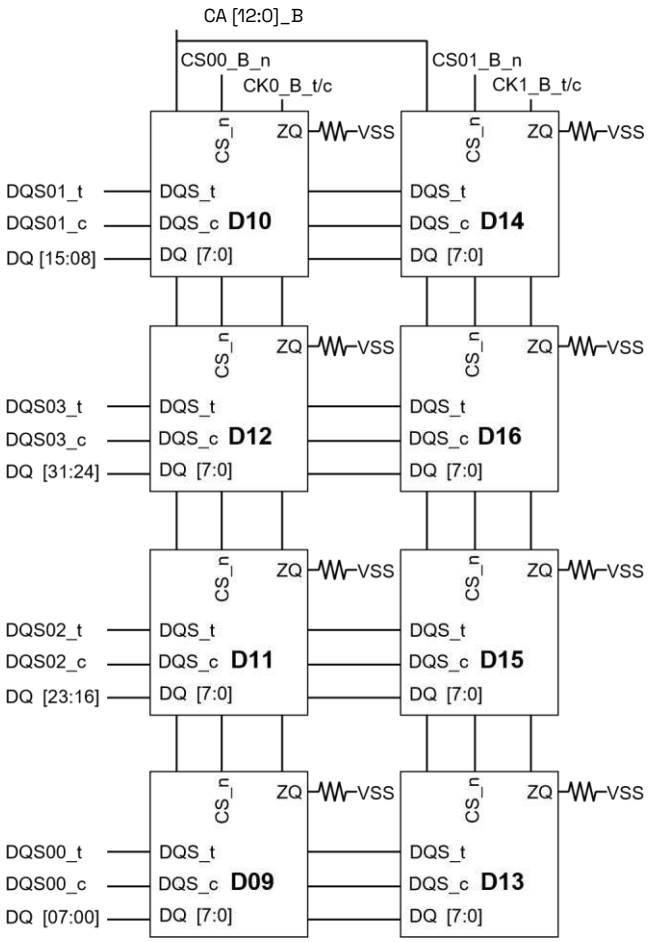
NOTE :

1) ZQ resistors are 240 Ω ± 1%.

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6.3.3 32GB, x64 DIMM (Populated as 2 ranks of x8 DDR5 SDRAMs) - Part 3 of 4

Channel B

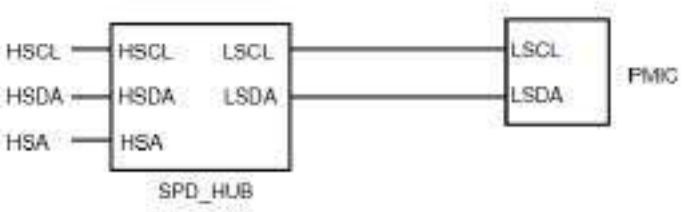


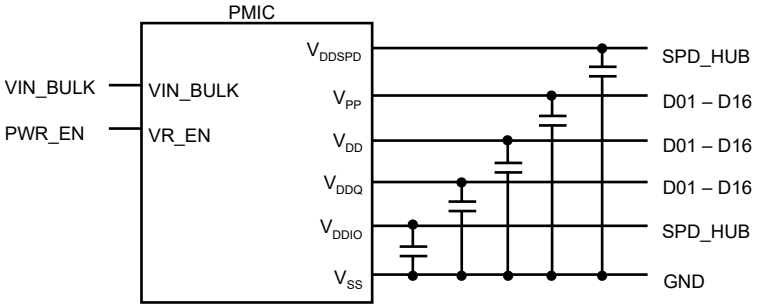
NOTE :

1) ZQ resistors are 240 Ω ± 1%.

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Identificação interna do documento: I2SE6K90B9-TDFBBC1

6.3.4 32GB, x64 DIMM (Populated as 2 ranks of x8 DDR5 SDRAMs) - Part 4 of 4





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7.0 AC & DC OPERATING CONDITIONS

7.1 DIMM Voltage Requirements

The DIMM input voltage requirements and the SDRAM voltage requirements are not identical. The DIMM voltage requirements must meet the PMIC input voltage requirements. The PMIC output voltage requirements must meet the SDRAM voltage requirements. There must be some allowance for a small voltage drop across the DIMM for both supply voltages and PMIC output voltages. Table 15 defines the requirements from the Host at the DIMM socket and at the post-PMIC SDRAM pin. Some modules have lower current requirements. Each specific module configuration must meet the PMIC 50x0, SDRAM, DDR5RCDxx and DDR5DBxx voltage requirements for its worst case supply currents

[Table 15] DDR5 SODIMM DC Operating Voltage [1,2,3]

Symbol	Parameter	Voltage Rating (Volts)			Maximum Expected Current (Amps)	Power State
		Minimum	Typical	Maximum		
VIN_BULK	Host Supply Voltage	4.25	5.0	5.5	2A	Operational
SWA, SWB	PMIC Output Supply Voltage	-	1.1	-	6	Operational
SWA+SWB	PMIC Output Supply Voltage	-	1.1	-	12	Operational
SWC	PMIC Output Supply Voltage	-	1.8	-	2	Operational
1.8V LDO	PMIC Output Supply Voltage	-	1.8	-	0.025	Operational
1.0V LDO	PMIC Output Supply Voltage	-	1.0	-	0.020	Operational

NOTE:
1) During first power on, the input voltage supply must reach minimum 4.25 V for PMIC to detect valid input supply. 2) The ramp up rate between 300 mV and 4.0 V.
3) The ramp down rate between 4.0 V and 300 mV.
4) The area under the curve above VIN_Bulk = TBD V. VIN_Bulk_AC spec must also be satisfied.
5) The minimum input current requirement is to deliver the maximum output current on VOUT_1.8V and VOUT_1.0V LDO plus the current
6) VIN_Bulk = 5.0 V. Measured at room temperature. All circuitry including output regulators and LDOs are off. VR_EN signal is static
7) VIN_Bulk = 5.0 V. Measured at room temperature. All output regulators and LDOs are on with 0 A output load. VR_EN signal is static 8) 20 MHz bandwidth limited measurement for all voltages in the table
9) Voltages are measured at the DIMM gold fingers and at PMIC output pins
10) The SDRAM specification must be met and take precedence over this document
11) Maximum current establishes the platform maximum current regulation point. It provides a data point for DIMM developers to set power plane impedances 12) Typical voltage is platform dependent. This is a suggested value only

7.2 Recommended Operating Temperature Ranges

[Table 16] Recommended Operating Temperature Ranges

Parameter/Condition	Device Rating	Symbol	Min	Normal	Extended
Commercial Temperature	CT	TOPER-CT	0°C	85°C	95°C
Industrial Temperature	IT	TOPER-IT	-40°C	85°C	95°C

NOTE:
1) The operating temperature is the case surface temperature on the center-top side of the DDR5 device. For measurements conditions, refer to JESD51-2 2) Normal is the maximum limit when device is operating in the Normal Temperature Mode
3) Extended is the maximum limit when device is operating in the Extended Temperature Mode
4) Support for the Industrial Temperature device is TBD

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8.0 AC & DC INPUT MEASUREMENT LEVELS

8.1 CA Rx Voltage and Timings

The following draft assumes internal CA VREF. If the VREF is external, the specs will be modified accordingly.

The command and address (CA) including CS input receiver compliance mask for voltage and timing is shown in the figure below. All CA signals apply the same compliance mask and CS signal applies its own compliance mask independently. All signals applied to the compliance mask operate in single data rate mode.

The CA input receiver mask for voltage and timing is shown in the figure below is applied across all CA pins. The receiver mask (Rx Mask) defines the area that the input signal must not encroach in order for the DRAM input receiver to be expected to be able to successfully capture a valid input signal; it is not the valid data-eye.

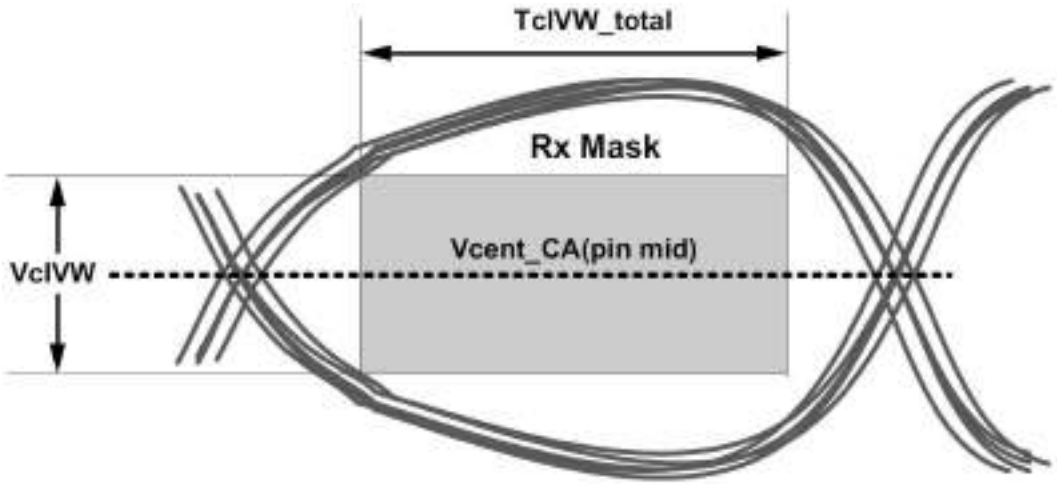


Figure 12. CA Receiver (Rx) mask

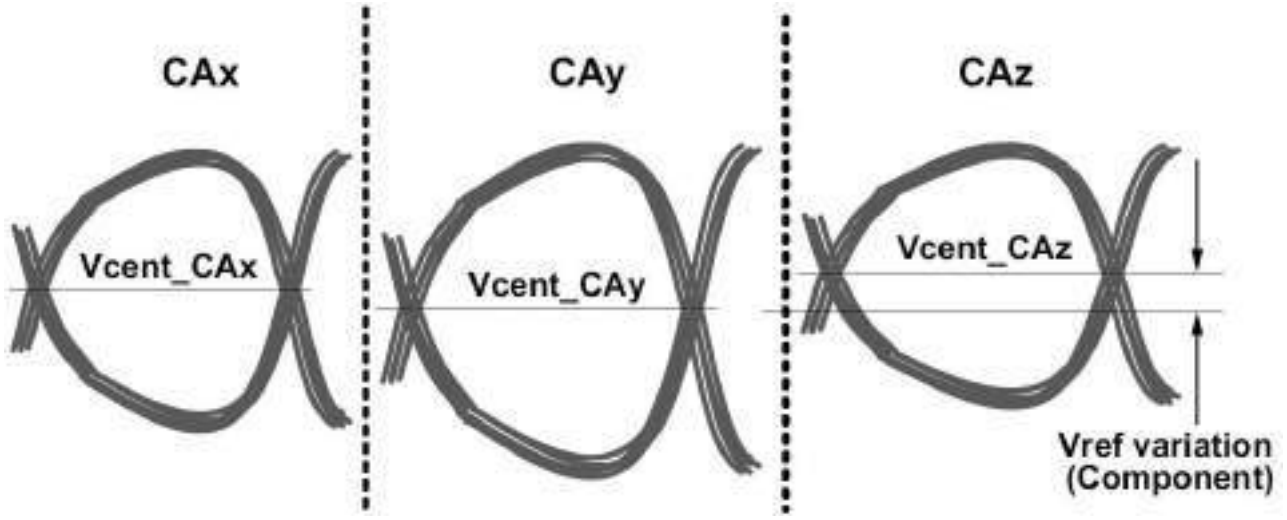
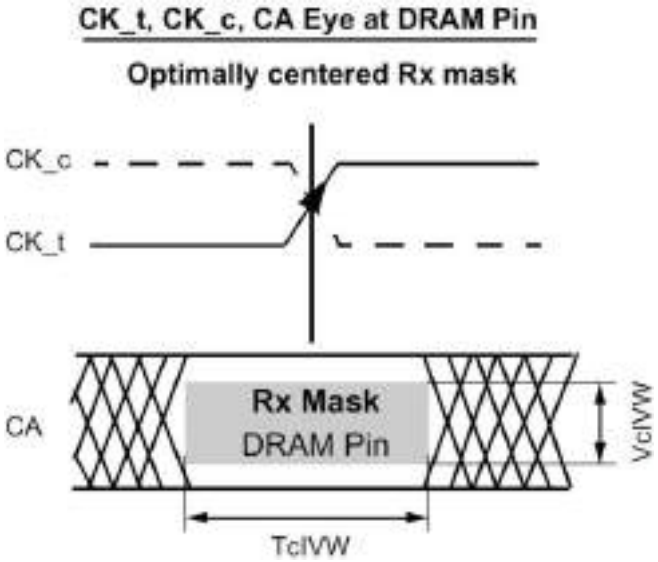


Figure 13. Across pin V_{REF}CA voltage variation

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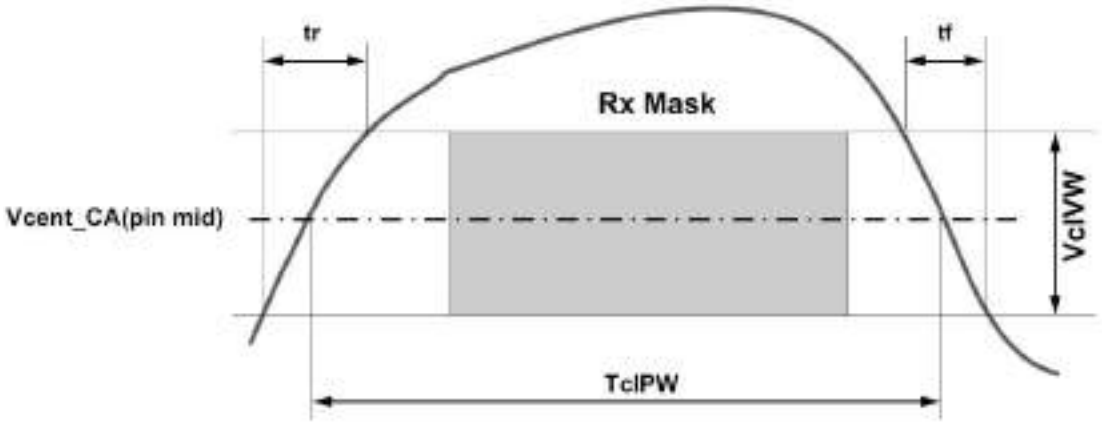
Vcent_CA(pin mid) is defined as the midpoint between the largest Vcent_CA voltage level and the smallest Vcent_CA voltage level across all CA and CS pins for a given DRAM component. Each CA Vcent level is defined by the center, i.e. widest opening, of the cumulative data input eye as depicted in Figure 14. This clarifies that any DRAM component level variation must be accounted for within the DRAM CA Rx mask. The component level VREF will be set by the system to account for Ron and ODT settings.



TcIVW is not necessarily center aligned on CK_t/CK_c crossing at the DRAM pin, but is assumed to be center aligned at the DRAM Latch.

Figure 14. CA Timings at the DRAM Pins

All of the timing terms in Figure 14 are measured from the CK_t/CK_c to the center (midpoint) of the TcIVW window taken at the VcIVW_total voltage levels centered around Vcent_CA (pin mid).



NOTE :
1) SRIN_cIVW=VcIVW_Total/(tr or tf), signal must be monotonic within tr and tf range

Figure 15. CA TcIPW and SRIN_cIVW definition (for each input pulse)

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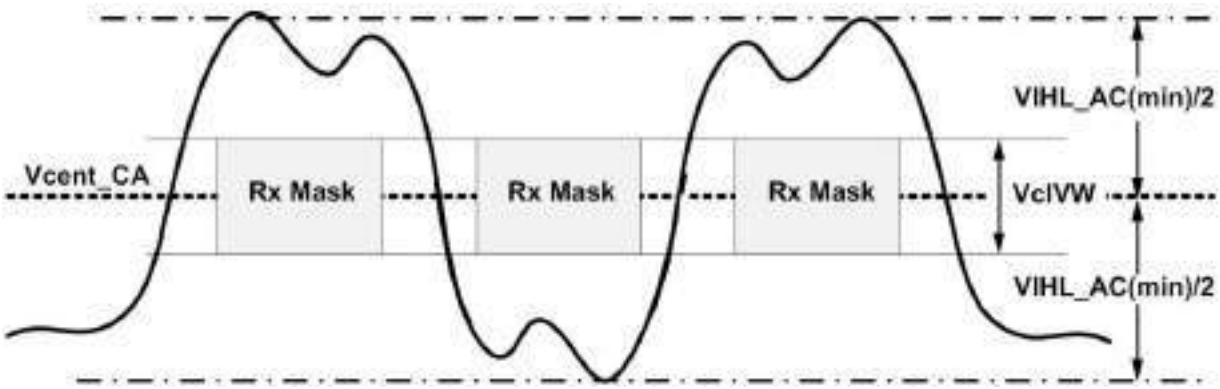


Figure 16. CA VIHL_AC definition (for each input pulse)

[Table 17] DRAM CA, CS Parametric values

Parameter	Symbol	DDR5-4400 to 4800		DDR5-5200 to 5600		Unit	Notes
		Min	Max	Min	Max		
Rx Mask voltage - p-p	VciVW	-	130	-	80 (Cl max=0.55pF) 85 (Cl max=0.5pF)	mV	1,2,4
Rx Timing Window	TclVW	-	0.2	-	0.2	UI*	1,2,3,4,8
CA Input Pulse Amplitude	VIHL_AC	150		110		mV	7
CA Input Pulse Width	TclPW	0.58		0.58		UI*	5,8
Input Slew Rate over VclVW	SRIN_clVW	1	7	1	7	V/ns	6

NOTE:
1) CA Rx mask voltage and timing parameters at the pin including voltage and temperature drift
2) Rx mask voltage VclVW total(max) must be centered around Vcent_CA(pin mid)
3) Rx differential CA to CK jitter total timing window at the VclVW voltage levels
4) Defined over the CA internal V_{REF} range. The Rx mask at the pin must be within the internal V_{REF} CA range irrespective of the input signal common mode
5) CA only minimum input pulse width defined at the Vcent_CA(pin mid)
6) Input slew rate over VclVW Mask centered at Vcent_CA(pin mid)
7) VIHL_AC does not have to be met when no transitions are occurring
8) UI=tCK(avg)min

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8.2 Input Clock Jitter Specification

8.2.1 Overview

The clock is being driven to the DRAM either by the RCD for SODIMM modules. (Figure 17)

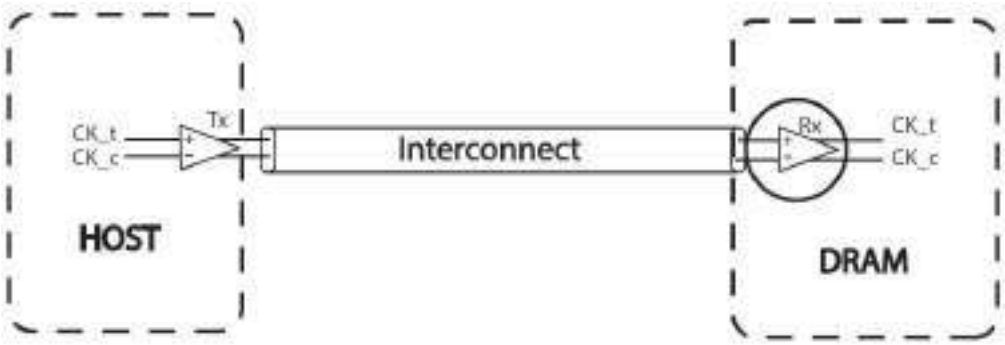


Figure 17. HOST driving clock signals to the DRAM

8.2.2 Specification for DRAM Input Clock Jitter

The Random Jitter (Rj) specified is a random jitter meeting a Gaussian distribution. The Deterministic Jitter (Dj) specified is bounded. Input clock violating the min/max jitter values may result in malfunction of the DDR5 SDRAM device.

[Table 18] DRAM Input Clock Jitter Specifications

[BUJ=Bounded Uncorrelated Jitter; DCD=Duty Cycle Distortion; Dj=Deterministic Jitter; Rj=Random Jitter; Tj=Total jitter; pp=Peak-to-Peak]

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		Min	Max	Min	Max	Min	Max	Min	Max		
DRAM Reference clock frequency	tCK	0.9999* f0	1.0001* f0	0.9999* f0	1.0001* f0	0.9999* f0	1.0001* f0	0.9999* f0	1.0001* f0	MHz	1,11
Duty Cycle Error	tCK_Duty_UI_Error	-	0.05	-	0.05	-	0.05	-	0.05	UI	1,4,11
Rj RMS value of 1-UI Jitter	tCK_1UI_Rj_NoBUJ	-	0.0037	-	0.0037	-	0.0037	-	0.0037	UI (RMS)	3,5,11
Dj pp value of 1-UI Jitter	tCK_1UI_Dj_NoBUJ	-	0.030	-	0.030	-	0.030	-	0.030	UI	3,6,11
Tj value of 1-UI Jitter	tCK_1UI_Tj_NoBUJ	-	0.090	-	0.090	-	0.090	-	0.090	UI	3,6,11
Rj RMS value of N-UI Jitter, where N=2,3	tCK_NUI_Rj_NoBUJ, where N=2,3	-	0.0040	-	0.0040	-	0.0040	-	0.0040	UI (RMS)	3,7,11
Dj pp value of N-UI Jitter, where N=2,3	tCK_NUI_Dj_NoBUJ, where N=2,3	-	0.074	-	0.074	-	0.074	-	0.074	UI	3,7,11
Tj value of N-UI Jitter, where N=2,3	tCK_NUI_Tj_NoBUJ, where N=2,3	-	0.140	-	0.140	-	0.140	-	0.140	UI	3,8,11
Rj RMS value of N-UI Jitter, where N=4,5,6,...,30	tCK_NUI_Rj_NoBUJ, where N=4,5,6,...,30	-	-	-	-	-	-	-	-	UI (RMS)	3,9,11,12
Dj pp value of N-UI Jitter, N=4,5,6,...,30	tCK_NUI_Dj_NoBUJ, where N=4,5,6,...,30	-	-	-	-	-	-	-	-	UI	3,10,11,12
Tj value of N-UI Jitter, N=4,5,6,...,30	tCK_NUI_Tj_NoBUJ, where N=4,5,6,...,30	-	-	-	-	-	-	-	-	UI	3,10,11,12

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NOTE:

1) f0 = Data Rate/2, example: if data rate is 4800MT/s, then f0=2400
2) Rise and fall time slopes (V / nsec) are measured between +100 mV and -100 mV of the differential output of reference clock
3) On-die noise similar to that occurring with all the transmitter and receiver lanes toggling need to be stimulated. When there is no socket in transmitter measurement setup, in many cases, the contribution of the cross-talk is not significant or can be estimated within tolerable error even with all the transmitter lanes sending patterns. When a socket is present, such as DUT being DRAM component, the contribution of the cross-talk could be significant. To minimize the impact of crosstalk on the measurement results, a small group of selected lanes in the vicinity of the lane under test may be turned off (sending DC), while the remaining Tx lanes send patterns to the corresponding Rx receivers so as to excite realistic on-die noise profile from device switching. Note that there may be cases when one of Dj and Rj specs is met and another violated in which case the signaling analysis should be run to determine link feasibility
4) Duty Cycle Error defined as absolute difference between average value of all UI with that of average of odd UI, which in magnitude would equal absolute difference between average of all UI and average of all even UI
5) Rj RMS value of 1-UI jitter without BUJ, but on-die system-like noise present. This extraction is to be done after software correction of DCD
6) Dj pp value of 1-UI jitter(after software assisted DCC).Without BUJ,but on-die system like noise present.Dj indicates Djdd of dual-Dirac fitting,after software correction of DCD
7) Rj RMS value of N-UI jitter without BUJ, but on-die system like noise present. Evaluated for 1 < N < 4. This extraction is to be done after software correction of DCD
8) Dj pp value of N-UI jitter without BUJ, but on-die system like noise present. Evaluated for 1 < N < 4. Dj indicates Djdd of dual-Dirac fitting, after software correction of DCD
9) Rj RMS value of N-UI jitter without BUJ, but on-die system like noise present. Evaluated for 3 < N < 31. This extraction is to be done after software correction of DCD
10) Dj pp value of N-UI jitter without BUJ, but on-die system like noise present. Evaluated for 3 < N < 31. Dj indicates Djdd of dual-Dirac fitting, after software correction of DCD 11) The validation methodology for these parameters will be covered in future ballots
12) If the clock meets total jitter Tj at BER of $1E^{-16}$, then meeting the individual Rj and Dj components of the spec can be considered optional. Tj is defined as Dj + 16.2*Rj for BER of $1E^{-16}$

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8.3 Differential Input Clock (CK_t, CK_c) Cross Point Voltage (VIX)

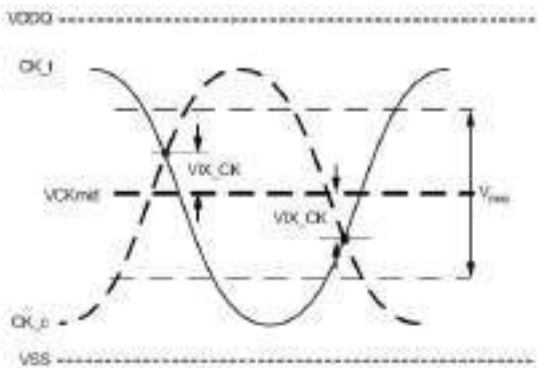


Figure 18. VIX Definition (CK)

[Table 19] Crosspoint Voltage (VIX) for Differential Input Clock

Parameter	Symbol	DDR5-4400 to 5600		Unit	Note
		min	max		
Clock differential input crosspoint voltage ratio	VIX_CK_Ratio	-	50	%	1,2,3

NOTE :
1) The VIX_CK voltage is referenced to VCKmid(mean) = (CK_t voltage + CK_c voltage) /2, where the mean is over 8 UI.
2) VIX_CK_Ratio = (|VIX_CK| / |VRMS|)*100%, where VRMS = RMS(CK_t voltage - CK_c voltage). 3) Only applies when both CK_t and CK_c are transitioning

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8.4 Differential Input Clock Voltage Sensitivity

The differential input clock voltage sensitivity test provides the methodology for testing the receiver's sensitivity to clock by varying input voltage in the absence of Inter-Symbol Interference (ISI), jitter (Rj, Dj, DCD) and crosstalk noise. This specifies the Rx voltage sensitivity requirement. The system input swing to the DRAM must be larger than the DRAM Rx at the specified BER

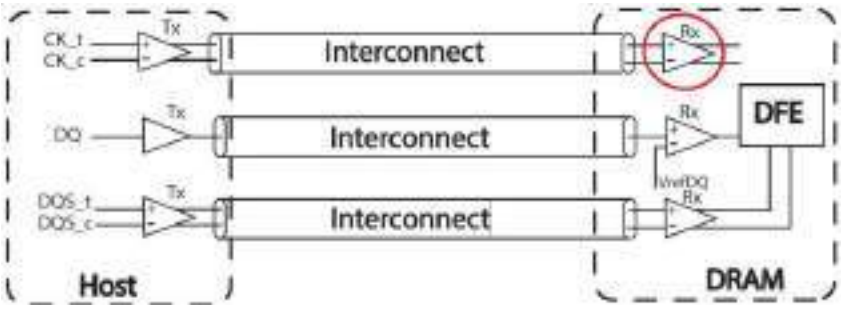


Figure 19. Example of DDR5 Memory Interconnect

8.4.1 Differential Input Clock Voltage Sensitivity Parameter

Differential input clock (CK_t, CK_c) VRx_CK is defined and measured as shown below. The clock receiver must pass the minimum BER requirements for DDR5.

[Table 20] Differential Input Clock Voltage Sensitivity Parameter

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Note
		min	max	min	max	min	max	min	max		
Input Clock Voltage Sensitivity (differential pp)	VRx_CK	-	180	-	160	-	140	-	120	mV	1,2

NOTE:
1) Refer to the minimum BER requirements for DDR5
2) The validation methodology for this parameter is TBD

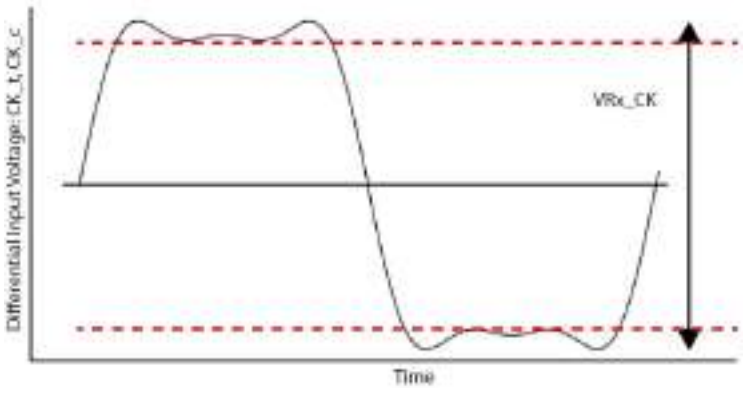


Figure 20. VRx_CK

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8.4.2 Differential Input Voltage Levels for Clock

[Table 21] Differential Clock (CK_t, CK_c) Input Levels

From	Parameter	DDR5 4400 ~ 5600	Note
VIHdiffCK	Differential input high measurement level (CK_t, CK_c)	0.75 x Vdiffpk-pk	1,2
VILdiffCK	Differential input low measurement level (CK_t, CK_c)	0.25 x Vdiffpk-pk	1,2

NOTE:
1) Vdiffpk-pk defined in Figure 21
2) Vdiffpk-pk is the mean high voltage minus the mean low voltage over TBD samples
3) All parameters are defined over the entire clock common mode range

8.4.3 Differential Input Slew Rate Definition for Clock (CK_t, CK_c)

Input slew rate for differential signals (CK_t, CK_c) are defined and measured as shown below.

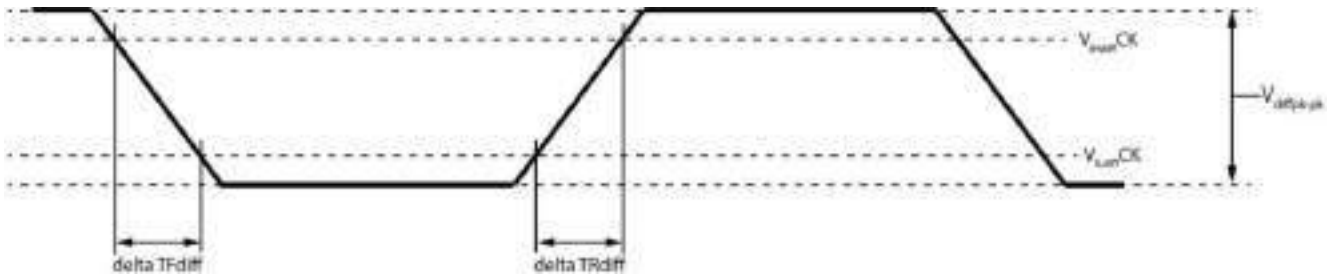


Figure 21. Differential Input Slew Rate Definition for CK_t, CK_c

[Table 22] Differential Input Slew Rate Definition for CK_t, CK_c

Parameter	Measured		Defined by	Notes
	From	To		
Differential Input slew rate for rising edge (CK_t - CK_c)	$VIL_{diff}CK$	$VIH_{diff}CK$	($VIH_{diff}CK$ - $VIL_{diff}CK$) /deltaTRdiff	
Differential Input slew rate for falling edge (CK_t - CK_c)	$VIH_{diff}CK$	$VIL_{diff}CK$	($VIH_{diff}CK$ - $VIL_{diff}CK$) /deltaTFdiff	

[Table 23] Differential Input Slew Rate for CK_t, CK_c

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		min	max	min	max	min	max	min	max		
Differential Input Slew Rate for CK_t, CK_c	SRIdiff_CK	2	14	2	14	2	30	2	30	V/ns	

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8.5 Rx DQS Jitter Sensitivity

The receiver DQS jitter sensitivity test provides the methodology for testing the receiver's strobe sensitivity to an applied duty cycle distortion (DCD) and/ or random jitter (Rj) at the forwarded strobe input without adding jitter, noise and ISI to the data. The receiver must pass the appropriate BER rate when no cross-talk nor ISI is applied, and must pass through the combination of applied DCD and Rj.

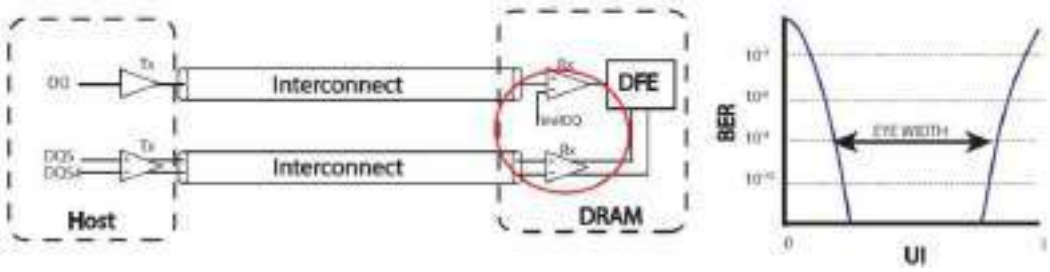


Figure 22. SDRAM's Rx Forwarded Strobes for Jitter Sensitivity Testing

8.5.1 Rx DQS Jitter Sensitivity Specification

The following table provides Rx DQS Jitter Sensitivity Specification for the DDR5 DRAM receivers when operating at various possible transfer rates. These parameters are tested on the CTC2 card with neither additive gain nor Rx Equalization set.

[Table 24] Rx DQS Jitter Sensitivity Specification

[BER = Bit Error Rate; DCD = Duty Cycle Distortion; Rj =Random Jitter]

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		min	max	min	max	min	max	min	max		
DQ Timing Width	tRx_DQ_tMargin	0.825	-	0.825	-	0.825	-	0.825	-	UI	1,2,3,8,9,10
Degradation of timing width compared to tRx_DQ_tMargin, with DCD injection in DQS	tRx_DQ_tMargin_DQS_DCD	-	0.06	-	0.06	-	0.06	-	0.06	UI	1,4,8,9,10
Degradation of timing width compared to tRx_DQ_tMargin, with Rj injection in DQS	tRx_DQ_tMargin_DQS_Rj	-	0.09	-	0.09	-	0.09	-	0.09	UI	1,5,8,9,10
Degradation of timing width compared to tRx_DQ_tMargin, with both DCD and Rj injection in DQS	tRx_DQ_tMargin_DQS_DCD_Rj	-	0.15	-	0.15	-	0.15	-	0.15	UI	1,2,6,8,9,10
Delay of any data lane relative to the DQS_t DQS_c crossing	tRx_DQS2DQ	114	738	114	729	114	721	114	714	ps	1,7,8,9,10
Delay of any data lane relative to any other data lane	tRX_DQ2DQ	-	50	-	50	-	50	-	50	ps	1,7,8,9,10 11,12

NOTE :

1) Validation methodology will be defined in future JEDEC ballots. 2UI is defined as 1tCK for this parameter.
2) Each of ?tRx_DQ_tMargin_DQS_DCD, ?tRx_DQ_tMargin_DQS_Rj, and ?tRx_DQ_tMargin_DQS _DCD_Rj can be relaxed by up to 5% if tRx_DQ_tMargin exceeds the spec by 5% or more.
3) DQ Timing Width - timing width for any data lane using repetitive patterns (check note 4 for the pattern) measured at BER=E-9.
4) Magnitude of degradation of timing width for any data lane using repetitive no ISI patterns with DCD injection in forwarded strobe DQS compared to tRx_DQ_tMargin, measured at BER=E-9. The magnitude of DCD is specified under Test Conditions for Rx DQS Jitter Sensitivity Testing. Test using clock-like pattern of repeating 3 "1s" and 3 "0s".

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5) Magnitude of degradation of timing width for any data lane using repetitive no ISI patterns with only Rj injection in forwarded strobe DQS measured at BER=E-9, compared to tRx_tMargin. The magnitude of Rj is specified under Test Conditions for Rx DQS Jitter Sensitivity Testing
6) Magnitude of degradation of timing width for any data lane using repetitive no ISI patterns with DCD and Rj injection in forwarded strobe DQS measured at BER=E-9, compared to tRx_tMargin. The magnitudes of DCD and Rj are specified under Test Conditions for Rx DQS Jitter Sensitivity Testing.
7) Delay of any data lane relative to the strobe lane, as measured at the end of Tx+Channel. This parameter is a collective sum of effects of data clock mismatches in Tx and on the medium connecting Tx and Rx.
8) All measurements at BER=E-9.
9) This test should be done after the DQS and DQ Voltage Sensitivity tests are completed and passing.
10) The user has the freedom to set the voltage swing and slew rates for strobe and DQ signals as long as they meet the specification. The DQS and DQ input voltage swing and/or slew rate can be adjusted, without exceeding the specifications, for this test.
11) DQ to DQ offset is skew between DQs within a nibble (x4) or a byte (x8, x16) at the DDR5 SDRAM balls.
12) This parameter is relative to the per-pin trained DQS2DQ value, and only appliesafterper-pin DQS2DQ training is complete.

8.5.2 Test Conditions for Rx DQS Jitter Sensitivity Tests

Table 25 lists the amount of Duty Cycle Distortion (DCD) and/or Random Jitter (Rj) that must be applied to the forwarded strobe when measuring the Rx DQS Jitter Sensitivity parameters specified in Table 24.

[Table 25] Test Conditions for Rx DQS Jitter Sensitivity Testing

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		Min	Max	Min	Max	Min	Max	Min	Max		
Applied DCD to the DQS	tRx_DQS_DCD	-	0.045	-	0.045	-	0.045	-	0.045	UI	1,2,3,6,7,10
Applied Rj RMS to the DQS	tRx_DQS_Rj	-	0.0075	-	0.0075	-	0.0075	-	0.0075	UI (RMS)	1,2,4,6,8,10
Applied DCD and Rj RMS to the DQS	tRx_DQS_DCD_Rj	-	0.045UI DCD + 0.0075UI Rj RMS	-	0.045UI DCD + 0.0075UI Rj RMS	-	0.045UI DCD + 0.0075UI Rj RMS	-	0.045UI DCD + 0.0075UI Rj RMS	UI	1,2,5,6,7,9,10

NOTE:
1) While imposing this spec, the strobe lane is stressed, but the data input is kept large amplitude and no jitter or ISI injection. The specified voltages are at the Rx input pin.
The DQS and DQ input voltage swing and/or slew rate can be adjusted, without exceeding the specifications, for this test.
2) The jitter response of the forwarded strobe channel will depend on the input voltage, primarily due to bandwidth limitations of the clock receiver. For this revision, no separate specification of jitter as a function of input amplitude is specified, instead the response characterization done at the specified clock amplitude only. The specified voltages are at the Rx input pin
3) Various DCD values should be tested, complying within the maximum limits
4) Various Rj values should be tested, complying within the maximum limits
5) Various combinations of DCD and Rj should be tested, complying within the maximum limits. The maximum timing margin degradation as a result of these injected jitter is specified in a separate table
6) Although DDR5 has bursty traffic, current available BERTs that can be used for this test do not support burst traffic patterns. A continuous strobe and continuous DQ are used for this parameter. The clock like pattern repeating 3 “1s” and 3 “0s” is used for this test.
7) Duty Cycle Distortion (in UI DCD) as applied to the input forwarded DQS from BERT (UI)
8) RMS value of Rj (specified as Edge jitter) applied to the input forwarded DQS from BERT (values of the edge jitter RMS values specified as % of UI)
9) Duty cycle distortion (specified as UI DCD) and rms values of Rj (specified as edge jitter) applied to the input forwarded DQS from BERT (values of the edge jitter RMS values specified as % of UI)
10) The user has the freedom to set the voltage swing and slew rates for strobe and DQ signals as long as they meet the specification.
The DQS and DQ input voltage swing and/or slew rate can be adjusted, without exceeding the specifications, for this test.

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8.6 Rx DQS Voltage Sensitivity

8.6.1 Overview

The receiver DQS (strobe) input voltage sensitivity test provides the methodology for testing the receiver's sensitivity to varying input voltage in the absence of Inter-Symbol Interference (ISI), jitter (Rj, Dj, DCD) and crosstalk noise.

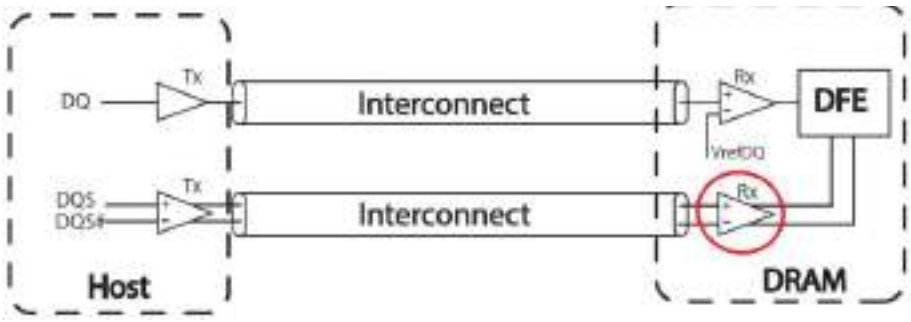


Figure 23. Example of DDR5 Memory Interconnect

8.6.2 Receiver DQS Voltage Sensitivity Parameter

Input differential (DQS_t, DQS_c) VRx_DQS is defined and measured as shown below. The receiver must pass the minimum BER requirements for DDR5. These parameters are tested on the CTC2 card with neither additive gain nor Rx Equalization set.

[Table 26] Rx DQS Input Voltage Sensitivity Parameter

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		Min	Max	Min	Max	Min	Max	Min	Max		
DQS Rx Input Voltage Sensitivity (differential pp)	VRx_DQS	-	100	-	100	-	90	-	90	mV	1,2,3

NOTE:

1) Refer to the minimum BER requirements for DDR5
2) The validation methodology for this parameter is TBD
3) Test using clock like pattern of repeating 3 "1s" and 3 "0s"

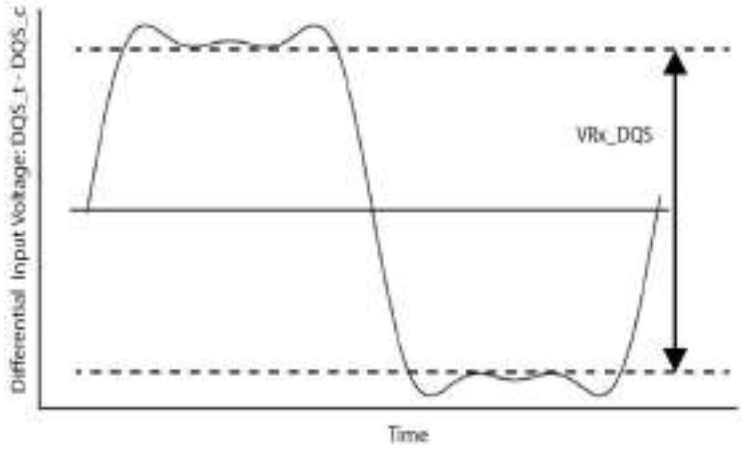


Figure 24. VRx_DQS

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8.7 Differential Strobe (DQS_t, DQS_c) Input Cross Point Voltage (VIX)

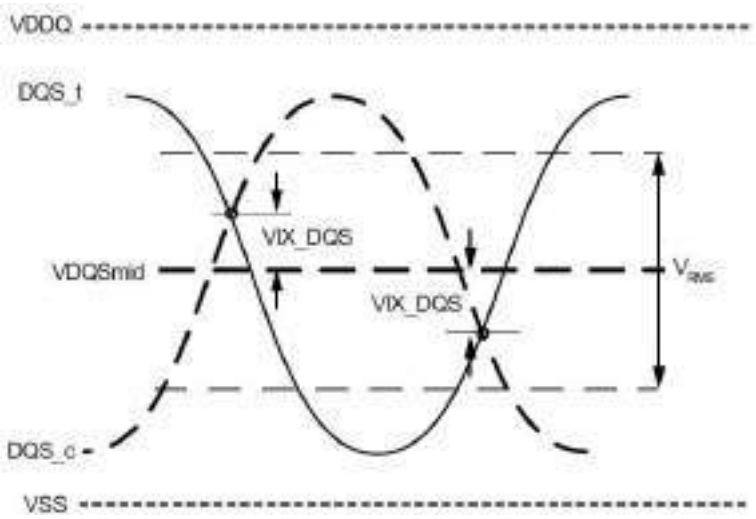


Figure 14. VIX Definition (DQS)

[Table 24] Crosspoint Voltage (VIX) for DQS Differential Input Signals

Parameter	Symbol	DDR5-4400 to 5600		Unit	Notes
		Min	Max		
DQS differential input crosspoint voltage ratio	VIX_DQS_Ratio	-	50	%	1,2,3

NOTE :
1) The VIX_DQS voltage is referenced to VDQSmid(mean) = (DQS_t voltage + DQS_c voltage) /2, where the mean is over 8 UI
2) VIX_DQS_Ratio = (|VIX_DQS| / |VRMS|)*100%, where VRMS = RMS(DQS_t voltage - DQS_c voltage)
3) Only applies when both DQS_t and DQS_c are transitioning (including preamble)

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8.8 Rx DQ Voltage Sensitivity

8.8.1 Overview

The receiver data input voltage sensitivity test provides the methodology for testing the receiver's sensitivity to varying input voltage in the absence of Inter-Symbol Interference (ISI), jitter (Rj, Dj, DCD) and crosstalk noise.

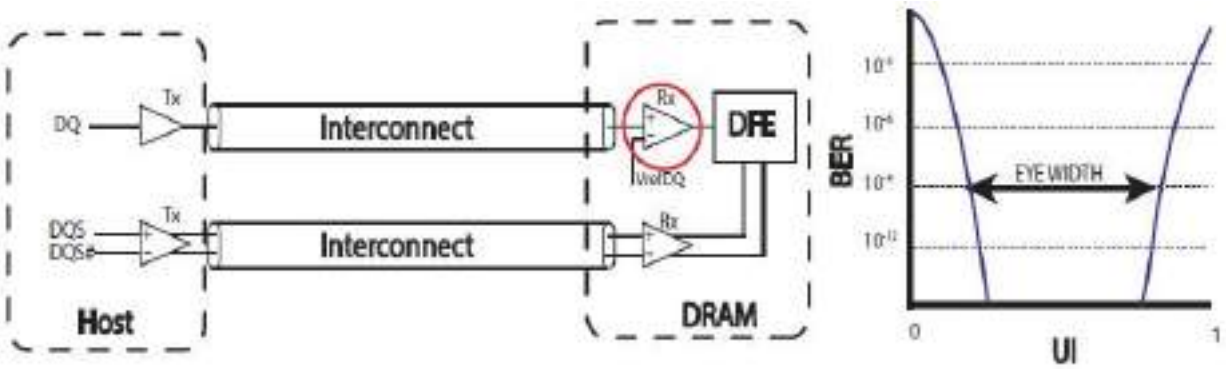


Figure 15. Example of DDR5 Memory Interconnect

8.8.2 Receiver DQ Input Voltage Sensitivity Parameters

Input single-ended VRx_DQ is defined and measured as shown below. The receiver must pass the minimum BER requirements for DDR5. These parameters are tested on the CTC2 card with neither additive gain nor Rx Equalization set.

[Table 20] Rx DQ Input Voltage Sensitivity Parameters

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		Min	Max	Min	Max	Min	Max	Min	Max		
Minimum DQ Rx input voltage sensitivity applied around Vref	VRx_DQ	-	65	-	65	-	60	-	60	mV	1,2,3

NOTE :
1) Refer to the minimum BER requirements for DDR5
2) The validation methodology for this parameter is TBD
3) Recommend testing using clock like pattern such as repeating 3 "1s" and 3 "0s"

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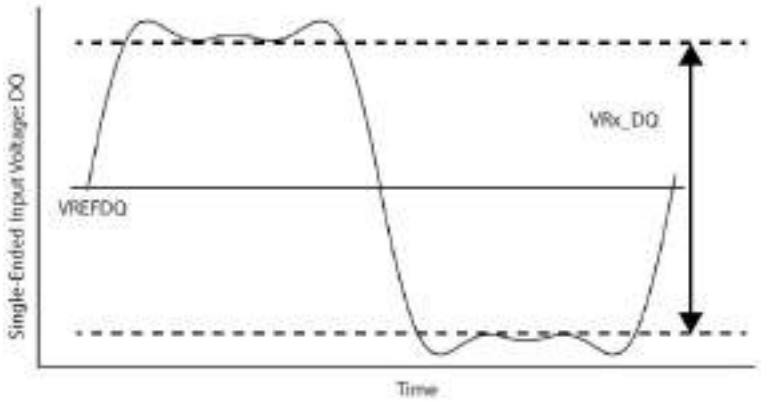


Figure 16. VRx_DQ

8.8.3 Differential Input Levels for DQS

[Table 21] Differential Input Levels for DQS (DQS_t, DQS_c)

From	Parameter	DDR5 4400 to 5600	Notes
$V_{IHdiff}DQS$	Differential input high measurement level (DQS_t, DQS_c)	0.75 x $V_{diffpk-pk}$	1,2,3
$V_{ILdiff}DQS$	Differential input low measurement level (DQS_t, DQS_c)	0.25 x $V_{diffpk-pk}$	1,2,3

NOTE :
1) Vdiffpk-pk defined in Figure 17
2) Vdiffpk-pk is the mean high voltage minus the mean low voltage over TBD samples
3) All parameters are defined over the entire clock common mode range

8.8.4 Differential Input Slew Rate for DQS_t, DQS_c

Input slew rate for differential signals are defined and measured as shown below.

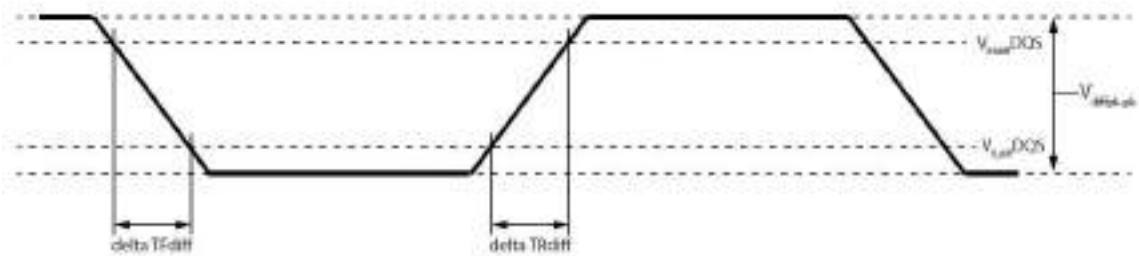


Figure 17. Differential Input Slew Rate Definition for DQS_t, DQS_c

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[Table 22] Differential Input Slew Rate Definition for DQS_t, DQS_c

Parameter	Measured		Defined by	Notes
	From	To		
Differential Input slew rate for rising edge (DQS_t, DQS_c)	$V_{ILdiff}DQS$	$V_{IHdiff}DQS$	($V_{IHdiff}DQS$ - $V_{ILdiff}DQS$) / deltaTRdiff	
Differential Input slew rate for falling edge (DQS_t, DQS_c)	$V_{IHdiff}DQS$	$V_{ILdiff}DQS$	($V_{IHdiff}DQS$ - $V_{ILdiff}DQS$) / deltaTFdiff	

[Table 23] Differential Input Slew Rate for DQS_t, DQS_c

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		Min	Max	Min	Max	Min	Max	Min	Max		
Differential Input Slew Rate for DQS_t, DQS_c	SRIdiff_DQS	1.5	30	1.5	30	2.0	30	2.0	30	Vins	1

NOTE :
1) Only applies when both DQS_t and DQS_c are transitioning.

8.9 Rx Stressed Eye

The stressed eye tests provide the methodology for creating the appropriate stress for the DRAM's receiver with the combination of ISI (both loss and reflective), jitter (Rj, Dj, DCD), and crosstalk noise. The receiver must pass the appropriate BER rate when the equivalent stressed eye is applied through the combination of ISI, jitter and crosstalk

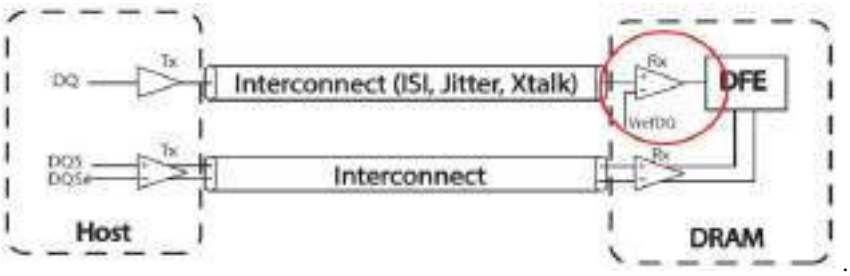


Figure 18. Example of Rx Stressed Test Setup in the Presence of ISI, Jitter and Crosstalk

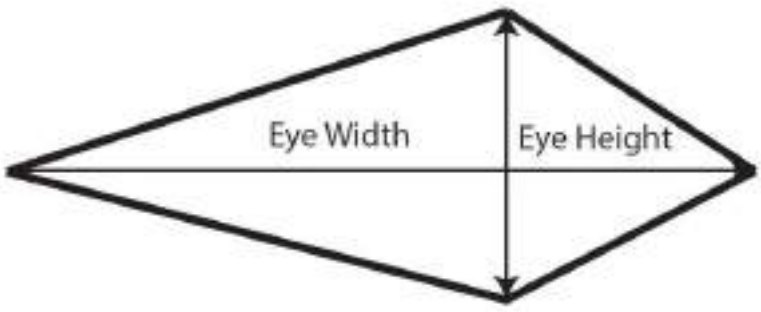


Figure 19. Example of Rx Stressed Eye Height and Eye Width

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8.9.1 Parameters for DDR5 Rx Stressed Eye Tests

[Table 24] Test Conditions for Rx Stressed Eye Tests

[BER=Bit Error Rate; DCD=Duty Cycle Distortion; Rj=Random Jitter; Sj=Sinusoidal Jitter; p-p =peak to peak]

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		Min	Max	Min	Max	Min	Max	Min	Max		
Eye height of stressed eye for Golden Reference Channel 1	RxEH_Stressed_Eye_Golden_Ref_Channel_1	-	75	-	70	-	65	-	60	mV	1,2,3,4,5,6,7,8,9
Eye width of stressed eye Golden Reference Channel 1	RxEW_Stressed_Eye_Golden_Ref_Channel_1	-	0.25	-	0.25	-	0.235	-	0.235	UI	1,2,3,4,5,6,7,8,9
Vswing stress to meet above data eye	Vswing_Stressed_Eye_Golden_Ref_Channel_1	-	600	-	600	-	600	-	600	mV	1,2
Injected sinusoidal jitter at 200 MHz to meet above data eye	Sj_Stressed_Eye_Golden_Ref_Channel_1	0	0.45	0	0.45	0	0.45	0	0.45	UI p-p	1,2
Injected Random wide band (10 MHz-1 GHz) Jitter to meet above data eye	Rj_Stressed_Eye_Golden_Ref_Channel_1	0	0.04	0	0.04	0	0.04	0	0.04	UI RMS	1,2
Injected voltage noise as PRBS23, or Injected voltage noise at 2.1 GHz	Vnoise_Stressed_Eye_Golden_Ref_Channel_1	0	125	0	125	0	125	0	125	mV p-p	1,2
Golden Reference Channel 1 Characteristics as measured at TBD	Golden_Ref_Channel_1_Characteristics									dB	3

NOTE :

1) Must meet minimum BER of $1E^{-16}$ or better requirement with the stressed eye at the slice of the receiver (after equalization is applied in the summer). The eye shape is verified by measuring to BER E^{-9} and extrapolating to BER E^{-16}.
2) These parameters are applied on the defined golden reference channel with parameters TBD.
1) DFE Tap 1-4 Bias settings that give the best eye margin are used and referring to Table 132, Min/Max Ranges for the DFE Tap Coefficients. DFE tap range limits apply: sum of absolute values of Tap-2, Tap-3, and Tap-4 shall be less than 60mV (|Tap-2| + |Tap-3| + |Tap-4| < 60mV) after the tap multiflier is applied.
2) Evaluated with no DC supply voltage drift.
3) Evaluated with no temperature drift.
4) Supply voltage noise limited according to DC bandwidth spec, see DC Operating Conditions
5) The stressed eye is to be assumed to have a diamond shape
6) The VREFDQ, DFE Gain Bias Step, and DFE Taps 1,2,3,4 Bias Step can be adjusted as needed, without exceeding the specifications, for this test, including the limits placed in Note 3.
7) The stressed eye is defined as centered on the DQS_t/DQS_c crossing during the calibration. Measurement includes an optimal set of DQS_t/DQS_c location, VrefDQ, and DFE solution to give the best eye margin.
10) The Rx stressed eye spec applies at 2933MT/s and faster data rates.
11) EH/EW are measured at the slicer of the receiver

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8.10 Connectivity Test Mode - Input level and Timing Requirement

During CT Mode, input levels are defined below.
TEN pin: CMOS rail-to-rail with AC high and low at 80% and 20% of VDDQ
CS_n: CMOS rail-to-rail with AC high and low at 80% and 20% of VDDQ.
Test Input pins: CMOS rail-to-rail with AC high and low at 80% and 20% of VDDQ.
RESET_n: CMOS rail-to-rail with AC high and low at 80% and 20% of VDDQ.

Prior to the assertion of the TEN pin, all voltage supplies must be valid and stable.

Upon the assertion of the TEN pin, the CK_t and CK_c signals will be ignored and the DDR5 memory device will enter into the CT mode after time tCT_Enable. In the CT mode, no refresh activities in the memory arrays, initiated either externally (i.e., auto-refresh) or internally (i.e., self-refresh), will be maintained.

The TEN pin may be asserted after the DRAM has completed power-on, after RESET_n has de-asserted, the wait time after the RESET_n de-assertion has elapsed, and prior to starting clocks (CK_t, CK_c).

The TEN pin may be de-asserted at any time in the CT mode. Upon exiting the CT mode, the states of the DDR5 memory device are unknown and the integrity of the original content of the memory array is not guaranteed; therefore, the reset initialization sequence is required.

All output signals at the test output pins will be stable within tCT_valid after the test inputs have been applied to the test input pins with TEN input and CS_n input maintained High and Low respectively.

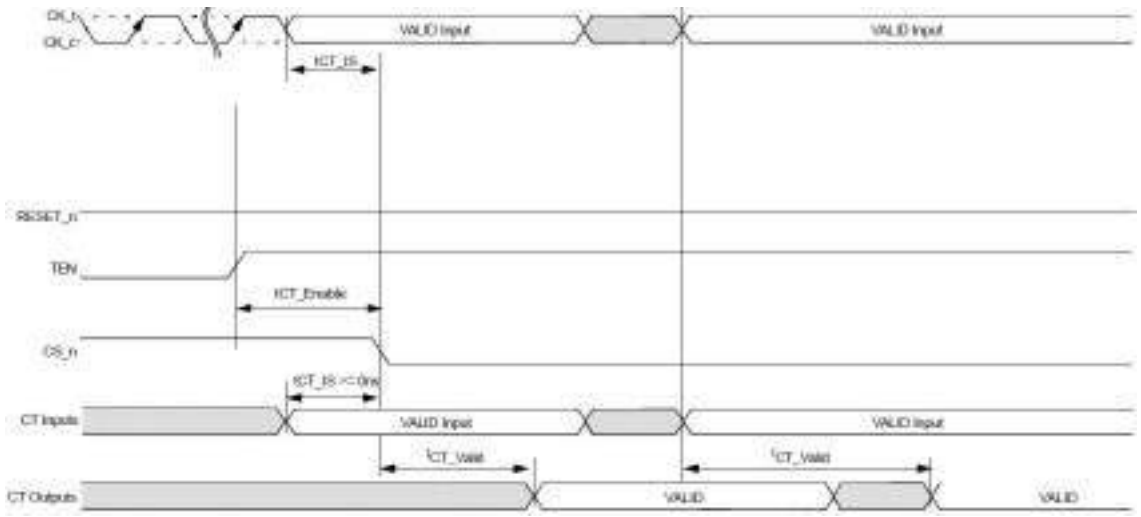


Figure 20. Timing Diagram for Connectivity Test (CT) Mode

[Table 25] AC parameters for Connectivity Test (CT) Mode

Symbol	Min	Max	Unit
tCT_IS	0	-	ns
tCT_Enable	200	-	ns
tCT_Valid	-	200	ns

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8.10.1 Connectivity Test (CT) Mode Input Levels

Following input parameters will be applied for DDR5 SDRAM Input Signals during Connectivity Test Mode.

[Table 26] CMOS rail to rail Input Levels for TEN, CS_n and Test inputs

Parameter	Symbol	Min	Max	Unit	Notes
TEN AC Input High Voltage	VIH(AC)_TEN	0.8 * VDDQ	VDDQ	V	1
TEN DC Input High Voltage	VIH(DC)_TEN	0.7 * VDDQ	VDDQ	V	
TEN DC Input Low Voltage	VIL(DC)_TEN	VSS	0.3 * VDDQ	V	
TEN AC Input Low Voltage	VIL(AC)_TEN	VSS	0.2 * VDDQ	V	2
TEN Input signal Falling time	TF_input_TEN	-	10	ns	
TEN Input signal Rising time	TR_input_TEN	-	10	ns	

NOTE :
1) Overshoot might occur. It should be limited by the Absolute Maximum DC Ratings.
2) Undershoot might occur. It should be limited by Absolute Maximum DC Ratings.

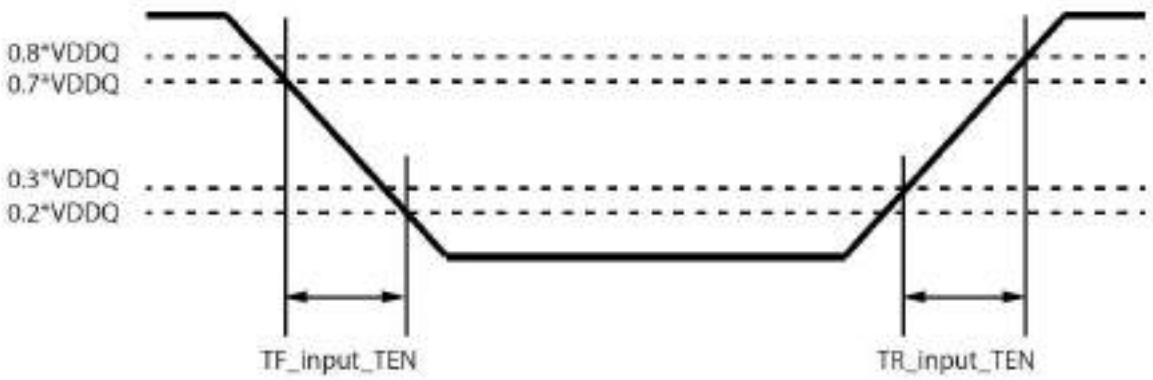


Figure 21. TEN Input Slew Rate Definition

8.10.2 CMOS rail to rail Input Levels for RESET_n

[Table 27] CMOS rail to rail Input Levels for RESET_n

Parameter	Symbol	Min	Max	Unit	NOTE
AC Input High Voltage	VIH(AC)_RESET	0.8*VDDQ	VDDQ	V	5
DC Input High Voltage	VIH(DC)_RESET	0.7*VDDQ	VDDQ	V	2
DC Input Low Voltage	VIL(DC)_RESET	VSS	0.3*VDDQ	V	1
AC Input Low Voltage	VIL(AC)_RESET	VSS	0.2*VDDQ	V	6
Rising time	TR_RESET	-	1.0	us	
RESET pulse width	tPW_RESET	1.0	-	us	3,4

NOTE :
1) After RESET_n is registered LOW, RESET_n level shall be maintained below VIL(DC)_RESET during tPW_RESET, otherwise, SDRAM may not be reset.
2) Once RESET_n is registered HIGH, RESET_n level must be maintained above VIH(DC)_RESET, otherwise, SDRAM operation will not be guaranteed until it is reset asserting RESET_n signal LOW.
3) RESET is destructive to data contents.

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4) This definition is applied only for “Reset Procedure at Power Stable”.
5) Overshoot might occur. It should be limited by the Absolute Maximum DC Ratings.
6) Undershoot might occur. It should be limited by Absolute Maximum DC Ratings.

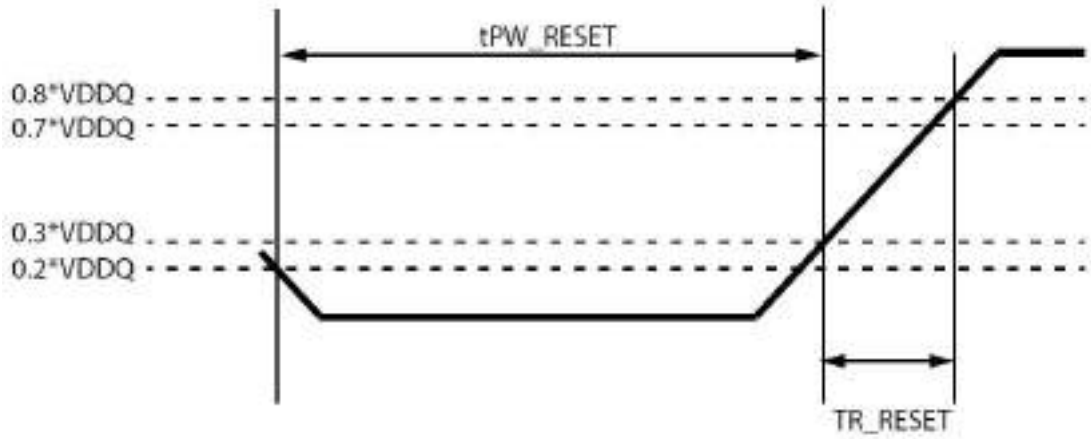


Figure 22. RESET_n Input Slew Rate Definition

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9.0 AC&DC OUTPUT MEASUREMENT LEVELS and TIMING

9.1 Output Driver DC Electrical Characteristics for DQS and DQ

The DDR5 driver supports two different Ron values. These Ron values are referred as strong(low Ron) and weak mode(high Ron). A functional representation of the output buffer is shown in the figure below.

Output driver impedance RON is defined as follows:

The individual pull-up and pull-down resistors (RON_{Pu} and RON_{Pd}) are defined as follows:

$$RON_{Pu} = \frac{VDDQ - Vout}{|I\ out|}$$ under the condition that RONPd is off

$$RON_{Pd} = \frac{Vout}{|I\ out|}$$ under the condition that RONPu is off

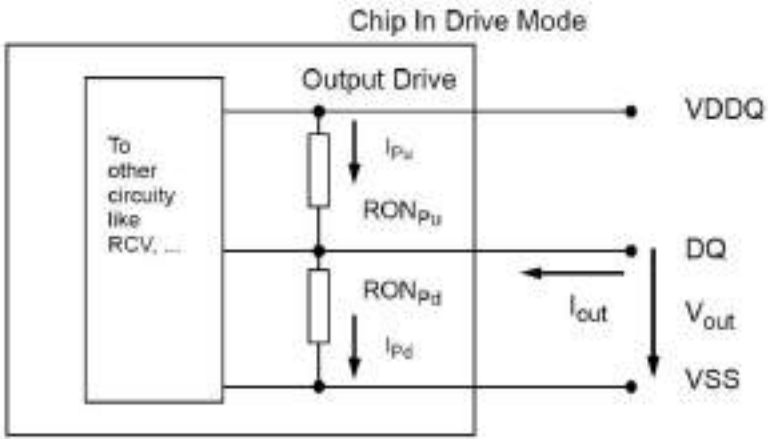


Figure 34. Output Driver Impedance Ron

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[Table 36] Output Driver DC Electrical Characteristics, assuming RZQ = 240ohm; entire operating temperature range; after proper ZQ calibration

RON_{NOM}	Resistor	Vout	Min	Nom	Max	Unit	NOTE
34Ω	RON34Pd	VOLdc= 0.5*VDDQ	0.8	1	1.1	RZQ/7	1,2
		VOMdc= 0.8* VDDQ	0.9	1	1.1	RZQ/7	1,2
		VOHdc= 0.95* VDDQ	0.9	1	1.25	RZQ/7	1,2
	RON34Pu	VOLdc= 0.5* VDDQ	0.9	1	1.25	RZQ/7	1,2
		VOMdc= 0.8* VDDQ	0.9	1	1.1	RZQ/7	1,2
		VOHdc= 0.95* VDDQ	0.8	1	1.1	RZQ/7	1,2
48Ω	RON48Pd	VOLdc= 0.5*VDDQ	0.8	1	1.1	RZQ/5	1,2
		VOMdc= 0.8* VDDQ	0.9	1	1.1	RZQ/5	1,2
		VOHdc= 0.95* VDDQ	0.9	1	1.25	RZQ/5	1,2
	RON48Pu	VOLdc= 0.5* VDDQ	0.9	1	1.25	RZQ/5	1,2
		VOMdc= 0.8* VDDQ	0.9	1	1.1	RZQ/5	1,2
		VOHdc= 0.95* VDDQ	0.8	1	1.1	RZQ/5	1,2
Mismatch between pull-up and pull-down, MMPuPd		VOMdc= 0.8* VDDQ	-10		10	%	1,2,3,4
Mismatch DQ-DQ within byte variation pull-up, MMPudd		VOMdc= 0.8* VDDQ			10	%	1,2,4
Mismatch DQ-DQ within byte variation pull-dn, MMPddd		VOMdc= 0.8* VDDQ			10	%	1,2,4

NOTE :

1) The tolerance limits are specified after calibration with stable voltage and temperature. For the behavior of the tolerance limits if temperature or voltage changes after calibration, see following section on voltage and temperature sensitivity(TBD)"ZQ Calibration Commands" section.
2) Pull-up and pull-dn output driver impedances are recommended to be calibrated at 0.8 * VDDQ. Other calibration schemes may be used to achieve the linearity spec shown above, e.g. calibration at 0.5 * VDDQ and 0.95 * VDDQ.
3) Measurement definition for mismatch between pull-up and pull-down, MMPuPd : Measure RONPu and RONPD both at 0.8*VDD separately;

Ronnom is the nominal Ron value

$$MMPuPd = \frac{RONPu - RONPd}{RONNOM} * 100$$

4) RON variance range ratio to RON Nominal value in a given component, including DQS_t and DQS_c.

$$MMPudd = \frac{RONPuMax - RONPuMin}{RONNOM} * 100$$

$$MMPddd = \frac{RONPdMax - RONPdMin}{RONNOM} * 100$$

5) This parameter of x16 device is specified for Upper byte and Lower byte.

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9.2 Output Driver DC Electrical Characteristics for Loopback Signals LBDQS, LBDQ

The DDR5 Loopback driver supports 34 ohms. A functional representation of the output buffer is shown in the figure below.

$$RON_{Pu} = \frac{VDDQ - Vout}{|I\,out|}$$ under the condition that RONPd is off

$$RON_{Pd} = \frac{Vout}{|I\,out|}$$ under the condition that RONPu is off

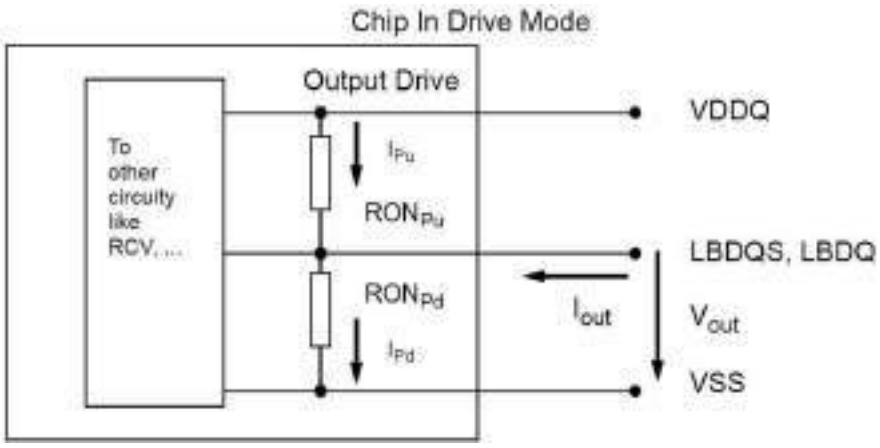


Figure 35. Output Driver for Loopback Signals

[Table 37] Output Driver DC Electrical Characteristics, assuming RZQ = 240ohm entire operating temperature range; after proper ZQ calibration

RON_{NOM}	Resistor	Vout	Min	Nom	Max	Unit	Notes
34Ω	RON34Pd	VOLdc= 0.5*VDDQ	0.8	1	1.1	RZQ/7	1,2
		VOMdc= 0.8* VDDQ	0.9	1	1.1	RZQ/7	1,2
		VOHdc= 0.95* VDDQ	0.9	1	1.25	RZQ/7	1,2
	RON34Pu	VOLdc= 0.5* VDDQ	0.9	1	1.25	RZQ/7	1,2
		VOMdc= 0.8* VDDQ	0.9	1	1.1	RZQ/7	1,2
		VOHdc= 0.95* VDDQ	0.8	1	1.1	RZQ/7	1,2
Mismatch between pull-up and pull- down, MMPuPd		VOMdc= 0.8* VDDQ	-10		10	%	1,2,3,4
Mismatch LBDQS-LBDQ within device variation pull-up, MMPudd		VOMdc= 0.8* VDDQ			10	%	1,2,4
Mismatch LBDQS-LBDQ within device variation pull-dn, MMPddd		VOMdc= 0.8* VDDQ			10	%	1,2,4

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NOTE :

1) The tolerance limits are specified after calibration with stable voltage and temperature. For the behavior of the tolerance limits if temperature or voltage changes after calibration, see following section on voltage and temperature sensitivity(TBD)"ZQ Calibration Commands" section.
2) Pull-up and pull-dn output driver impedances are recommended to be calibrated at 0.8 * VDDQ. Other calibration schemes may be used to achieve the linearity spec shown above, e.g. calibration at 0.5 * VDDQ and 0.95 * VDDQ.
3) Measurement definition for mismatch between pull-up and pull-down, MMPuPd : Measure RONPu and RONPD both at 0.8*VDD separately;

Ronnom is the nominal Ron value

$$MMPuPd = \frac{RONPu - RONPd}{RONNOM} * 100$$

4) RON variance range ratio to RON Nominal value in a given component, including LBDQS and LBDQ

$$MMPudd = \frac{RONPuMax - RONPuMin}{RONNOM} * 100$$

$$MMPddd = \frac{RONPdMax - RONPdMin}{RONNOM} * 100$$

9.3 Loopback Output Timing

Loopback strobe LBDQS to Loopback data LBDQ relationship is illustrated inFigure 36.

- tLBQSH describes the single-ended LBDQS strobe high pulse width
- tLBQSL describes the single-ended LBDQS strobe low pulse width
- tLBDQSQ describes the latest valid transition of LBDQ measured at both rising and falling edges of LBDQS
- tLBQH describes the earliest invalid transition of LBDQ measured at both rising and falling edges of LBDQS
- tLBDVW describes the data valid window per device per UI and is derived from (tLBQH-tLBDQSQ) of each UI on a given DRAM

[Table 38] Loopback Output Timing Parameters

Speed		DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Units	Notes
Parameter	Symbol	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX		
Loopback LBDQS Output Low Time	tLBQSL	0.7	-	0.7	-	0.7	-	0.7	-	tCK	1
Loopback LBDQS Output High Time	tLBQSH	0.7	-	0.7	-	0.7	-	0.7	-	tCK	1
Loopback LBDQS to LBDQ Skew	tLBDQSQ	0.5	-	0.5	-	0.5	-	0.5	-	tCK/2	1,2
Loopback LBDQ Output Time from LBDQS	tLBQH	0.5	-	0.5	-	0.5	-	0.5	-	tCK/2	1,2
Loopback Data valid window (tLBQH-tLBDQSQ) of each UI per DRAM	tLBDVW	1.6	-	1.6	-	1.6	-	1.6	-	tCK/2	1

NOTE:

1) Based on Loopback 4-way interleave setting.
2) tLBQ_Set is measured from LBDQ first transition to LBDQS falling edge and tLBQ_Hld is measured from LBDQS falling edge to LBDQ last transition.

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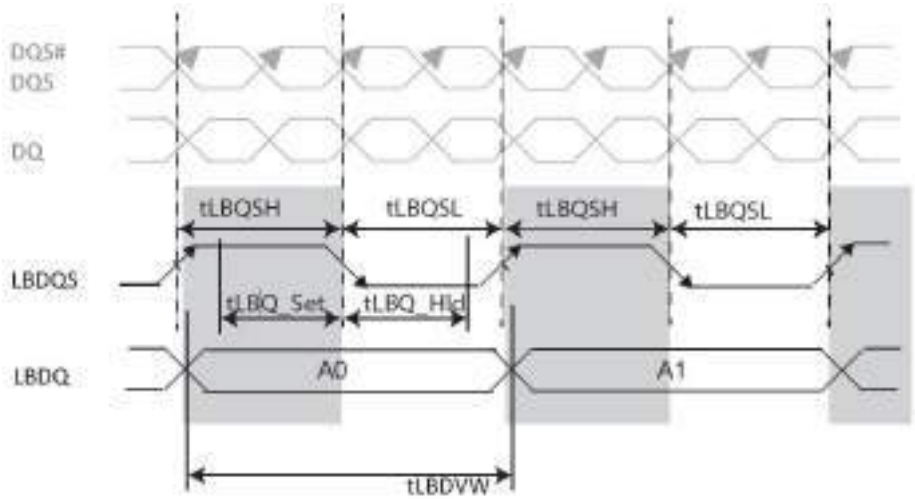


Figure 36. Loopback Strobe to Data Relationship

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9.3.1 Alert_n output Drive Characteristic

A functional representation of the output buffer is shown in the figure below. Output driver impedance RON is defined as follows:

$$RON_{Pd} = \frac{Vout}{|\ Iout\ |} \quad \text{under the condition that } RON_{Pu} \text{ is off}$$

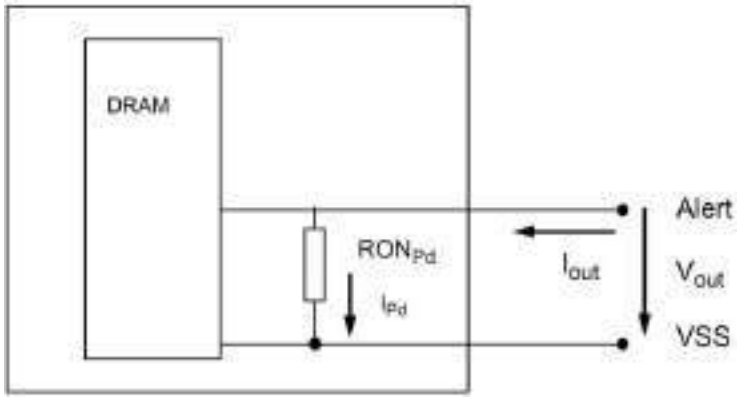


Figure 37. Alert Driver

Resistor	Vout	Min	Max	Unit	Notes
RON_{Pd}	VOLdc= 0.1* VDDQ	0.3	1.1	$R_{ZQ}/7$	
	V_{OMdc} = 0.8* VDDQ	0.4	1.1	$R_{ZQ}/7$	
	V_{OHdc} = 0.95* VDDQ	0.4	1.25	$R_{ZQ}/7$	

9.3.2 Output Driver Characteristic of Connectivity Test (CT) Mode

Following Output driver impedance RON will be applied to the Test Output Pin during Connectivity Test (CT) Mode.
The individual pull-up and pull-down resistors (RONPu_CT and RONPd_CT) are defined as follows:

$$RON_{Pu_CT} = \frac{V_{DDQ}-V_{OUT}}{|\ Iout\ |}$$

$$RON_{Pd_CT} = \frac{V_{OUT}}{|\ Iout\ |}$$

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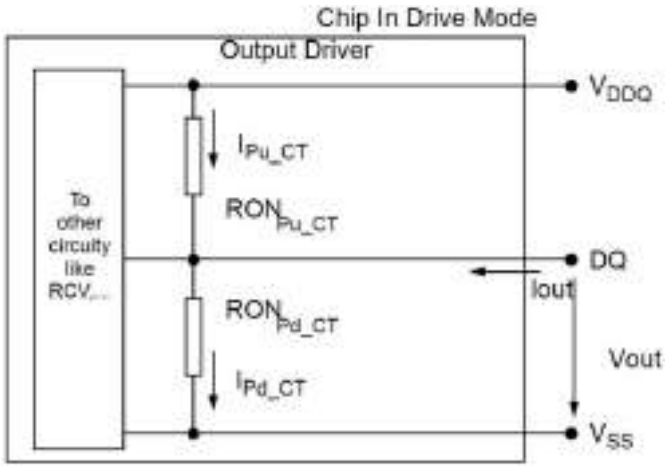


Figure 38. Output Driver

RONNOM_CT	Resistor	Vout	Max	Units	NOTE
34Ω	RONPd_CT	VOBdc = 0.2 x VDDQ	1.9	$R_{ZQ}/7$	1,2
		VOLdc = 0.5 x VDDQ	2.0	$R_{ZQ}/7$	1,2
		VOMdc = 0.8 x VDDQ	2.2	$R_{ZQ}/7$	1,2
		VOHdc = 0.95 x VDDQ	2.5	$R_{ZQ}/7$	1,2
	RONPu_CT	VOBdc = 0.2 x VDDQ	1.9	$R_{ZQ}/7$	1,2
		VOLdc = 0.5 x VDDQ	2.0	$R_{ZQ}/7$	1,2
		VOMdc = 0.8 x VDDQ	2.2	$R_{ZQ}/7$	1,2
		VOHdc = 0.95 x VDDQ	2.5	$R_{ZQ}/7$	1,2

NOTE:
1) Connectivity test mode uses un-calibrated drivers, showing the full range over PVT. No mismatch between pull up and pull down is defined 2) Uncalibrated drive strength tolerance is specified at +/- 30%

9.4 Single-ended Output Levels - VOL/VOH

[Table 39] Single-ended Output levels

Symbol	Parameter	DDR5-4400 to 5600	Units	Notes
V_{OH}	Output high measurement level (for output SR)	0.75 x V_{pk-pk}	V	1
V_{OL}	Output low measurement level (for output SR)	0.25 x V_{pk-pk}	V	1

NOTE:

1) V_{pk-pk} is the mean high voltage minus the mean low voltage over 8UI samples

9.5 Single-Ended Output Levels - VOL/VOH for Loopback Signals

[Table 40] Single-ended Output levels for Loopback Signals

Symbol	Parameter	DDR5-4400 to 5600	Units	Notes
V_{OH}	Output high measurement level (for output SR)	0.75 x V_{pk-pk}	V	1
V_{OL}	Output low measurement level (for output SR)	0.25 x V_{pk-pk}	V	1

NOTE:
1) V_{pk-pk} is the mean high voltage minus the mean low voltage over 8UI samples

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9.6 Single-ended Output Slew Rate

With the reference load for timing measurements, output slew rate for falling and rising edges is defined and measured between V_{OL} and V_{OH} for single ended signals as shown in Table 41 and Figure 39.

[Table 41] Single-ended output slew rate definition

Description	Measured		Defined by
	From	To	
Single ended output slew rate for rising edge	V_{OL}	V_{OH}	[V_{OH}-V_{OL}] / delta TRse
Single ended output slew rate for falling edge	V_{OH}	V_{OL}	[V_{OH}-V_{OL}] / delta TFse

NOTE:
1) Output slew rate is verified by design and characterization, and may not be subject to production test

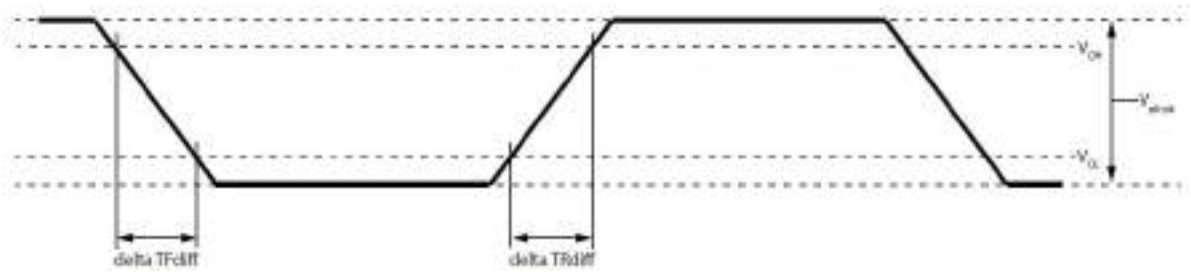


Figure 39. Single-ended Output Slew Rate Definition

[Table 42] Single-ended Output Slew Rate

Speed		DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Units	Notes
Parameter	Symbol	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX		
Single ended output slew rate	SRQse	8	24	8	24	12	24	12	24	V/ns	

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9.7 Differential Output Levels

[Table 43] Differential Output levels

Symbol	Parameter	DDR5-4400 to 5600	Units	Notes
V_{OHdiff}	Differential output high measurement level (for output SR)	0.75 x $V_{diffpk-pk}$	V	1
V_{OLdiff}	Differential output low measurement level (for output SR)	0.25 x $V_{diffpk-pk}$	V	1

NOTE:

1) $V_{diffpk-pk}$is the mean high voltage minus the mean low voltage over 8UI samples

9.8 Differential Output Slew Rate

With the reference load for timing measurements, output slew rate for falling and rising edges is defined and measured between V_{OLdiff} and V_{OHdiff} for differential signals as shown in Table 44 and Figure 40.

[Table 44] Differential output slew rate definition

Description	Measured		Defined by
	From	To	
Differential output slew rate for rising edge	V_{OLdiff}	V_{OHdiff}	[V_{OHdiff}-V_{OLdiff}] / delta TRdiff
Differential output slew rate for falling edge	V_{OHdiff}	V_{OLdiff}	[V_{OHdiff}-V_{OLdiff}] / delta TFdiff

NOTE:

1) Output slew rate is verified by design and characterization, and may not be subject to production test

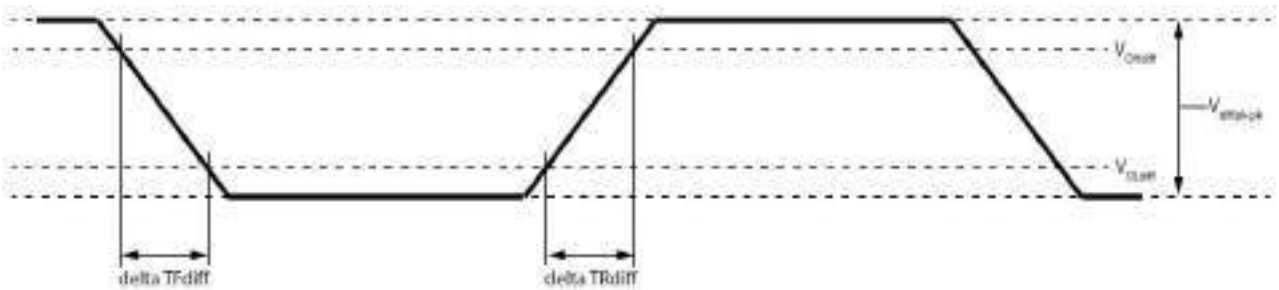


Figure 40. Differential Output Slew Rate Definition

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[Table 45] Differential Output Slew Rate

Speed		DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Units	Notes
Parameter	Symbol	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX		
Differential output slew rate	SRQdiff	16	48	16	48	24	48	24	48	V/ns	

9.9 Tx DQS Jitter

The Random Jitter (Rj) specified is a random jitter meeting a Gaussian distribution. The Deterministic Jitter (Dj) specified is bounded. The DDR5 device output jitter must not exceed maximum values specified in Table 46.

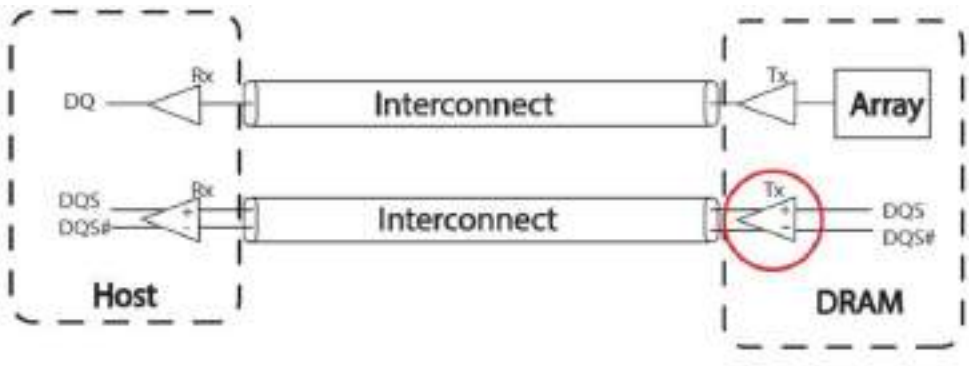


Figure 41. Tx DQS Jitter

9.9.1 Tx DQS Jitter Parameters

[Table 46] Tx DQS Jitter Parameters

[Dj=Deterministic Jitter; Rj=Random Jitter; DCD=Duty Cycle Distortion; BUJ=Bounded Uncorrelated Jitter; pp=Peak to Peak]

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		Min	Max	Min	Max	Min	Max	Min	Max		
Rj RMS Value of 1-UI Jitter without BUJ	tTx_DQS_1UI_Rj_NoBUJ	-	tCK_1UI_Rj_NoBUJ + 0.002	-	tCK_1UI_Rj_NoBUJ + 0.002	-	tCK_1UI_Rj_NoBUJ + 0.002	-	tCK_1UI_Rj_NoBUJ + 0.002	UI (RMS)	1,2,3,4, 5,6,7,8,9, 10,11,12
Dj pp Value of 1-UI Jitter without BUJ	tTx_DQS_1UI_Dj_NoBUJ	-	0.150	-	0.150	-	0.130	-	0.130	UI	1,2,3,5,6, 7,8,9,10,11
Rj RMS Value of N-UI jitter without BUJ, where 1<N< 4	tTx_DQS_NUI_Rj_NoBUJ	-	tCK_1UI_Rj_NoBUJ + 0.002	-	tCK_1UI_Rj_NoBUJ + 0.002	-	tCK_1UI_Rj_NoBUJ + 0.002	-	tCK_1UI_Rj_NoBUJ + 0.002	UI (RMS)	1,2,3,5,6, 7,8,9,10,11 12
Dj pp Value of N-UI Jitter without BUJ, where 1<N < 4	tTx_DQS_NUI_Dj_NoBUJ	-	0.150	-	0.150	-	0.130	-	0.130	UI	1,2,3,5,6, 7,8,9,10,11

NOTE:

1) On-die noise similar to that occurring with all the transmitter and receiver lanes toggling need to be stimulated. When there is no socket in transmitter measurement setup, in many cases, the contribution of the cross-talk is not significant or can be estimated within tolerable error even with all thetransmitter lanes sending patterns. When a socket is present, such as DUT being DRAM component, the contribution of the cross-talk could be significant. To minimize the impact of crosstalk on the measurement results, a small group of selected lanes in the vicinity of the lane under test may be turned off (sending DC), while the remaining TX lanes send patterns to the corresponding RX receivers so as to excite realistic on-die noise profile from device switching. Note that there may be cases when one of Dj and Rj specs is met and another violated in which case the signaling analysis should be run to determine link feasibility
2) On-die noise similar to that occurring with all the transmitter and receiver lanes toggling need to be stimulated. When there is no socket in transmitter measurement setup, in many cases the contribution of BUJ is not significant or can be estimated within tolerable error even with all the transmitter

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lanes sending patterns. When a socket is present, such as DUT being DRAM component, the contribution of the cross-talk could be significant. To minimize the impact of crosstalk on the measurement results, a small group of selected lanes in the vicinity of the lane under test may be turned off (sending DC), while the remaining TX lanes send patterns to the corresponding RX receivers, so as to excite realistic on-die noise profile from device switching. Note that there may be cases when one of Dj and Rj specs is met and another violated in which case the signaling analysis should be run to determine link feasibility

3) The validation methodology for these parameters will be covered in future ballots
4) Rj RMS value of 1-UI jitter. Without BUJ, but on-die system like noise present. This extraction is to be done after software correction of DCD
5) See Chapter 12 for details on the minimum BER requirements
6) See Chapter 12 for details on UI, NUI and Jitter definitions
7) Duty Cycle of the DQ pins must be adjusted as close to 50% as possible using the Global and Per Pin Duty Cycle Adjuster feature prior to running the Tx DQ Jitter test
8) The Mode Registers for the Duty Cycle Adjuster are MR43 and MR44, and the Mode Registers for the Per Pin DCA of DQS are MR103 - MR110
9) Spread Spectrum Clocking (SSC) must be disabled while running the Tx DQ Jitter test
10) These parameters are tested using the continuous clock pattern which are sent out from the dram device without the need for sending out continuous MRR commands. The MR25 OP[3] is set to “1” to enable this feature
11) Tested on the CTC2 card only
12) The max value of tTx_DQS_Rj_1UI_NoBUJ and tTx_DQS_Rj_NUI_NoBUJ can be 6mUI RMS

9.10 Tx DQ Jitter

9.10.1 Overview

The Random Jitter (Rj) specified is a random jitter meeting a Gaussian distribution. The Deterministic Jitter (Dj) specified is bounded. The DDR5 device output jitter must not exceed maximum values specified in Table 47.

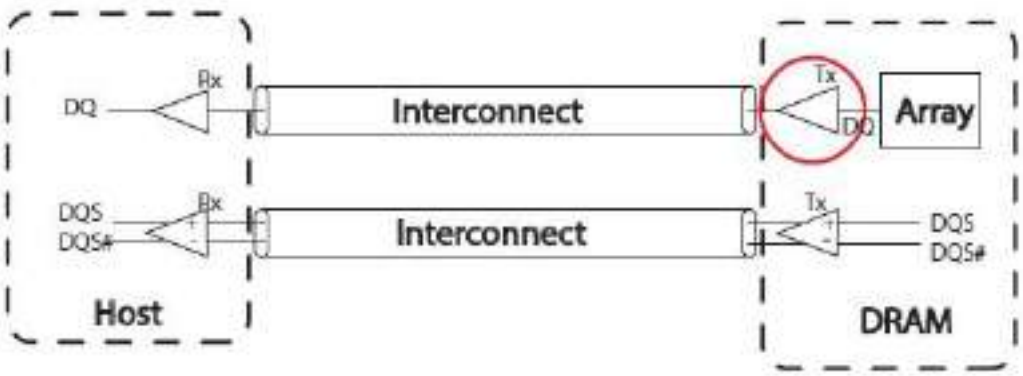


Figure 42. Tx DQ Jitter

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9.10.2 Tx DQ Jitter Parameters

[Table 47] Tx DQ Jitter Parameters

[Dj=Deterministic Jitter; Rj=Random Jitter; DCD=Duty Cycle Distortion; BUJ=Bounded Uncorrelated Jitter; pp=Peak to Peak]

Parameter	Symbol	DDR5-4400 to 4800		DDR5-5200 to 5600		Unit	Notes
		Min	Max	Min	Max		
Rj RMS Value of 1-UI Jitter without BUJ	tTx_DQS_1UI_Rj _NoBUJ	-	tCK_1UI_Rj_ NoBUJ+0.002	-	tCK_1UI_Rj_ NoBUJ+0.002	UI (RMS)	1,2,3,4, 5,6,7,8,9, 10,11,12
Dj pp Value of 1-UI Jitter without BUJ	tTx_DQS_1UI_Dj _NoBUJ	-	0.150	-	0.130	UI	1,2,3,5,6, 7,8,9,10,11
Rj RMS Value of N-UI jitter without BUJ, where 1<N< 4	tTx_DQS_NUI_Rj _NoBUJ	-	tCK_NUI_Rj_ NoBUJ+0.002	-	tCK_NUI_Rj_ NoBUJ+0.002	UI (RMS)	1,2,3,5,6, 7,8,9,10,11 12
Dj pp Value of N-UI Jitter without BUJ, where 1<N < 4	tTx_DQS_NUI_Dj _NoBUJ	-	0.160	-	0.130	UI	1,2,3,5,6, 7,8,9,10,11
Delay of any data lane relative to strobe lane	tTx_DQS2DQ	-0.100	0.100	-0.100	0.100		

NOTE:

1) On-die noise similar to that occurring with all the transmitter and receiver lanes toggling need to be stimulated. When there is no socket in transmittermeasurement setup, in many cases, the contribution of the cross-talk is not significant or can be estimated within tolerable error even with all thetransmitter lanes sending patterns. When a socket is present, such as DUT being DRAM component, the contribution of the cross-talk could be significant.To minimize the impact of crosstalk on the measurement results, a small group of selected lanes in the vicinity of the lane under test may be turned off (sending DC), while the remaining TX lanes send patterns to the corresponding RX receivers so as to excite realistic on-die noise profile from device switching. Note that there may be cases when one of Dj and Rj specs is met and another violated in which case the signaling analysis should be run to determine link feasibility
2) On-die noise similar to that occurring with all the transmitter and receiver lanes toggling need to be stimulated. When there is no socket in transmitter measurement setup, in many cases, the contribution of BUJ is not significant or can be estimated within tolerable error even with all the transmitter lanes sending patterns. When a socket is present, such as DUT being DRAM component, the contribution of the cross-talk could be significant. To minimize the impact of crosstalk on the measurement results, a small group of selected lanes in the vicinity of the lane under test may be turned off (sending DC), while the remaining TX lanes send patterns to the corresponding RX receivers so as to excite realistic on-die noise profile from device switching. Note that there may be cases when one of Dj and Rj specs is met and another violated in which case the signaling analysis should be run to determine link feasibility
3) The validation methodology for these parameters will be covered in future ballots
4) Rj RMS value of 1-UI jitter without BUJ, but on-die system like noise present. This extraction is to be done after software correction of DCD 5) Delay of any data lane relative to strobe lane, as measured at Tx output
6) Vref noise level to DQ jitter should be adjusted to minimize DCD
7) See Chapter 12 for details on the minimum BER requirements
8) See Chapter 12 for details on UI, NUI and Jitter definitions
9) Duty Cycle of the DQ pins must be adjusted as close to 50% as possible using the Global and Per Pin Duty Cycle Adjuster feature prior to running this test
10) The Mode Registers for the Duty Cycle Adjuster are MR43 and MR44. Also the Mode Registers for the Per Pin DCA of DQLx are MR(133+8x) and MR(134+8x), where 0≤x≤7, and the Mode Registers for the Per Pin DCA of DQUy are MR(197+8y) and MR(198+8y), where 0≤y≤7. 11) Spread Spectrum Clocking (SSC) must be disabled while running this test
12) These parameters are tested using the continuous clock pattern which are sent out from the dram device without the need for sending out continuous MRR commands. The MR25 OP[3] is set to "1" to enable this feature.
13) Tested on the CTC2 card only
14) The max value of tTx_DQ_Rj_1UI_NoBUJ and tTx_DQ_Rj_NUI_NoBUJ can be 6mUI RMS

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9.11 Tx DQ Stressed Eye

Tx DQ stressed eye height and eye width must meet minimum specification values at BER=E^{-9} and confidence level 99.5%. Tx DQ Stressed Eye shows the DQS to DQ skew for both Eye Width and Eye Height. In order to support different Host Receiver (Rx) designs, it is the responsibility of the Host to insure the advanced DQS edges are adjusted accordingly via the Read DQS Offset Timing mode register settings (MR40 OP[3:0]).

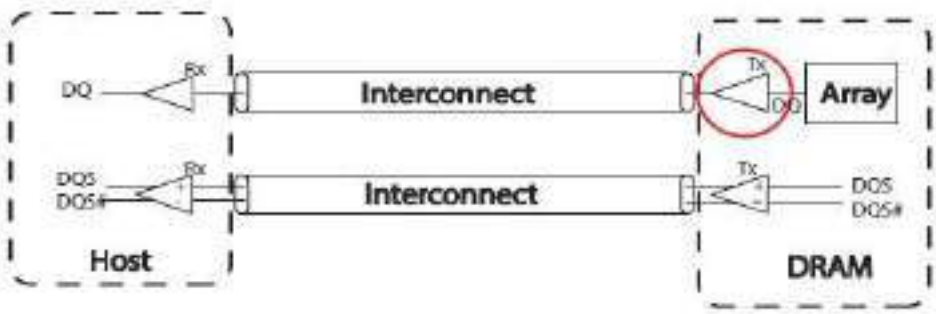


Figure 43. Example of DDR5 Memory Interconnect

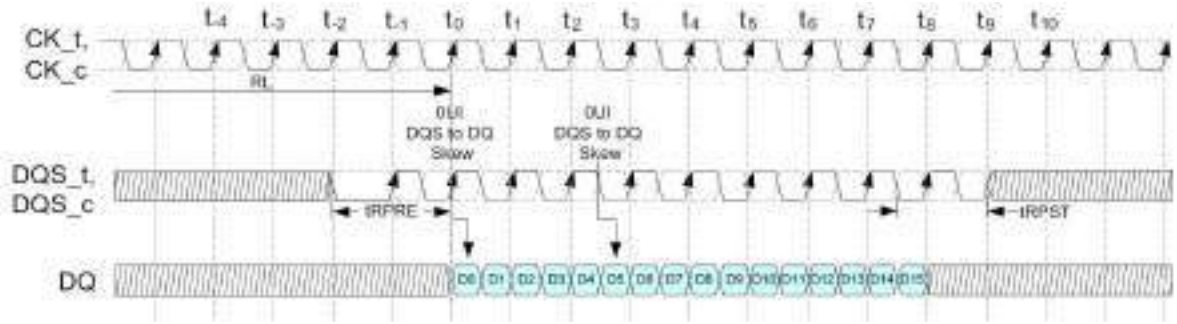


Figure 44. Read burst example for pin DQx depicting bit 0 and 5 relative to the DQS edge for 0 UI skew

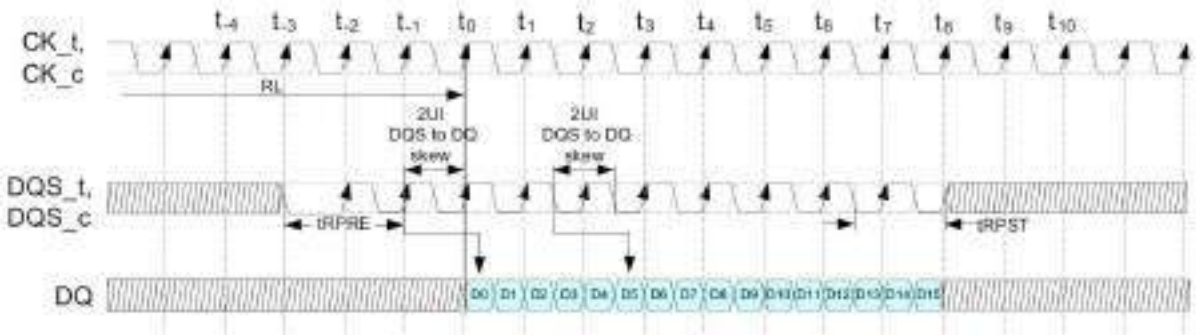


Figure 45. Read burst example for pin DQx depicting bit 0 and 5 relative to the DQS edge for 2 UI skew with Read DQS Offset Timing set to 1 Clock (2UI)

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9.11.1 Tx DQ Stressed Eye Parameters

[Table 48] Tx DQ Stressed Eye Parameters

[EH=Eye Height, EW=Eye Width; BER=Bit Error Rate, SES=Stressed Eye Skew]

Parameter	Symbol	DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Unit	Notes
		Min	Max	Min	Max	Min	Max	Min	Max		
Eye Width specified at the transmitter with a skew between DQ and DQS of 1UI	TxEW_DQ_SES_1UI	0.72	-	0.72	-	0.74	-	0.74	-	UI	1,2,3,4,6,7, 8,9,10
Eye Width specified at the transmitter with a skew between DQ and DQS of 2UI	TxEW_DQ_SES_2UI	0.72	-	0.72	-	0.74	-	0.74	-	UI	1,2,3,4,6,7, 8,9,10
Eye Width specified at the transmitter with a skew between DQ and DQS of 3UI	TxEW_DQ_SES_3UI	0.72	-	0.72	-	0.74	-	0.74	-	UI	1,2,3,4,6,7, 8,9,10
Eye Width specified at the transmitter with a skew between DQ and DQS of 4UI	TxEW_DQ_SES_4UI	-	-	-	-	0.74	-	0.74	-	UI	1,2,3,4,6,7, 8,9,10

NOTE:

1) Minimum BER E-9 and Confidence Level of 99.5% per pin
2) Refer to the minimum Bit Error Rate (BER) requirements for DDR5
3) The validation methodology for these parameters is TBD
4) Mismatch is defined as DQS to DQ mismatch, in UI increments
5) The number of UI's accumulated will depend on the speed of the link. For higher speeds, higher UI accumulation may be specified. For lower speeds, N=4,5 UI may not be applicable
6) Duty Cycle of the DQ pins must be adjusted as close to 50% as possible using the Global and Per Pin Duty Cycle Adjuster feature prior to running this test
7) The Mode Registers for the Duty Cycle Adjuster are MR43 and MR44. Also the Mode Registers for the Per Pin DCA of DQS are MR103-MR110, the Mode Registers for the Per Pin DCA of DQLx are MR(133+8x) and MR(134+8x), where 0≤x≤7, and the Mode Registers for the Per Pin DCA of DQUy are MR(197+8y) and MR(198+8y), where 0≤y≤7.
8) Spread Spectrum Clocking (SSC) must be disabled while running this test
9) These parameters are tested using the continuous PRBS8 LFSR training pattern which are sent out on all DQ lanes off the dram device without the need for sending out continuous MRR commands. The MR25 OP[3] is set to "1" to enable this feature.
10) Tested on the CTC2 card only
11) Matched DQS to DQ would require the DQs to be adjusted by 0.5UI to place it in the center of the DQ eye. 1UI mismatch would require the DQS to be adjusted 1.5UI. Generally, for XUI mismatch the DQ must be adjusted XUI + 0.5UI to be placed in the center of the eye

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10.0 SPEED BIN

[Table 49] DDR5-4400 Speed Bins and Operations

Speed Bin					DDR5-4400		Unit	Notes
CL-nRCD-nRP					36-36-36			
Parameter				Symbol	min	max		
Read command to first data				tAA	16.000	22.222	ns	12
Activate to Read or Write command delay time				tRCD	16.000	-	ns	7
Row Precharge Time				tRP	16.000	-	ns	7
Activate to Precharge command period				tRAS	32.000	5 x tREFI1	ns	7
Activate to Activate or Refresh command period				tRC (tRAS +tRP)	48.000	-	ns	7,8
CAS Write Latency				CWL	RESERVED		nCK	
Speed Bin[5]	tAAmin (ns)[5]	tRCDmin tRP-min (ns)[5]	Read CL[12]	Supported Frequency Down Bins				
-	20.952	-	22	tCK(AVG)	0.952	1.010	ns	6,9
3200C	17.500	17.500	28	tCK(AVG)	0.625	0.681	ns	
3200BN,B	16.250	16.250	26	tCK(AVG)	0.625	0.681	ns	
3200AN	15.000	15.000	24	tCK(AVG)	RESERVED		ns	
3600C	17.777	17.777	32	tCK(AVG)	0.555	<0.625	ns	
3600BN,B	16.666	16.666	30	tCK(AVG)	0.555	<0.625	ns	
3600AN	14.444	14.444	26	tCK(AVG)	RESERVED		ns	
4000C	18.000	17.500	36	tCK(AVG)	0.500	<0.555	ns	
4000BN,B	16.000	16.000	32	tCK(AVG)	0.500	<0.555	ns	
4000AN	14.000	14.000	28	tCK(AVG)	RESERVED		ns	
4400C	18.181	17.727	40	tCK(AVG)	0.454	<0.500	ns	
4400BN,B	16.363	16.363	36	tCK(AVG)	0.454	<0.500	ns	
4400AN	14.545	14.545	32	tCK(AVG)	RESERVED		ns	
Supported CL					22,26,28,30,32,36,40		nCK	12

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[Table 50] DDR5 4800 Speed Bins and Operations

Speed Bin					DDR5-4800		Unit	Notes
CL-nRCD-nRP					40-39-39			
Parameter				Symbol	min	max		
Read command to first data				tAA	16.000	22.222	ns	12
Activate to Read or Write command delay time				tRCD	16.000	-	ns	7
Row Precharge Time				tRP	16.000	-	ns	7
Activate to Precharge command period				tRAS	32.000	5 x tREFI1	ns	7
Activate to Activate or Refresh command period				tRC (tRAS +tRP)	48.000	-	ns	7,8
CAS Write Latency				CWL			nCK	
Speed Bin[5]	tAAmin (ns)[5]	tRCDmin tRP-min (ns)[5]	Read CL[12]	Supported Frequency Down Bins				
-	20.952	-	22	tCK(AVG)	0.952	1.010	ns	6,9
3200C	17.500	17.500	28	tCK(AVG)	0.625	0.681	ns	
3200BN,B	16.250	16.250	26	tCK(AVG)	0.625	0.681	ns	
3200AN	15.000	15.000	24	tCK(AVG)	RESERVED		ns	
3600C	17.777	17.777	32	tCK(AVG)	0.555	<0.625	ns	
3600BN,B	16.666	16.666	30	tCK(AVG)	0.555	<0.625	ns	
3600AN	14.444	14.444	26	tCK(AVG)	RESERVED		ns	
4000C	18.000	17.500	36	tCK(AVG)	0.500	<0.555	ns	
4000BN,B	16.000	16.000	32	tCK(AVG)	0.500	<0.555	ns	
4000AN	14.000	14.000	28	tCK(AVG)	RESERVED		ns	
4400C	18.181	17.727	40	tCK(AVG)	0.454	<0.500	ns	
4400BN,B	16.363	16.363	36	tCK(AVG)	0.454	<0.500	ns	
4400AN	14.545	14.545	32	tCK(AVG)	RESERVED		ns	
4800C	17.500	17.500	42	tCK(AVG)	0.416	<0.454	ns	
4800BN	16.666	16.666	40	tCK(AVG)	0.416	<0.454	ns	
4800B	16.666	16.250	40	tCK(AVG)	0.416	<0.454	ns	
4800AN	14.166	14.166	34	tCK(AVG)	RESERVED		ns	
Supported CL					22,26,28,30,32,36, 40,42		nCK	12

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[Table 51] DDR5 5200 Speed Bins and Operations

Speed Bin					DDR5-5200		Unit	Notes
CL-nRCD-nRP					42-42-42			
Parameter				Symbol	min	max		
Read command to first data				tAA	16.000	22.222	ns	12
Activate to Read or Write command delay time				tRCD	16.000	-	ns	7
Row Precharge Time				tRP	16.000	-	ns	7
Activate to Precharge command period				tRAS	32.000	5 x tREFI1	ns	7
Activate to Activate or Refresh command period				tRC (tRAS +tRP)	48.000	-	ns	7,8
CAS Write Latency				CWL			nCK	
Speed Bin[5]	tAAmin (ns)[5]	tRCDmin tRP-min (ns)[5]	Read CL[12]	Supported Frequency Down Bins				
-	20.952	-	22	tCK(AVG)	0.952	1.010	ns	6,9
3200C	17.500	17.500	28	tCK(AVG)	0.625	0.681	ns	
3200BN,B	16.250	16.250	26	tCK(AVG)	0.625	0.681	ns	
3200AN	15.000	15.000	24	tCK(AVG)	RESERVED		ns	
3600C	17.777	17.777	32	tCK(AVG)	0.555	<0.625	ns	
3600BN,B	16.666	16.666	30	tCK(AVG)	0.555	<0.625	ns	
3600AN	14.444	14.444	26	tCK(AVG)	RESERVED		ns	
4000C	18.000	17.500	36	tCK(AVG)	0.500	<0.555	ns	
4000BN,B	16.000	16.000	32	tCK(AVG)	0.500	<0.555	ns	
4000AN	14.000	14.000	28	tCK(AVG)	RESERVED		ns	
4400C	18.181	17.727	40	tCK(AVG)	0.454	<0.500	ns	
4400BN,B	16.363	16.363	36	tCK(AVG)	0.454	<0.500	ns	
4400AN	14.545	14.545	32	tCK(AVG)	RESERVED		ns	
4800C	17.500	17.500	42	tCK(AVG)	0.416	<0.454	ns	
4800BN	16.666	16.666	40	tCK(AVG)	0.416	<0.454	ns	
4800B	16.666	16.250	40	tCK(AVG)	0.416	<0.454	ns	
4800AN	14.166	14.166	34	tCK(AVG)	RESERVED		ns	
5200C	17.692	17.692	46	tCK(AVG)	0.384	<0.416		
5200BN,B	16.153	16.153	42	tCK(AVG)	0.384	<0.416		
5200AN	14.615	14.615	38	tCK(AVG)	RESERVED			
Supported CL					22,26,28,30,32,36, 40,42,46		nCK	12

[Table 52] DDR5 5600 Speed Bins and Operations

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Speed Bin				DDR5-5600			
CL-nRCD-nRP				46-45-45		Unit	Notes
Parameter			Symbol	min	max		
Read command to first data			tAA	16.000	22.222	ns	12
Activate to Read or Write command delay time			tRCD	16.000	-	ns	7
Row Precharge Time			tRP	16.000	-	ns	7
Activate to Precharge command period			tRAS	32.000	5 x tREFI1	ns	7
Activate to Activate or Refresh command period			tRC (tRAS +tRP)	48.000	-	ns	7,8
CAS Write Latency			CWL			nCK	
Speed Bin[5]	tAAmin (ns)[5]	tRCDmin tRP-min (ns)[5]	Read CL[12]	Supported Frequency Table			
-	20.952	-	22	tCK(AVG)	0.952	1.010	ns	6,9
3200C	17.500	17.500	28	tCK(AVG)	0.625	0.681	ns	
3200BN,B	16.250	16.250	26	tCK(AVG)	0.625	0.681	ns	
3200AN	15.000	15.000	24	tCK(AVG)	RESERVED		ns	
3600C	17.777	17.777	32	tCK(AVG)	0.555	<0.625	ns	
3600BN,B	16.666	16.666	30	tCK(AVG)	0.555	<0.625	ns	
3600AN	14.444	14.444	26	tCK(AVG)	RESERVED		ns	
4000C	18.000	17.500	36	tCK(AVG)	0.500	<0.555	ns	
4000BN,B	16.000	16.000	32	tCK(AVG)	0.500	<0.555	ns	
4000AN	14.000	14.000	28	tCK(AVG)	RESERVED		ns	
4400C	18.181	17.727	40	tCK(AVG)	0.454	<0.500	ns	
4400BN,B	16.363	16.363	36	tCK(AVG)	0.454	<0.500	ns	
4400AN	14.545	14.545	32	tCK(AVG)	RESERVED		ns	
4800C	17.500	17.500	42	tCK(AVG)	0.416	<0.454	ns	
4800BN	16.666	16.666	40	tCK(AVG)	0.416	<0.454	ns	
4800B	16.666	16.250	40	tCK(AVG)	0.416	<0.454	ns	
4800AN	14.166	14.166	34	tCK(AVG)	RESERVED		ns	
5200C	17.692	17.692	46	tCK(AVG)	0.384	<0.416		
5200BN,B	16.153	16.153	42	tCK(AVG)	0.384	<0.416		
5200AN	14.615	14.615	38	tCK(AVG)	RESERVED			
5600C	17.857	17.500	50	tCK(AVG)	0.357	<0.384		
5600BN	16.428	16.428	46	tCK(AVG)	0.357	<0.384		
5600B	16.428	16.071	46	tCK(AVG)	0.357	<0.384		
5600AN	14.285	14.285	40	tCK(AVG)	RESERVED			
Supported CL				22,26,28,30,32,36, 40,42,46,50		nCK	12

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NOTE:

1) Minimum timing parameters are defined according to the rules in the Rounding Definitions and Algorithms section.
2) The translation of all timing parameters from ns values to nCK values shall follow the Rounding Algorithm. The translation of tAA to CL shall follow the explicit combinations listed in the Speed Bin Tables.
3) The CL setting and CWL setting result in tCK(avg).MIN and tCK(avg).MAX requirements. When selecting tCK(avg), requirements from the CL setting as well as requirements from the CWL setting shall be fulfilled.
4) 'Reserved' settings are not allowed. The user shall program a different value.
5. This column shows the intended native speed bin timings to be replaced and supported when down clocking. This column does not necessarily show the actual minimum speed bin timings allowed and supported when down clocking because the timings could be faster according to the Rounding Algorithm, depending on the specific speed bin and down clock frequency combination.
6) DDR5-3200 AC timings apply if the DRAM operates slower than the 2933 MT/s data rate. This is not limited to only the Speed Bin Table timings.
7) Parameters apply from tCK(avg)min to tCK(avg)max.
8) tRC(min) shall always be greater than or equal to tRAS(min) + tRP(min), and when using the appropriate rounding algorithms, nRC(min) shall always be greater than or equal to nRAS(min) + nRP(min).
9) tCK(avg).max of 1.010 ns (1980 MT/s data rate) is defined to allow for 1% SSC down-spreading at a data rate of 2000 MT/s according to JESD404-1.
10) Each speed bin lists the timing requirements that need to be supported in order for a given DRAM to be JEDEC standard. The JEDEC standard does not require support for all speed bins within a given speed. The JEDEC standard requires meeting the parameters for a least one of the listed speed bins.
11) Any speed bin also supports functional operation at slower frequencies as shown in the table which are not subject to Production Tests but are verified by Design/Character -ization.
12) The CL Algorithm can be used to mathematically determine the valid CAS Latencies listed in the Speed Bin Tables. The CL Algorithm calculates supported CAS Latencies by rounding the operating frequency up to the next faster native speed bin (i.e., 3200 MT/s, 3600 MT/s...). Using the resulting tCK(AVG)min, and the bin target timings, the CL Algorithm then uses the Rounding Algorithm to calculate the valid CAS Latency. Because the DDR5 SDRAM specification only supports even CAS Latencies, odd CAS Latencies are rounded up to the next even CAS Latency. The 1980-2100 MT/s data rate always uses CL22. If tAA(corrected) or tRCDtRP(corrected) are violated, the CL Algorithm uses a slower combination of tAA(target) and tRCDtRP(target) to return slower valid CAS Latencies. The DDR5 SDRAM can support up to four valid CAS Latencies, CL(AN), CL(B), CL(BN), and CL(C), for a given frequency. tAA(corrected) and tRCDtRP(corrected) are calculated by reducing tAA(min), tRCD(min), and tRP(min) by the Rounding Algorithm correction factor. The proper setting of CL shall be determined by the memory controller, either by using the Speed Bin Tables, or by using the CL Algorithm, or by some other means. Refer to the Rounding Definitions and Algorithm section for more information.

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11.0 IDD,IDDQ,IPPSPECIFICATION PARAMETERS AND TEST CONDITIONS

11.1 IDD, IPP and IDDQ Measurement Conditions

In this chapter, IDD, IPP and IDDQ measurement conditions such as test load and patterns are defined. Figure 46 shows the setup and test load for IDD, IPP and IDDQ measurements.

- IDD currents (such as IDD0, IDDQ0, IPP0, IDD0F, IDDQ0F, IPP0F, IDD2N, IDDQ2N, IPP2N, IDD2NT, IDDQ2NT, IPP2NT, IDD2P, IDDQ2P, IPP2P, IDD3N, IDDQ3N, IPP3N, IDD3P, IDDQ3P, IPP3P, IDD4R, IDDQ4R, IPP4R, IDD4RC, IDD4W, IDDQ4W, IPP4W, IDD4WC, IDD5F, IDDQ5F, IPP5F, IDD5B, IDDQ5B, IPP5B, IDD5C, IDDQ5C, IPP5C, IDD6N, IDDQ6N, IPP6N, IDD6E, IDDQ6E, IPP6E, IDD7, IDDQ7, IPP7, and IDD8, IDDQ8, IPP8) are measured as time-averaged currents with all VDD balls of the DDR5 SDRAM under test tied together. Any IDDQ or IPP current is not included in IDD currents.
- IDDQ currents are measured as time-averaged currents with all VDDQ balls of the DDR5 SDRAM under test tied together. Any IDD or IPP current is not included in IDDQ currents.
- IPP currents are measured as time-averaged currents with all VPP balls of the DDR5 SDRAM under test tied together. Any IDD or IDDQ current is not included in IPP currents.

Attention: IDDQ values cannot be directly used to calculate IO power of the DDR5 SDRAM. They can be used to support correlation of simulated IO power to actual IO power as outlined in Figure 47.

For IDD, IPP and IDDQ measurements, the following definitions apply:

- “0” and “LOW” is defined as VIN <= VILAC(max).
- “1” and “HIGH” is defined as VIN >= VIHAC(min).
- “MID-LEVEL” is defined as inputs are VREF = 0.75 * VDDQ.
- Detailed IDD, IPP and IDDQ Measurement-Loop Patterns are described in Table 51 through Table 60.
- IDD Measurements are done after properly initializing and training the DDR5 SDRAM. This includes but is not limited to setting

RON = RZQ/7 (34 Ohm in MR5);
RTT_NOM = RZQ/6 (40 Ohm in MR35);
RTT_WR = RZQ/2 (120 Ohm in MR34), only during IDD4 & IDD7 measurements, RTT_OFF for all other IDD measurements
RTT_PARK = Disable in MR33 and MR34;
Qoff = 0B (Output Buffer enabled) in MR5;
TDQS_t disabled in MR5;
CRC disabled in MR50;
DM disabled in MR5;
1N mode enabled and set CS assertion duration (MR2:OP[4]) as 1B in MR2, unless otherwise specified in the IDD, IDDQ and IPP patterns’ conditions definitions;

- Attention: The IDD, IPP and IDDQ Measurement-Loop Patterns need to be executed at least one time before actual IDD, IDDQ or IPP measurement is started.
- TCASE defined as 0 - 95°C, unless stated in the specific condition definition table below.
- For all IDD, IDDQ and IPP measurement loop timing parameters, refer to the timing parameters defined in the spec to calculate the nCK required.

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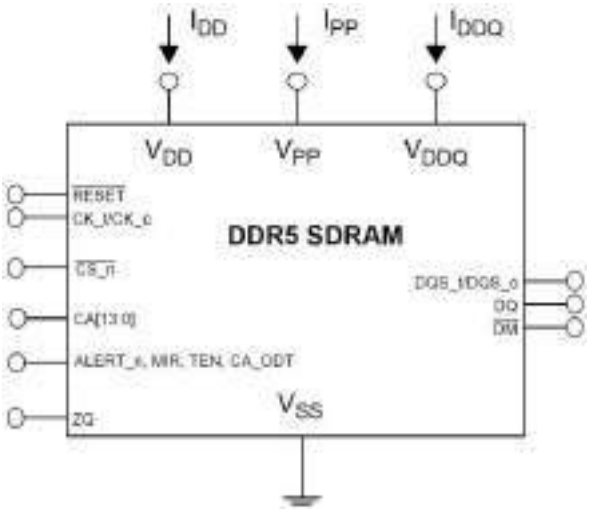


Figure 46. Measurement Setup and Test Load for IDD, IPP and IDDQ Measurements

NOTE:
1) DIMM level Output test load condition may be different from above.

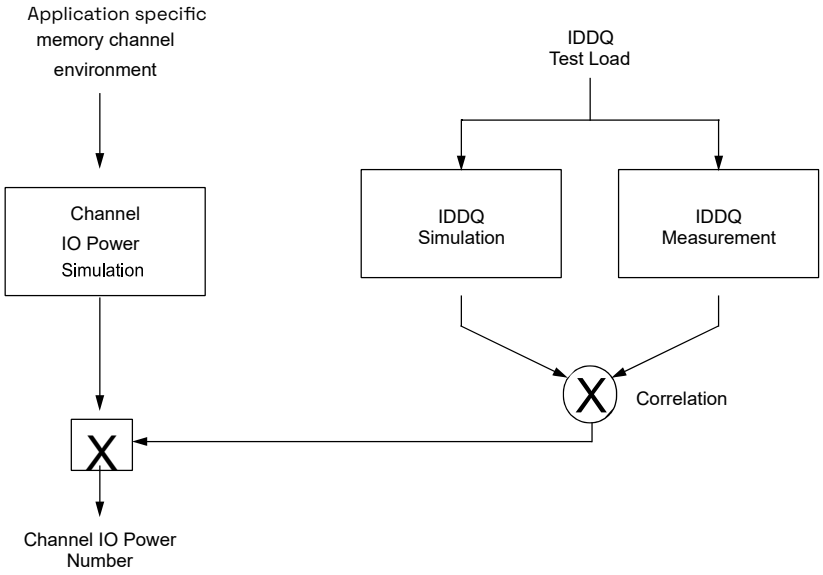


Figure 47. Correlation from simulated Channel IO Power to actual Channel IO Power supported by IDDQ Measurement.

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[Table 53] Basic IDD, IDDQ and IPP Measurement Conditions

Symbol	Description
IDD0	Operating One Bank Active-Precharge Current External clock: On; tCK, nRC, nRAS, nRP, nRRD: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: High between ACT and PRE; CA Inputs: partially toggling according to Table 54. Data IO: VDDQ; DM_n: stable at 1; Bank Activity: Cycling with one bank active at a time: 0,0,1,1,2,2,... (see Table 54); Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 54
IDD0Q	Operating One Bank Active-Precharge IDDQ Current Same condition with IDD0, however measuring IDDQ current instead of IDD current
IPP0	Operating One Bank Active-Precharge IPP Current Same condition with IDD0, however measuring IPP current instead of IDD current
IDD0F	Operating Four Bank Active-Precharge Current External clock: On; tCK, nRC, nRAS, nRP, nRRD: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: High between ACT and PRE; CA Inputs: partially toggling according to Table 55; Data IO: VDDQ; DM_n: stable at 1; Bank Activity: Cycling with four bank active at a time: (see Table 55); Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 55
IDD0QF	Operating Four Bank Active-Precharge IDDQ Current Same condition with IDD0F, however measuring IDDQ current instead of IDD current
IPP0F	Operating Four Bank Active-Precharge IPP Current Same condition with IDD0F, however measuring IPP current instead of IDD current
IDD2N	Precharge Standby Current External clock: On; tCK: refer to Chapter 13.3 Timing Parameters by Speed Grade; CS_n: stable at 1; CA Inputs: partially toggling according to Table 56; Data IO: VDDQ; DM_n: stable at 1; Bank Activity: all banks closed; Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 56
IDD2Q2N	Precharge Standby IDDQ Current Same condition with IDD2N, however measuring IDDQ current instead of IDD current
IPP2N	Precharge Standby IPP Current Same condition with IDD2N, however measuring IPP current instead of IDD current
IDD2NT	Precharge Standby Non-Target Command Current External clock: On; tCK: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: High between WRITE commands; CS_n, CA Inputs: partially toggling according to Table 57; Data IO: VDDQ; DM_n: stable at 1; Bank Activity: all banks closed; Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 57
IDDQ2NT (Optional)	Precharge Standby Non-Target Command IDDQ Current Same condition with IDD2NT, however measuring IDDQ current instead of IDD current

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[Table 53] Basic IDD, IDDQ and IPP Measurement Conditions

Symbol	Description
IPP2NT (Optional)	Precharge Standby Non-Target Command IPP Current Same condition with IDD2NT, however measuring IPP current instead of IDD current
IDD2P	Precharge Power-Down Device in Precharge Power-Down, External clock: On; tCK: refer to Chapter 13.3 Timing Parameters by Speed Grade; CS_n: stable at 1 after Power Down Entry command; CA Inputs: stable at 1; CA11=H during the PDE command; Data IO: VDDQ; DM_n: stable at 1; Bank Activity: all banks closed; Output Buffer and RTT: Enabled in Mode Registers[2];
IDDQ2P	Precharge Power-Down Same condition with IDD2P, however measuring IDDQ current instead of IDD current
IPP2P	Precharge Power-Down Same condition with IDD2P, however measuring IPP current instead of IDD current
IDD3N	Active Standby Current E xternal clock: On; tCK: refer to Chapter 13.3 Timing Parameters by Speed Grade; CS_n: stable at 1; CA Inputs: partially toggling according to Table 56; Data IO: VDDQ; DM_n: stable at 1; Bank Activity: all banks open; Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 56
IDDQ3N	Active Standby IDDQ Current Same condition with IDD3N, however measuring IDDQ current instead of IDD current
IPP3N	Active Standby IPP Current Same condition with IDD3N, however measuring IPP current instead of IDD current
IDD3P	Active Power-Down Current Device in Active Power-Down, External clock: On; tCK: refer to Chapter 13.3 Timing Parameters by Speed Grade; CS_n: stable at 1 after Power Down Entry command; CA Inputs: stable at 1; CA11=H during the PDE command; Data IO: VDDQ; DM_n: stable at 1; Bank Activity: all banks open; Output Buffer and RTT: Enabled in Mode Registers[2];
IDDQ3P	Active Power-Down IDDQ Current Same condition with IDD3P, however measuring IDDQ current instead of IDD current
IPP3P	Active Power-Down IPP Current Same condition with IDD3P, however measuring IPP current instead of IDD current
IDD4R	Operating Burst Read Current External clock: On; tCK, nCCD_S, CL: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: High between RD; CA Inputs: partially toggling according to Table 56; Data IO: seamless read data burst with different data between one burst and the next one according to Table 58; DM_n: stable at 1; Bank Activity: all banks open, RD commands cycling through banks: 0,0,1,1,2,2,... (see Table 58); Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 58
IDD4RC	Operating Burst Read Current with Read CRC Read CRC enabled[4]. Other conditions: see IDD4R
IDDQ4R	Operating Burst Read IDDQ Current Same definition like for IDD4R, however measuring IDDQ current instead of IDD current
IPP4R	Operating Burst Read IPP Current Same condition with IDD4R, however measuring IPP current instead of IDD current
IDD4W	Operating Burst Write Current External clock: On; tCK, nCCD_S_WR, CL: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: High between WR; CA Inputs: partially toggling according to Table 59; Data IO: seamless write data burst with different data between one burst and the next one according to Table 59; DM_n: stable at 1; Bank Activity: all banks open, WR commands cycling through banks: 0,0,1,1,2,2,... (see Table 59); Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 59
IDD4WC	Operating Burst Write Current with Write CRC Write CRC enabled[3], Other conditions: see IDD4W
IDDQ4W	Operating Burst Write IDDQ Current Same condition with IDD4W, however measuring IDDQ current instead of IDD current
IPP4W	Operating Burst Write IPP Current Same condition with IDD4W, however measuring IPP current instead of IDD current

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Symbol	Description
IDD5B	Burst Refresh Current (Normal Refresh Mode) External clock: On; tCK, nRFC1: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: High between REF; CA Inputs: partially toggling according to Table 60; Data IO: VDDQ; DM_n: stable at 1; Bank Activity: REF command every nRFC1 (see Table 60); Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 60
IDDQ5B	Burst Refresh IDDQ Current (Normal Refresh Mode) Same condition with IDD5B, however measuring IDDQ current instead of IDD current
IPP5B	Burst Refresh IPP Current (Normal Refresh Mode) Same condition with IDD5B, however measuring IPP current instead of IDD current

[Table 53] Basic IDD, IDDQ and IPP Measurement Conditions

Symbol	Description
IDD5F	Burst Refresh Current (Fine Granularity Refresh Mode) tRFC=tRFC2, Other conditions: see IDD5B
IDDQ5F	Burst Refresh IDDQ Current (Fine Granularity Refresh Mode) Same condition with IDD5F, however measuring IDDQ current instead of IDD current
IPP5F	Burst Refresh IPP Current (Fine Granularity Refresh Mode) Same condition with IDD5F, however measuring IPP current instead of IDD current
IDD5C	Burst Refresh Current (Same Bank Refresh Mode) External clock: On; tCK, nRFCsb: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: High between REF; CA Inputs: partially toggling according to Table 61; Data IO: VDDQ; DM_n: stable at 1; Bank Activity: REF command every nRFCsb (see Table 61); Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 61
IDDQ5C	Burst Refresh IDDQPP Current (Same Bank Refresh Mode) Same condition with IDD5C, however measuring IDDQ current instead of IDD current
IPP5C	Burst Refresh IPP Current (Same Bank Refresh Mode) Same condition with IDD5C, however measuring IPP current instead of IDD current
IDD6N	Self Refresh Current: Normal Temperature Range TCASE: 0 - 85°C; External clock: Off; CK_t and CK_c: HIGH; tCK, nCPDED: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n#: low; CA, Data IO: High; DM_n: stable at 1; Bank Activity: Self-Refresh operation; Output Buffer and RTT: Disabled by the DRAM upon entry into Self- Refresh
IDDQ6N	Self Refresh IDDQ Current: Normal Temperature Range Same condition with IDD6N, however measuring IDDQ current instead of IDD current
IPP6N	Self Refresh IPP Current: Normal Temperature Range Same condition with IDD6N, however measuring IPP current instead of IDD current
IDD6E	Self Refresh Current: Extended Temperature Range) TCASE: 85 - 95°C; Extended4; External clock: Off; CK_t and CK_c: HIGH; tCK, nCPDED: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: low; CA, Data IO: High; DM_n:stable at 1; Bank Activity: Self-Refresh operation; Output Buffer and RTT: Disabled by the DRAM upon entry into Self-Refresh
IDDQ6E	Self Refresh IDDQ Current: Extended Temperature Range Same condition with IDD6E, however measuring IDDQ current instead of IDD current
IPP6E	Self Refresh IPP Current: Extended Temperature Range Same condition with IDD6E, however measuring IPP current instead of IDD current

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Symbol	Description
IDD7	Operating Bank Interleave Read Current External clock: On; tCK, nRC, nRAS, nRCD, nRRD_S, nFAW, tCCD_S CL: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n: High between ACT and RDA; CA Inputs: partially toggling according to Table 63; Data IO: read data bursts with different data between one burst and the next one according to Table 63; DM_n: stable at 1; Bank Activity: two times interleaved cycling through banks (0, 1,...7) with different addressing, see Table 63; Output Buffer and RTT: Enabled in Mode Registers[2]; Pattern Details: see Table 63
IDDQ7	Operating Bank Interleave Read IDDQ Current Same condition with IDD7, however measuring IDDQ current instead of IDD current
IPP7	Operating Bank Interleave Read IPP Current Same condition with IDD7, however measuring IPP current instead of IDD current
IDD8	Maximum Power Saving Deep Power Down Current External clock: Off; CK_t and CK_c: HIGH; tCK, nCPDED: refer to Chapter 13.3 Timing Parameters by Speed Grade; BL: 16[1]; CS_n#: low; CA:High, DM_n: stable at 1; Bank Activity: All banks closed and device in MPSM deep power down mode5; Output Buffer and RTT: Enabled in Mode Registers[2]; Patterns Details: same as IDD6N but MPSM is enabled in mode register.
IDDQ8	Maximum Power Saving Deep Power Down IDDQ Current Same condition with IDD8, however measuring IDDQ current instead of IDD current
IPP8	Maximum Power Saving Deep Power Down IPP Current Same condition with IDD8, however measuring IPP current instead of IDD current
IDD9 (Optional)	MBIST Current Device in MBIST mode, External clock: On; CS_n: Stable at 1 after MBIST entry; CA Inputs: stable at 1; Data IO: VDDQ; Bank Activity: MBIST operation; Output Buffer and RTT: Enabled in Mode Registers[2];
IDDQ9 (Optional)	MBIST IDDQ Current Same condition with IDD9, however measuring IDDQ current instead of IDD current
IPP9 (Optional)	MBIST IPP Current Same condition with IDD9, however measuring IPP current instead of IDD current

NOTE:
1) Burst Length: BL16 fixed by MR0 OP[1:0]=00
2) Output Buffer Enable
- set MR5 OP[0] = 0] : Qoff = Output buffer enabled
- set MR5 OP[2:1] = 00]: Pull-Up Output Driver Impedance Control = RZQ/7
- set MR5 OP[7:6] = 00]: Pull-Down Output Driver Impedance Control = RZQ/7
RTT_Nom enable
- set MR35 OP[5:0] = 110110: RTT_NOM_WR = RTT_NOM_RD = RZQ/6
RTT_WR enable
- set MR34 OP[5:3] = 010 RTT_WR = RZQ/2
RTT_PARK disable
- set MR34 OP[2:0] = 000
3) WRITE CRC enabled
- set MR50 OP[2:1] = 11 4) Read CRC enabled
- set MR50:OP[0]=1
5) MPSM Deep Power Down Mode
- set MR2:OP[3]=1 if PDA Enumerate ID not equal to 15
- set MR2:OP[5]=1 if PDA Enumerate ID equal to 15

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11.2 IDD0, IDDQ0, IPP0 Pattern

Executes Active and PreCharge commands with tightest timing possible while exercising all Bank and Bank Group addresses. Note 2 applies to the entire table.

[Table 54] IDD0, IDDQ0, IPP0

Sub-Loop	Sequence	Command	CS_n	C/A [13:0]	Row Address [17:0]	BA [1:0]	BG [2:0]	CID [2:0]	Special Instructions
0	0	ACT	L H	-	0x00000	0x0	0x00	0x0	
	1	DES	H	Toggling[1]					Repeat sequence to satisfy tRAS(min), truncate if required
	2	PREpb	L	-		0x0	0x00	0x0	
	3	DES	H	Toggling[1]					Repeat sequence to satisfy tPR(min), truncate if required
	4	ACT	L H	-	0x03FFF	0x0	0x00	0x0	
	5	DES	H	Toggling[1]					Repeat sequence to satisfy tRAS(min), truncate if required
	6	PREpb	L	-		0x0	0x00	0x0	
	7	DES	H	Toggling[1]					Repeat sequence to satisfy tPR(min), truncate if required
1	8-15	Repeat sub-loop 0, use BG[2:0]=0x1 instead							
2	16-23	Repeat sub-loop 0, use BG[2:0]=0x2 instead							
3	24-31	Repeat sub-loop 0, use BG[2:0]=0x3 instead							
4	32-39	Repeat sub-loop 0, use BG[2:0]=0x4 instead							skip for x16
5	40-47	Repeat sub-loop 0, use BG[2:0]=0x5 instead							skip for x16
6	48-55	Repeat sub-loop 0, use BG[2:0]=0x6 instead							skip for x16
7	56-63	Repeat sub-loop 0, use BG[2:0]=0x7 instead							skip for x16
8-15	64-127	Repeat sub loops 0-7, use BA[1:0]=0x1 instead							
16-23	128-191	Repeat sub loops 0-7, use BA[1:0]=0x2 instead							
24-31	192-255	Repeat sub loops 0-7, use BA[1:0]=0x3 instead							
...	...	Repeat sub loops 0-31 for each 3DS logical rank, if applicable							CID[2:0]=0x1-0x7

NOTE :
1) Utilize DESELECTs between commands while toggling all C/A bits per the 4-cycle sequence defined in the IDD2N, IDD3N pattern

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11.3 IDDOF, IDDQOF, IPPOF Pattern

Executes a rolling four bank group Active and PreCharge commands per tRC time while exercising all Bank, Bank, Group and CID addresses. Note 2 applies to the entire table.

[Table 55] IDDOF, IDDQOF, IPPOF

Sub-Loop	Sequence	Command	CS_n	C/A [13:0]	Row Address [17:0]	BA [1:0]	BG [2:0]	CID [2:0]	Special Instructions
0	0	ACT	L H		0x00000	0x0	0x00	0x0	
	1	DES	H	Toggling[1]					Repeat to satisfy tRRD(min) (6 DES to meet 8nCK)
	2	ACT	L H		0x00000	0x0	0x01	0x0	
	3	DES	H	Toggling[1]					Repeat to satisfy tRRD(min) (6 DES to meet 8nCK)
	4	ACT	L H		0x00000	0x0	0x02	0x0	
	5	DES	H	Toggling[1]					Repeat to satisfy tRRD(min) (6 DES to meet 8nCK)
	6	ACT	L H		0x00000	0x0	0x03	0x0	
	7	DES	H	Toggling[1]					Repeat to satisfy tRAS(min) from Sequence 0
	8	PREpb	L			0x0	0x00	0x0	
	9	DES	H	Toggling[1]					Repeat for tRRD(min) (7 DES to meet 8nCK) This allows for next PRE to meet tRAS(min)
	10	PREpb	L			0x0	0x01	0x0	
	11	DES	H	Toggling[1]					Repeat for tRRD(min) (7 DES to meet 8nCK) This allows for next PRE to meet tRAS(min)
	12	PREpb	L			0x0	0x02	0x0	
	13	DES	H	Toggling[1]					Repeat for tRRD(min) (7 DES to meet 8nCK) This allows for next PRE to meet tRAS(min)
	14	PREpb	L			0x0	0x03	0x0	
	15	DES	H	Toggling[1]					Repeat for tRRD(min) (7 DES to meet 8nCK) This allows for next PRE to meet tRAS(min)
	16	DES	H	Toggling[1]					Repeat for tRC(min) from Sequence 0 first ACTIVATE. This will be zero DESELECTS for speed 4000Mbps and slower.
1	17-33	Repeat sub-loop 0, use Row Address = 0x03FFF for the ACT instead							
2-3	34-67	Repeat sub-loop 0-1, use BG[2:0]=0x4,0x5,0x6,0x7 instead of 0x0,0x1,0x2,0x3							skip for x16
4-7	68-101	Repeat sub-loops 0-3, use BA[1:0]=0x1 instead							
8-11	102-135	Repeat sub-loops 0-3, use BA[1:0]=0x2 instead							
12-15	136-169	Repeat sub-loops 0-3, use BA[1:0]=0x3 instead							
...	...	Repeat sub loops 0-15 for each 3DS logical rank, if applicable							CID[2:0]=0x1-0x7

NOTE:

1) Utilize DESELECTs between commands while toggling C/A bits per the 4-cycle sequence defined in the IDD2N, IDD3N pattern.

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11.4 IDD2N, IDD3N Pattern

Executes DESELECT commands while exercising all command/address pins in a predefined pattern. All notes apply to entire table. **[Table 56] IDD2N, IDDQ2N, IPP2N, IDD3N, IDDQ3N, IPP3N**

Sequence	Command	CS	C/A [13:0]
0	DES	H	0x0000
1	DES	H	0x3FFF
2	DES	H	0x3FFF
3	DES	H	0x3FFF

NOTE:
1) Data is pulled to VDDQ
2) DQS_t and DQS_c are pulled to VDDQ
3) Command / Address ODT is disabled
4) Repeat sequence 0 through 3
5) All banks of all logical ranks mimic the same test condition

11.5 IDD2NT, IDDQ2NT, IPP2NT Pattern

Executes Non-Target WRITE commands simulating Rank to Rank timing while exercising all C/A bits. Notes 3-6 apply to entire table.

[Table 57] IDD2NT, IDDQ2NT, IPP2NT

Sequence	Command	CS_n	C/A [13:0]	Special Instructions
0	WRITE	L	0x002D	All valid C/A inputs to VSS
		L	0x0000	
1	DES	H	Toggling[2]	Repeat sequence to meet 1*tCCD_S(min), truncate if required
2	WRITE	L	0x3FED	All valid C/A inputs to VDDQ
		L	0x3FFF	
3	DES	H	Toggling[2]	Repeat sequence to meet 1*tCCD(min), truncate if required

NOTE:
1) WRITE with CS_n=L on both cycles indicated a non-target WRITE
2) Utilize DESELECTs between commands while toggling C/A bits per the 4-cycle sequence defined in the IDD2N, IDD3N pattern
3) Time between Non-Target WRITEs reflect tCCD_S (min) for one rank
4) DQ signals are VDDQ
5) DQS_t, DQS_c are VDDQ
6) Repeat 0 through 3

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11.6 IDD4R, IDDQ4R, IPP4R Pattern

Executes READ commands with tightest timing possible while exercising all Bank, Bank Group and CID addresses. Notes 2-9 apply to entire table **[Table 58] IDD4R, IDDQ4R, IPP4R**

Sub-Loop	Sequence	Command	CS_n	C/A [13:0]	Column Address [10:0]	BA [1:0]	BG [2:0]	CID [3:0]	Data Burst (BL=16)	Special Instructions
0	0	READ	L H	-	0x000	0x00	0x0	0x0	Pattern A	All "Valid" inputs = VDDQ
	1	DES	H	Toggling[1]	-					Repeat sequence to satisfy tCCD_S(min), truncate if required
1	2	READ	L H	-	0x3F0	0x00	0x1	0x0	Pattern B	All "Valid" inputs = VDDQ
	3	DES	H	Toggling[1]	-					Repeat sequence to satisfy tCCD_S(min), truncate if required
2	4-5	Repeat sub-loop 0, use BG[2:0]=0x2 instead								
3	6-7	Repeat sub-loop 1, use BG[2:0]=0x3 instead								
4	8-9	Repeat sub-loop 0, use BG[2:0]=0x4 instead								skip for x16
5	10-11	Repeat sub-loop 1, use BG[2:0]=0x5 instead								skip for x16
6	12-13	Repeat sub-loop 0, use BG[2:0]=0x6 instead								skip for x16
7	14-15	Repeat sub-loop 1, use BG[2:0]=0x7 instead								skip for x16
8	16	READ	L H	-	0x3F0	0x00	0x0	0x0	Pattern B	All "Valid" inputs = VDDQ
	17	DES	H	Toggling[1]						Repeat sequence to satisfy tCCD_S(min), truncate if required
9	18	READ	L H	-	0x000	0x00	0x1	0x0	Pattern A	All "Valid" inputs = VDDQ
	19	DES	H	Toggling[1]						Repeat sequence to satisfy tCCD_S(min), truncate if required
10	20-21	Repeat sub-loop 8, use BG[2:0]=0x2 instead								
11	22-23	Repeat sub-loop 9, use BG[2:0]=0x3 instead								
12	24-25	Repeat sub-loop 8, use BG[2:0]=0x4 instead								skip for x16
13	26-27	Repeat sub-loop 9, use BG[2:0]=0x5 instead								skip for x16
14	28-29	Repeat sub-loop 8, use BG[2:0]=0x6 instead								skip for x16
15	30-31	Repeat sub-loop 9, use BG[2:0]=0x7 instead								skip for x16
16-31	32-33	Repeat sub-loops 0-15, use BA[1:0]=0x1 instead								
32-47	34-35	Repeat sub-loops 0-15, use BA[1:0]=0x2 instead								
48-63	36-37	Repeat sub-loops 0-15, use BA[1:0]=0x3 instead								
...	...	Repeat sub-loops 0-63 for each 3DS logical rank, if applicable								CID[2:0]=0x1-0x7

NOTE:

1) Utilize DESELECTs between commands while toggling all C/A bits 100% each cycle (0x3FFF, 0x0000, 0x3FFF, 0x0000...) per the 4-cycle sequence defined in the IDD2N,
IDD3N pattern
2) READs performed with Auto Precharge = H, Burst Chop = H

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3) Row address is set to 0x0000
4) Data reflects burst length of 16
5) Data Pattern A for x4: 0x0, 0xF, 0xF, 0x0, 0x0, 0xF, 0x0, 0xF, 0xF, 0x0, 0x0, 0xF, 0x0, 0xF, 0x0, 0xF
6) Data Pattern B for x4: 0xF, 0x0, 0x0, 0xF, 0xF, 0x0, 0xF, 0x0, 0x0, 0xF, 0xF, 0x0, 0xF, 0x0, 0xF, 0x0
7) Data Pattern for x8 each beat will reflect two like nibbles (Data Pattern A = 0x00, 0xFF, 0xFF...)
8) Data Pattern for x16 each beat will reflect two like bytes (Data Pattern A = 0x0000, 0xFFFF, 0xFFFF...)
9) Where C/A column is not populated, refer to command truth table, column address, BA, BG, and CID for the C/A state

11.7 IDD4W, IDDQ4W, IPP4W Pattern

Executes WRITE commands with tightest timing possible while exercising all Bank, Bank Group and CDI CID addresses. Notes 2-6 apply to entire table.

[Table 59] IDD4W, IDDQ4W, IPP4W

Sub-Loop	Sequence	Command	CS_n	C/A [13:0]	Column Address [10:0]	BA [1:0]	BG [2:0]	CID [3:0]	Data Burst (BL=16)	Special Instructions
0	0	WRITE	L H	-	0x000	0x00	0x0	0x0	Pattern A	All “Valid” inputs = VDDQ
	1	DES	H	Toggling[1]	-					Repeat sequence to satisfy tCCD_S(min), truncate if required
1	2	WRITE	L H	-	0x3F0	0x00	0x1	0x0	Pattern B	All “Valid” inputs = VDDQ
	3	DES	H	Toggling[1]	-					Repeat sequence to satisfy tCCD_S(min), truncate if required
2	4-5	Repeat sub-loop 0, use BG[2:0]=0x2 instead								
3	6-7	Repeat sub-loop 1, use BG[2:0]=0x3 instead								
4	8-9	Repeat sub-loop 0, use BG[2:0]=0x4 instead								skip for x16
5	10-11	Repeat sub-loop 1, use BG[2:0]=0x5 i nstead								skip for x16
6	12-13	Repeat sub-loop 0, use BG[2:0]=0x6 instead								skip for x16
7	14-15	Repeat sub-loop 1, use BG[2:0]=0x7 instead								skip for x16
8	16	WRITE	L H	-	0x3F0	0x00	0x0	0x0	Pattern B	All “Valid” inputs = VDDQ
	17	DES	H	Toggling[1]	-					Repeat sequence to satisfy tCCD_S(min), truncate if required
9	18	WRITE	L H	-	0x000	0x00	0x1	0x0	Pattern A	All “Valid” inputs = VDDQ
	19	DES	H	Toggling[1]	-					Repeat sequence to satisfy tCCD_S(min), truncate if required
10	20-21	Repeat sub-loop 8, use BG[2:0]=0x2 instead								
11	22-23	Repeat sub-loop 9, use BG[2:0]=0x3 instead								
12	24-25	Repeat sub-loop 8, use BG[2:0]=0x4 instead								skip for x16
13	26-27	Repeat sub-loop 9, use BG[2:0]=0x5 instead								skip for x16
14	28-29	Repeat sub-loop 8, use BG[2:0]=0x6 instead								skip for x16
15	30-31	Repeat sub-loop 9, use BG[2:0]=0x7 instead								skip for x16
16-31	32-33	Repeat sub-loops 0-15, use BA[1:0]=0x1 instead								

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Sub-Loop	Sequence	Command	CS_n	C/A [13:0]	Column Address [10:0]	BA [1:0]	BG [2:0]	CID [3:0]	Data Burst (BL=16)	Special Instructions
32-47	34-35	Repeat sub-loops 0-15, use BA[1:0]=0x2 instead								
48-63	36-37	Repeat sub-loops 0-15, use BA[1:0]=0x3 instead								
...	...	Repeat sub-loops 0-63 for each 3DS logical rank, if applicable								CID[2:0]=0x1-0x7

NOTE:
1) Utilize DESELECTs between commands per the 4-cycle sequence defined in the IDD2N, IDD3N pattern
2) WRITEs performed with Auto Precharge = H, Burst Chop = TBD
3) Row address is set to 0x0000
4) Data reflects burst length of 16
5) Refer to IDD4R measurement loop table for data pattern definition
6) Where C/A column is not populated, refer to command truth table, column address, BA, BG, and CID for the C/A state

11.8 IDD5B, IDDQ5B, IPP5B, IDD5F, IDDQ5F, IPP5F Pattern

Executes Refresh (all Banks) command at minimum tRFC. Notes 3-6 apply to entire table.

[Table 60] IDD5B, IDD5B, IDDQ5B, IPP5B, IDD5F, IDDQ5F, IPP5F

Sub-Loop	Command	CS	C/A [13:0]	CA8	CID[2:0]	Special Instructions
0	REFab	L	-	H	0x0	All “valid” inputs = VDDQ
1	DES	H	Toggling[1]	-	-	Repeat sequence to satisfy tRFC(min), truncate if required
2	REFab	L	-	H	0x0	All “valid” inputs = VDDQ
3	DES	H	Toggling[1]	-	-	Repeat sequence to satisfy tRFC(min), truncate if required
...	Repeat sequence 0-3 for each 3DS logical rank, if applicable					CID[2:0]=0x1-0x7

NOTE:
1) Utilize DESELECTs between commands per the 4-cycle sequence defined in the IDD2N, IDD3N pattern
2) For IDD5B, use tRFC1(min). For IDD5F, use tRFC2(min)
3) DQ signals are VDDQ
4) All banks of all “non-target” logical ranks are Idd2N condition
5) Where C/A[13:0] column is not populated, refer to command truth table, CA8, and CID columns for the C/A state 6) Must set CA8=H on REFab commands to indicate 1X refresh rate on devices that support RIR

11.9 IDD5C, IDDQ5C and IPP5C Patterns

Executes Refresh (Same Bank) command at minimum tRFCsb. Notes 2-5 apply to entire table.

[Table 61] IDD5C, IDDQ5C, IPP5C

Sub-Loop	Command	CS	C/A [13:0]	CA8	BA[1:0]	CID[2:0]	Special Instructions
0	REFsb	L	-	H	0x0	0x0	
1	DES	H	Toggling[1]	-			Repeat sequence to satisfy tRFCsb(min), truncate if required
2	REFsb	L	-	H	0x1	0x0	
3	DES	H	Toggling[1]	-		-	Repeat sequence to satisfy tRFCsb(min), truncate if required
4	REFsb	L	-	H	0x2	0x0	

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Sub-Loop	Command	CS	C/A [13:0]	CA8	BA[1:0]	CID[2:0]	Special Instructions
5	DES	H	Toggling[1]	-		-	Repeat sequence to satisfy tRFCsb(min), truncate if required
6	REFsb	L	-	H	0x3	0x0	
7	DES	H	Toggling[1]	-			Repeat sequence to satisfy tRFCsb(min), truncate if required
...	Repeat sequence 0-7 for each 3DS logical rank, if applicable						CID[2:0]=0x1-0x7

NOTE:
1) Utilize DESELECTs between commands per the 4-cycle sequence defined in the IDD2N, IDD3N pattern 2) DQ signals are VDDQ
3) All banks of all “non-target” logical ranks are Idd2N condition
4) Where C/A[13:0] column is not populated, refer to command truth table, CA8, and CID columns for the C/A state
5) All banks of all “non-target” logical ranks are Idd2N condition

11.10 IDD6N, IDDQ6N, IPP6N, IDD6E, IDDQ6E, IPP6E, IDD6R, IDDQ6R, IPP6R Pattern

All notes apply to entire table.

[Table 62] IDD6N, IDDQ6N, IPP6N, IDD6E, IDDQ6E, IPP6E, IDD6R, IDDQ6R, IPP6R

Sub-Loop	Command	Clock	CS	C/A[13:0]	Special Instructions
0	SRE	Valid	L	0x3BF7	Clocks must be valid tCKLCS(min) time
1	DES	Valid	H	0x3FFF	Repeat sequence to satisfy tCPDED(min), truncate if required
2	All C/A=H	Valid	L	0x3FFF	
3	All C/A=H	CK_t = CK_c = H	L	0x3FFF	Repeat sequence indefinitely

NOTE:
1) Data is pulled to VDDQ
2) DQS_t and DQS_c are pulled to VDDQ
3) ODT disabled in Mode Registers

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11.11 IDD7, IDDQ7 and IPP7 Patterns

Executes ACTVATE, READ/A commands with tightest timing possible while exercising all Bank, Bank Group and CID addresses. Notes 2-6 apply to entire table.

[Table 63] IDD7, IDD7Q, IPP7

Sub-Loop	Sequence	Command	CS	C/A [13:0]	Row Address [17:0]	Column Addres s [10:0]	BA [1:0]	BG [2:0]	CID [2:0]	Data Burst (BL=16)	Special Instructions
0	0	ACT	L H	-	0x00000	-	0x0	0x0	0x0	-	
	1	DES	H	Toggling[1]							Repeat sequence to satisfy tRRD_S(min), tFAW(min), and tRCD(min). Truncate if required.
1	2	ACT	L H	-	0x03FFF	-	0x0	0x1	0x0	-	
	3	DES	H	Toggling[1]							Repeat sequence to satisfy tRRD_S(min), tFAW(min), and tRCD(min). Truncate if required.
2	4-5	Repeat sub-loop 0, use BG[2:0]=0x2 instead									
3	6-7	Repeat sub-loop 1, use BG[2:0]=0x3 instead									
4	8-9	Repeat sub-loop 0, use BG[2:0]=0x4 instead									skip for x16
5	10-11	Repeat sub-loop 1, use BG[2:0]=0x5 instead									skip for x16
6	12-13	Repeat sub-loop 0, use BG[2:0]=0x6 instead									skip for x16
7	14-15	Repeat sub-loop 1, use BG[2:0]=0x7 instead									skip for x16
8	16	RDA	L H	-	-	0x3F0	0x0	0x0	0x0	Pattern A	
	17	ACT	L H	-	0x00000	-	0x1	0x0	0x0	-	
	18	DES	H	Toggling[1]							Repeat sequence to satisfy tCCD_S(min), tFAW(min), and tRCD(min). Truncate if required.
9	19	RDA	L H	-	-	0x000	0x0	0x1	0x0	Pattern B	
	20	ACT	L H	-	0x03FFF	-	0x1	0x1	0x0	-	
	21	DES	H	Toggling[1]							Repeat sequence to satisfy tCCD_S(min), tFAW(min), and tRCD(min). Truncate if required.
10	22-24	Repeat sub-loop 8, use BG[2:0]=0x2 instead									
11	25-27	Repeat sub-loop 9, use BG[2:0]=0x3 instead									
12	28-30	Repeat sub-loop 8, use BG[2:0]=0x4 instead									skip for x16
13	31-33	Repeat sub-loop 9, use BG[2:0]=0x5 instead									skip for x16
14	34-36	Repeat sub-loop 8, use BG[2:0]=0x6 instead									skip for x16

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Sub-Loop	Sequence	Command	CS	C/A [13:0]	Row Address [17:0]	Column Addres s [10:0]	BA [1:0]	BG [2:0]	CID [2:0]	Data Burst (BL=16)	Special Instructions
15	37-39	Repeat sub-loop 9, use BG[2:0]=0x7 instead									skip for x16
16-23	40-64	epeat sub-loops 8-15, use BA[1:0]=0x1 for the RDA and BA[1:0]=0x2 for the CT									
24-31	65-89	epeat sub-loops 8-15, use BA[1:0]=0x2 for the RDA and BA[1:0]=0x3 for the CT									
32-39	90-114	epeat sub-loops 8-15, use BA[1:0]=0x3 for the RDA and BA[1:0]=0x0 for the CT									
...	...	Repeat sub-loops 0-18 for each 3DS logical rank, if applicable									CID[2:0]=0x1-0x7

NOTE:
1) Utilize DESELECTs between commands per the 4-cycle sequence defined in the IDD2N, IDD3N pattern
2) READs performed with Auto Precharge = H, Burst Chop = H
3) x8 or x16 may have different Bank or Bank Group Address
4) Data reflects burst length of 16
5) Refer to IDD4R measurement loop table for data pattern definition

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12.0 IDD SPEC TABLE

IDD values are for typical operating range of voltage and temperature unless otherwise noted.

Symbol	ZMS5WMC3C1J0B46SPG: 1Rx16 8GB Module	ZMS5WMC8C2J0B46SPG: 1Rx8 16GB Module	ZMS5WMC8C4J0B46SPG: 2Rx8 32GB Module	Unit
	DDR5-5600	DDR5-5600	DDR5-5600	
	46-45-45	46-45-45	46-45-45	
	IDD Max.	IDD Max.	IDD Max.	
	VDD 1.1V, VDDQ 1.1V, VPP 1.8V	VDD 1.1V, VDDQ 1.1V, VPP 1.8V	VDD 1.1V, VDDQ 1.1V, VPP 1.8V	
IDD0	TBD	TBD	TBD	mA
IDD0F	TBD	TBD	TBD	mA
IDD2N	TBD	TBD	TBD	mA
IDD2NT	TBD	TBD	TBD	mA
IDD2P	TBD	TBD	TBD	mA
IDD3N	TBD	TBD	TBD	mA
IDD3P	TBD	TBD	TBD	mA
IDD4R	TBD	TBD	TBD	mA
IDD4W	TBD	TBD	TBD	mA
IDD5B	TBD	TBD	TBD	mA
IDD5F	TBD	TBD	TBD	mA
IDD5C	TBD	TBD	TBD	mA
IDD6N	TBD	TBD	TBD	mA
IDD7	TBD	TBD	TBD	mA
IDD8	TBD	TBD	TBD	mA

NOTE :

1) DIMM IDD SPEC is based on the condition that de-actived rank (IDLE) is IDD2N. Please refer to Table.
2) IDD current measure method and detail patterns are described on DDR5 component datasheet.
3) Module IDD is based on PMIC 5V input current, each IDD parameter includes all IDD/IDDQ/IPP of DRAM and PMIC efficiency.

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[Table 64] DIMM Operating Status

IDD Status	Operating Rank	De-actived rank
IDD0	IDD0	IDD2N
IDD0F	IDD0F	IDD2N
IDD2N	IDD2N	IDD2N
IDD2NT	IDD2NT	IDD2N
IDD2P	IDD2P	IDD2P
IDD3N	IDD3N	IDD2N
IDD3P	IDD3P	IDD2P
IDD4R	IDD4R	IDD2N
IDD4W	IDD4W	IDD2N
IDD5B	IDD5B	IDD2N
IDD5F	IDD5F	IDD2N
IDD5C	IDD5C	IDD2N
IDD6N	IDD6N	IDD6N
IDD7	IDD7	IDD2N
IDD8	IDD8	IDD8

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13.0 INPUT/OUTPUT CAPACITANCE

[Table 65] Silicon Pad I/O Capacitance

Symbol	Parameter	DDR5-4400 to 4800		DDR5-5200 to 5600		Unit	NOTE
		min	max	min	max		
CIO	Input/output capacitance (DQ, DM_n, DQS_t, DQS_c, TDQS_t, TDQS_c)	0.35	0.9	0.35	0.85	pF	1,2
CDIO	Input/output capacitance delta (DQ, DM_c)	-0.1	0.1	-0.1	0.1	pF	1,2,8
CDDQS	Input/output capacitance delta (DQS_t and DQS_c)		0.04		0.04	pF	1,2,4
CCK	Input capacitance (CK_t and CK_c)	0.2	0.6	0.2	0.55	pF	1,2
CDCK	Input capacitance delta (CK_t and CK_c)		0.05		0.05	pF	1,2,3
CI	Input capacitance (CS_n & CA[13:0] pins only)	0.2	0.6	0.2	(CI Option1) 0.55 (CI Option2) 0.5	pF	1,2,5,1 2
CDI_ CS_n	Input capacitance delta (CS_n pin only)	-0.1	0.1	-0.1	0.1	pF	1,2,6
CDI_ CA	Input capacitance delta (CA[13:0] pins only)	-0.1	0.1	-0.1	0.1	pF	1,2,7
CALERT	Input/output capacitance of ALERT	0.3	1.5	0.3	1.5	pF	1,2
CLoopback	Input/output capacitance of Loopback (LBDQ, LBDQS)	0.3	1.0	0.3	1.0	pF	1,2
CTEN	Input capacitance of TEN	0.2	2.3	0.2	2.3	pF	1,2,9
CZQ	Input capacitance of ZQ	-	5	-	5	pF	1,2,11
CSTRAP	Input capacitance of MIR, CAI, CA_ODT pins	-	10	-	10	pF	1,2,10

NOTE :

1) This parameter is not subject to production test. This parameter is measured by using vendor specific measurement methodology.
2) This parameter applies to monolithic devices only; stacked/dual-die devices are not covered here.
3) Absolute value CIO(CK_t)-CIO(CK_c).
4) Absolute value of CIO(DQS_t)-CIO(DQS_c).
5) CI applies to CS_n and CA[13:0].
6) CDI_CS_n = CI(CS_n)-0.5*(CI(CK_t)+CI(CK_c)). 7) CDI_CA = CI(CA[13:0])-0.5*(CI(CK_t)+CI(CK_c)).
8) CDIO = CIO(DQ,DM)-Avg(CIO(DQ,DM)).
9) TEN pin may be DRAM internally pulled low through a weak pull-down resistor to VSS. In this case CTEN might not be valid and system shall verify TEN signal with Vendor specific information.
10) MIR, CAI, and CA_ODT are strap pins used to configure module or point to point use cases depending on power, signal integrity, and termination requirements. No active AC signaling requirements defined for these pins.
11) Maximum external load capacitance on ZQ pin: 25pF. The ZQ functionality / accuracy with the max capacitive load is characterized.
12) CI Options are incorporated VcIVW in table 9 in Section 8.2.

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14.0 tREFI and tRFC Parameters

The maximum average refresh interval (tREFI) requirement for the DDR5 SDRAM depends on the refresh mode setting (Normal or FGR), and the device's case temperature (Tcase). When the refresh mode is set to Normal Refresh mode, REFab commands are issued (tRFC1), and Tcase<=85°C, the maximum average refresh interval (tREFI1) is tREFI. When the refresh mode is set to FGR mode, REFab commands are issued (tRFC2) and Tcase<=85°C, the maximum average refresh interval (tREFI2) is tREFI/2. This same tREFI/2 interval value is also appropriate if the refresh mode is set to Normal Refresh mode and REFab commands are issued (tRFC1) but 85°C<Tcase<=95°C. Finally, if the refresh mode is set to FGR mode, REFab commands are issued (tRFC2), and 85°C<Tcase<=95°C, the maximum average refresh interval (tREFI2) is tREFI/4.

The DDR5 SDRAM includes an optional method for the host to indicate when Refresh commands are being issued at the 2x (tREFI2) refresh interval rate. The 2x Refresh Interval Rate indicator (MR4:OP[3]) alerts the DRAM if the host supports the refresh interval rate indication as part of the REF command using CA8. If enabled (MR4:OP[3]=1), the host will issue 1x REF commands with CA8=H (Tcase<=85°C), and the host will issue 2x REF commands with CA8=L (Tcase any allowable temperature). MR4:OP[3] is a Status Read/Write "SR/W" MR bit which shows DDR5 SDRAM support of this optional feature.
Reading MR4:OP[3] will return a "1" if the 2x Refresh Interval Rate indicator is supported. A "0" will be returned if not supported.
tREFI is based on the 8,192 refresh commands that need to be issued within the baseline tREF=32ms refresh period on the DDR5 SDRAM.

[Table 66] tREFI parameters for REFab and REFsb Commands

Command	Refresh Mode	Symbol & Range		Expression	Value	Unit	Notes
REFab	Normal	tREFI1	0°C <= TCASE <= 85°C	tREFI	3.9	us	
			85°C < TCASE <= 95°C	tREFI/2	1.95	us	
REFab	Fine Granularity	tREFI2	0°C <= TCASE <= 85°C	tREFI/2	1.95	us	
			85°C < TCASE <= 95°C	tREFI/4	0.975	us	
REFsb	Fine Granularity	tREFIsb	0°C <= TCASE <= 85°C	tREFI/(2*n)	1.95/n	us	1
			85°C < TCASE <= 95°C	tREFI/(4*n)	0.975/n	us	1

NOTE :
1) *n* is the number of banks in a bank group (e.g. 8G: n=2; 16G: n=4).

[Table 67] tRFC parameters by device density

Refresh Mode	Symbol	16Gb	Unit	Notes
Normal Refresh (REFab)	tRFC1(min)	295	ns	
Fine Granularity Refresh (REFab)	tRFC2(min)	160	ns	
Same Bank Refresh (REFsb)	tRFCsb(min)	130	ns	

[Table 68] Same Bank Refresh parameters

Refresh Mode	Symbol	16Gb	Unit	Notes
Same Bank Refresh to ACT delay	tREFSBRD_slr(min)	30	ns	

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15.0 TIMING PARAMETERS BY SPEED GRADE

15.1 Timing Parameters by Speed Bin

Speed		DDR5-4400		DDR5-4800		DDR5-5200		DDR5-5600		Units	Notes
Parameter	**Symbol**	**MIN**	**MAX**	**MIN**	**MAX**	**MIN**	**MAX**	**MIN**	**MAX**		
Clock Timing											
Average Clock Period	tCK(avg)	0.454	-	0.416	-	0.384		0.357	-	ns	1
Command and Address Timing											
Read to Read command delay for same bank group	tCCD_L	max(8nCK, 5ns)	-	max(8nCK, 5ns)	-	max(8nCK, 5ns)		max(8nCK, 5ns)	-	nCK,ns	
Write to Write command delay for same bank group	tCCD_L_WR	max(32nCK, 20ns)	-	max(32nCK, 20ns)	-	max(32nCK, 20ns)		max(32nCK, 20ns)	-	nCK,ns	
Write to Write command delay for same bank group, second write not RMW	tCCD_L_WR2	Max(16nCK, 10ns)	-	Max(16nCK, 10ns)	-	Max(16nCK, 10ns)		Max(16nCK, 10ns)	-	nCK,ns	
Read to Write command delay for same bank group	tCCD_L_RTW	CL - CWL + RBL/2 + 2tCK - (Read DQS offset) + (tRPST - 0.5tCK) + tWPRE								nCK,ns	3,5,6
Write to Read command delay for same bank group	tCCD_L_ WTR	CWL + WBL/2 + Max(16nCK,10ns)								nCK,ns	4,6
Read to Read command delay for different bank group	tCCD_S	8	-	8	-	8		8	-	nCK	
Write to Write command delay for different bank group	tCCD_S_WR	8	-	8	-	8		8	-	nCK	
Read to Write command delay for different bank group	tCCD_S_RTW	CL - CWL + RBL/2 + 2tCK - (Read DQS offset) + (tRPST - 0.5tCK) + tWPRE								nCK,ns	3,5,6
Write to Read command delay for different bank group	tCCD_S_ WTR	CWL + WBL/2 + Max(4nCK,2.5ns)								nCK,ns	4,6
Write to Read with Auto Precharge command delay for same bank	tCCD_WTRA	CWL + WBL/2 + tWR - tRTP								nCK,ns	2,4,6
Activate to Activate command delay to same bank group for 1KB page size	tRRD_L(1K)	Max(8nCK, 5ns)	-	max(8nCK, 5ns)	-	max(8nCK, 5ns)		max(8nCK, 5ns)	-	nCK,ns	
Activate to Activate command delay to same bank group for 2KB page size	tRRD_L(2K)	Max(8nCK, 5ns)	-	max(8nCK, 5ns)	-	max(8nCK, 5ns)		max(8nCK, 5ns)	-	nCK,ns	
Activate to Activate command delay to differ- ent bank group for 1KB page size	tRRD_S(1K)	8	-	8	-	8		8	-	nCK	
Activate to Activate command delay to differ- ent bank group for 2KB page size	tRRD_S(2K)	8	-	8	-	8		8	-	nCK	
Four activate window for 1KB page size	tFAW (1K)	Max(32nCK, 16.000ns)	-	Max(32nCK, 14.545ns)	-	Max(32nCK, 14.545ns)		Max(32nCK, 12.307ns)	-	nCK, ns	
Four activate window for 2KB page size	tFAW (2K)	Max(40nCK, 20.000ns)	-	Max(40nCK, 18.181ns)	-	Max(40nCK, 18.181ns)		Max(40nCK, 15.384ns)	-	nCK, ns	
Read to Precharge command delay	tRTP	Max(12nCK, 7.5ns)	-	Max(12nCK, 7.5ns)	-	Max(12nCK, 7.5ns)		Max(12nCK, 7.5ns)	-	nCK,ns	
Precharge to Precharge command delay	tPPD	2	-	2	-	2		2	-	nCK	7
Write recovery time	tWR	30	-	30	-	30		30	-	ns	

NOTE:

1) tCK(avg)min listed for reference only, refer to the Speed Bins and Operations section which lists all valid tCK(avg) values.
2) tCCD_WTRA(min) shall always be greater than or equal to CWL + WBL/2 + tWR(min) - tRTP(min), and when using the appropri- ate rounding algorithms, nCCD_WTRA(min) shall always be greater than or equal to CWL + WBL/2 + nWR(min) - nRTP(min).
3) RBL: Read burst length associated with Read command.
RBL = 32 (36 w/ RCRC on) for fixed BL32 and BL32 in BL32 OTF mode RBL = 16 (18 w/ RCRC on) for fixed BL16 and BL16 in BL32 OTF mode RBL = 16 (18 w/ RCRC on) for BL16 in BC8 OTF mode and BC8 in BC8 OTF mode.
4) WBL: Write burst length associated with Write command

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WBL = 32 (36 w/ WCRC on) for fixed BL32 and BL32 in BL32 OTF mode.
WBL = 16 (18 w/ WCRC on) for BL16 in BC8 OTF mode and BC8 in BC8 OTF mode.
5) The following is considered for tRTW equation.
1tCK needs to be added due to tDQS2CK.
Read DQS offset timing can pull in the tRTW timing 1tCK needs to be added when 1.5tCK
postamble. 6) CWL=CL-2
7) This parameter only specifies minimum values (there is no maximum value). The maximum value cells have been merged in the table to improve legibility.

15.2 DDR5 Function Matrix

DDR5 SDRAM has several features supported by ORG and also by Speed. The following Table is the summary of the features.

[Table 69] Function Matrix (By ORG. V:Supported, Blank:Not supported)

Functions	x8	x16	NOTE
Write Leveling	V	V	
Temperature controlled Refresh	V	V	
Fine Granularity Refresh	V	V	
Same Bank Refresh	V	V	
Refresh for Management			
Data Mask	V	V	
Command Address Inversion	V	V	
TDQS	V	V	
ZQ calibration	V	V	
DQ Vref Training	V	V	
Per DRAM Addressability	V	V	
Mode Register Readout	V	V	
WRITE CRC	V	V	
READ CRC	V	V	
Programmable Preamble/Postamble	V	V	
Maximum Power Saving Mode	V	V	
Connectivity Test Mode	V	V	
Bit Error Rate Test	V	V	
Package Output Driver Test Mode	V	V	
3DS			
CA Training Mode	V	V	
CS Training Mode	V	V	
DQS interval Oscillator	V	V	
ECC Transparency and Error Scrub	V	V	
Lookback	V	V	
Duty Cycle Adjuster	V	V	

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16.0 DDR5 MODULE RANK AND CHANNEL TIMINGS

16.1 Module Rank and Channel Limitations for DDR5 DIMMs

To achieve efficient module power supply design for JEDEC-standard DDR5 DIMMs, minimum timings as well as limitations in the number of DRAMs are provided for Refresh, and Write operations occurring on a single module. As well, since these modules are organized as two independent 36-bit or 40-bit channels (32 bits for non-ECC DIMMs), additional restrictions apply in order to limit localized power delivery noise on the module. To provide best performance, the different channels may initiate commands on the same cycle provided the rank to rank timings are met, the maximum number of DRAMs in a given activity is not exceeded, and the applicable component timings shown elsewhere in this specification are met. The timing and operational relationships for DDR5 DIMMs are shown in Table 68 below.

[Table 70] DDR5 Module Rank and Channel Timings for DDR5 DIMMs

DIMM Configuration	Maximum number of DRAM die in simultaneous or overlapping activity			
	Refresh (All-Bank Refresh)		Write, Write-Pattern	
	Die per Physical Rank	Die per DIMM	Die per Channel	Die per DIMM
SR x16	No restriction			
DR x16	No restriction		2	4
SR x8	No restriction			
DR x8	No restriction		5	10
SR x4	No restriction			
DR x4	No restriction		10	20
Notes	1, 2, 3, 4, 7, 8, 9		1, 5, 6, 7, 9	

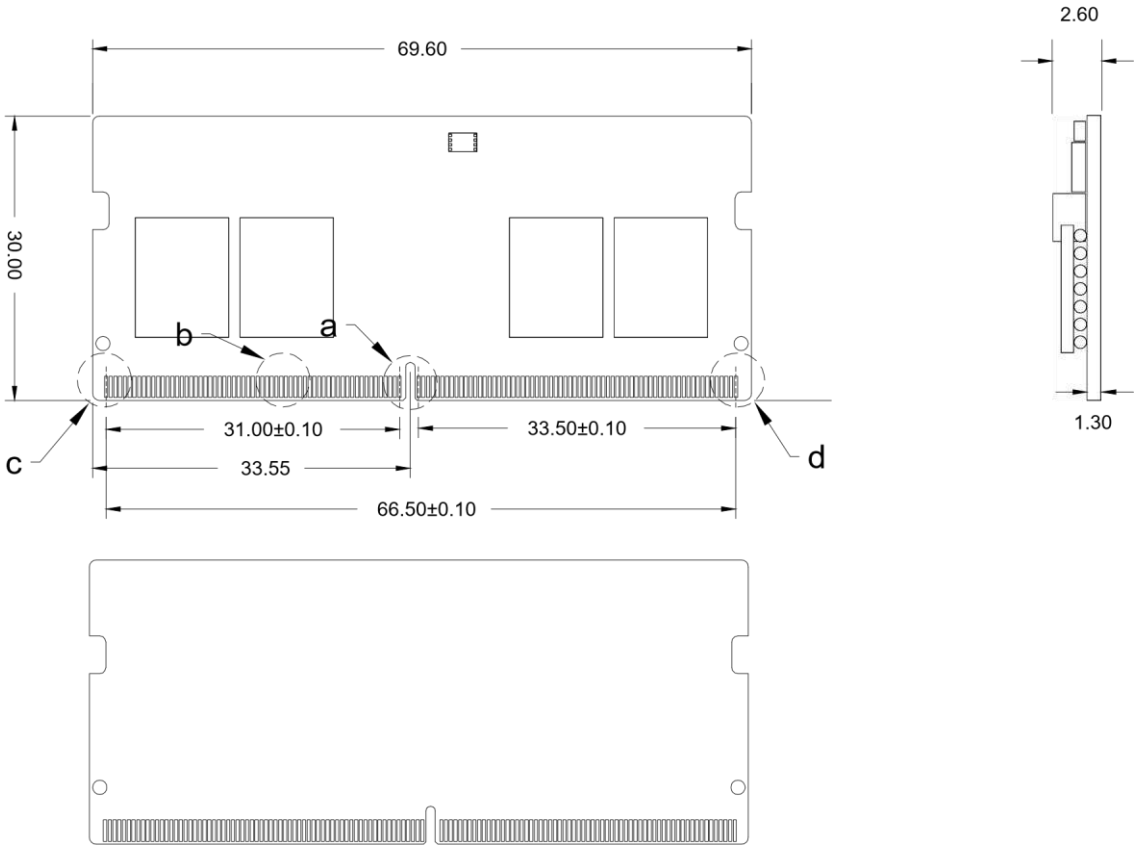
NOTE:
1) Any combination of commands with up to the maximum of die per channel and per DIMM, per condition is allowed 2) Refresh commands to different channels do not require stagger
3) tRFC_dlr must be met for refresh commands to different logical ranks within a package rank on the same channel
4) Any DRAM is considered to be in Refresh mode until tRFC time has been met
5) tCCD parameters must be met for Write and Write-Pattern commands to different logical ranks or physical ranks within the same channel; no overlapping write data bus activity is allowed on two physical or logical ranks within the same channel
6) Write and Write-Pattern commands to different channels do not require stagger
7) Each rank consists of one group of DRAMs making up a 36 or 40 bit channel (32 bits for non-ECC DIMMs)
8) These restrictions only apply to explicit all-banks refresh commands (REFab) and not to self-refresh entry or exit
9) Restrictions apply to DIMMs built with JEDEC PMICXXXX, but may not apply to DIMMs built with higher current capacity PMICs

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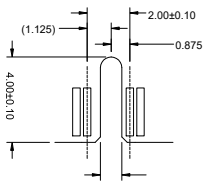
17.0 PHYSICAL DIMENSIONS

17.1 1Gx16 based x64 Module (1 Rank) - ZMS5WMC3C1J0B46SPG

Units : mm

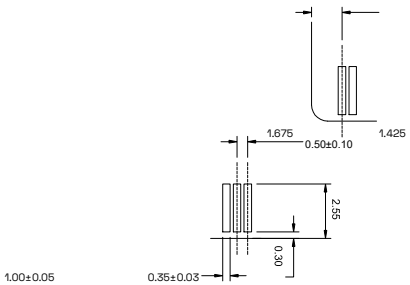


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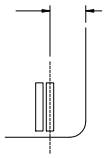


DETAIL b

DETAIL c



DETAIL d

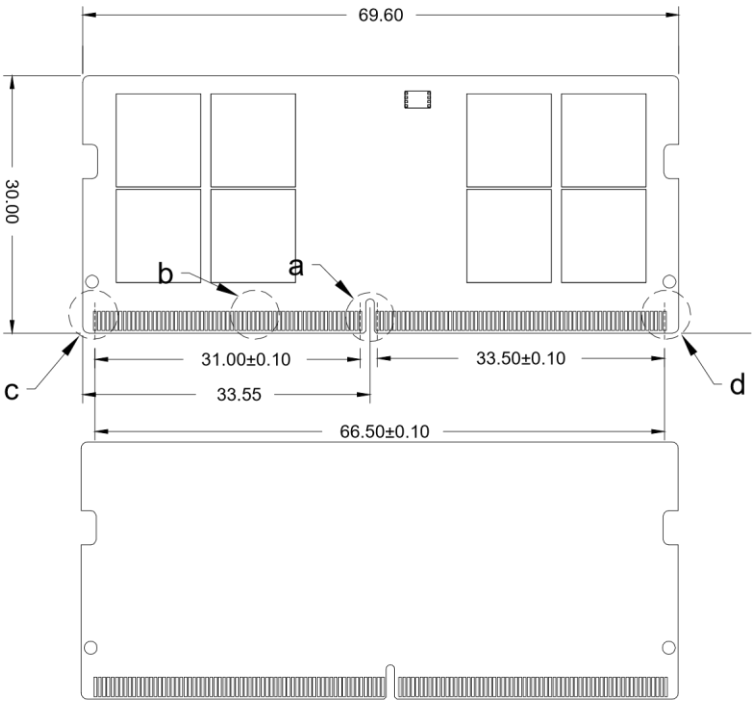


NOTE: Tolerances on all dimensions ±0.15 unless otherwise specified

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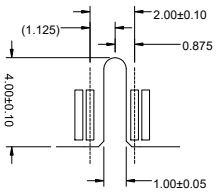
17.2 2Gx8 based x64 Module (1 Rank) - ZMS5WMC8C2J0B46SPG

Units : mm

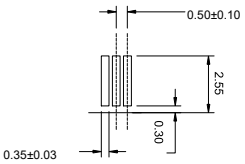




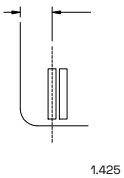
DETAIL a



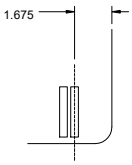
DETAIL b



DETAIL c



DETAIL d

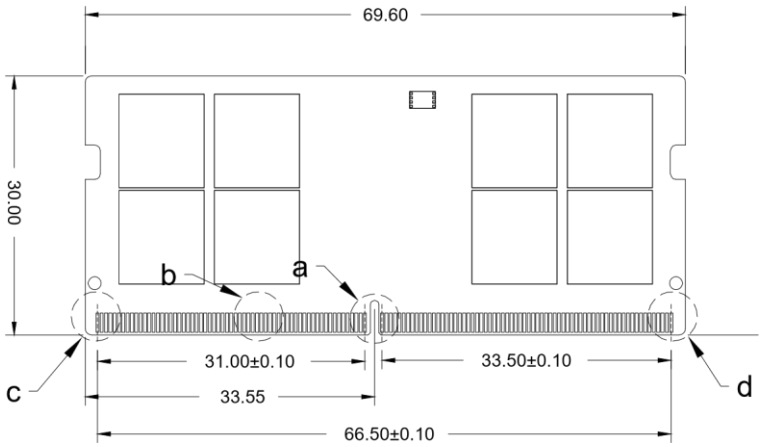


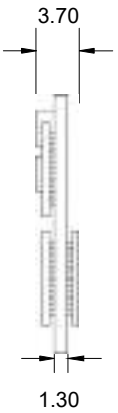
NOTE: Tolerances on all dimensions ±0.15 unless otherwise specified

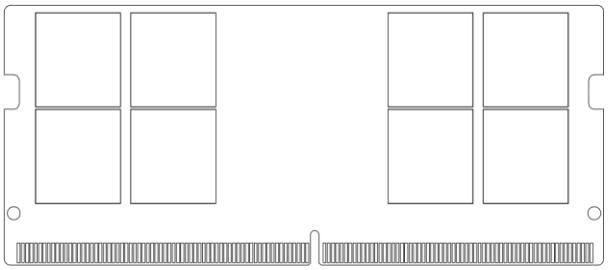
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Identificação interna do documento: I2SE6K90B9-TDFBBQ1

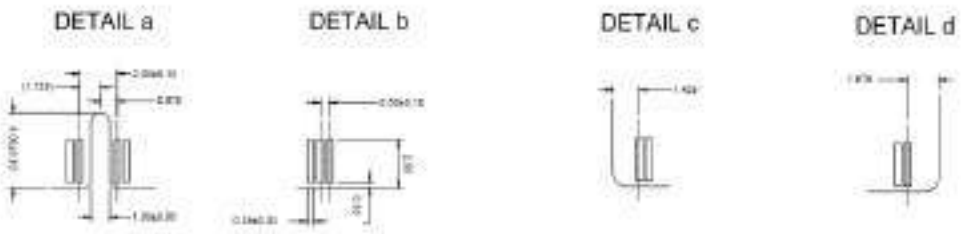
17.3 2Gx8 based x64 Module (2 Ranks) - ZMS5WMC8C4J0B46SPG

Units : mm









NOTE: Tolerances on all dimensions ±0.15 unless otherwise specified

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Nome do arquivo:
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Data de vinculação à solicitação: 15/01/2025 11:34
Aplicativo: 53250

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Intel® Wi-Fi 6E AX211
Gig+

Intel® Wi-Fi 6E AX211
Gig+

Adicionar para comparar

Conheça os processadores Intel mais recentes e experimente o desempenho aprimorado

Essenciais

Coleção de produtos	Intel® Wi-Fi série 6E (Gig+)
Codinome	Produtos com denominação anterior Garfield Peak
Status	Launched
Data de introdução	Q3'21
Peso (em gramas)	2.83
Faixa de temperatura operacional	0 °C to 50 °C
Temperatura máxima de operação	50 °C
Temperatura mínima de operação	0 °C
Sistemas operacionais suportados	Windows 11, 64-bit*, Windows 10, 64-bit*, Linux*, Chrome OS*
Antena	2x2

Informações complementares

Descrição resumida do produto	Veja agora

Especificações de rede

Streams TX/RX	2x2
Bandas	2.4, 5, 6 GHz (160MHz)
Velocidade máxima	2.4 Gbps
Wi-Fi CERTIFICADO*	Wi-Fi 6E (802.11ax)
Conformidade	FIPS, FISMA
Bluetooth integrado	Sim
Versão do Bluetooth	5.3

Especificações de encapsulamento

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Fator de forma da placa	M.2 2230, M.2 1216
Tamanho do pacote	22mm x 30mm x 2.4mm, 12mm x 16mm x 1.65mm
Tipo de interface de sistema	M.2: CNVio2

Tecnologias avançadas

MU-MIMO	Sim
Acesso múltiplo por divisão de frequência ortogonal (OFDMA — Orthogonal Frequency-Division Multiple Access)	Sim
Compatível com a Tecnologia Intel® vPro™	Sim

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‡ Este recurso pode não estar disponível em todos os sistemas de computação. Verifique com o fornecedor do sistema para determinar se seu sistema oferece este recurso ou consulte as especificações de seu sistema (motherboard, processador, chipset, alimentação, HDD, controle gráfico, memória, BIOS, drivers, monitor de máquina virtual [VMM], software de plataforma e/ou sistema operacional) para saber sobre a compatibilidade do recurso. A funcionalidade, o desempenho e outros benefícios deste recurso podem variar, dependendo das configurações do sistema.

SKUs "anunciados" ainda não estão disponíveis. Favor consultar a data de lançamento para a disponibilidade no mercado.

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POSITIVO ADAPTADOR CA PI-ADAP090-A(02)



Imagem meramente ilustrativa

MINI PC / NOTEBOOK / 90W

Modelo	PI-ADAP090-A(02)
Aplicação	Mini PC / Mini Pro / Notebook
Potência	90W
Tensão de entrada	Bivolt, 100-240V (+/- 10%), seleção automática
Frequência de entrada	50-60Hz (+/- 10%)
Tensão nominal de saída	19V
Corrente de saída	4,74A
PFC Ativo	Sim
Cabo de alimentação	3 pinos, NBR 14136
Tamanho do pino	DC-in
Cor	Preto
Dimensões (CxLxA)	127 x 50,4 x 30,4 mm

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POSITIVO MOUSE SM-6620

Versátil com resposta rápida e precisa, funciona sobre qualquer superfície



Ótico (LED) / 1.000 dpi / Ambidestro

Modelo	SM-6620
Tipo	Ótico (LED)
Interface	USB 2.0 Tipo A
Botões	3 botões incluindo botão de rolagem (wheel) Entrada P2 3.5 mm para acionadores externos (opcional)
Resolução	1.000 dpi
Força Operacional	Botões (esquerda/direita): 75+25 gf Botão whell: 180+50 gf
Configuração	Ambidestro com pegada Palm
Recursos	Plug and Play
Comprimento do cabo	1,8m
Dimensões	Largura de 65mm Comprimento de 117mm Altura de 36mm
Peso	90g
Cor	Preto
Compatibilidade	Windows XP, Vista, 7, 8/8.1, 10, 11 e Linux
Segurança	FCC, CE
Norma	Compatível com normativa RoHS
Fabricante	Positivo Tecnologia S/A

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POSITIVO MALETA TSS898

Maleta/Pasta Slim para Notebooks de até 15,6”



Produzida com um mix de materiais resistentes mantendo a leveza e a praticidade

Descrição	Maleta/Pasta Slim para notebook, em poliester, com alça de ombro removível
Peso	0,450 kg
Medidas (LxAxP)	5,3 x 33 x 40 cm (aproximadamente)
Características	Compartimento acolchoado com zíper duplo e divisor de documentos Bolso frontal com zíper que armazena telefone, carregador e outros acessórios Alça de ombro ajustável e removível Alça traseira para acoplar malas de mão (Alça Carona) Alça de mão Design leve e slim Compatível com notebooks de até 15,6“ Material impermeável
Cor	Preto
Fabricante	Positivo Tecnologia S/A

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FOLHA DE DADOS

Absolute Control

Mantenha o controle de todos os seus dispositivos endpoint sempre, mesmo que sejam fora de sua rede corporativa.

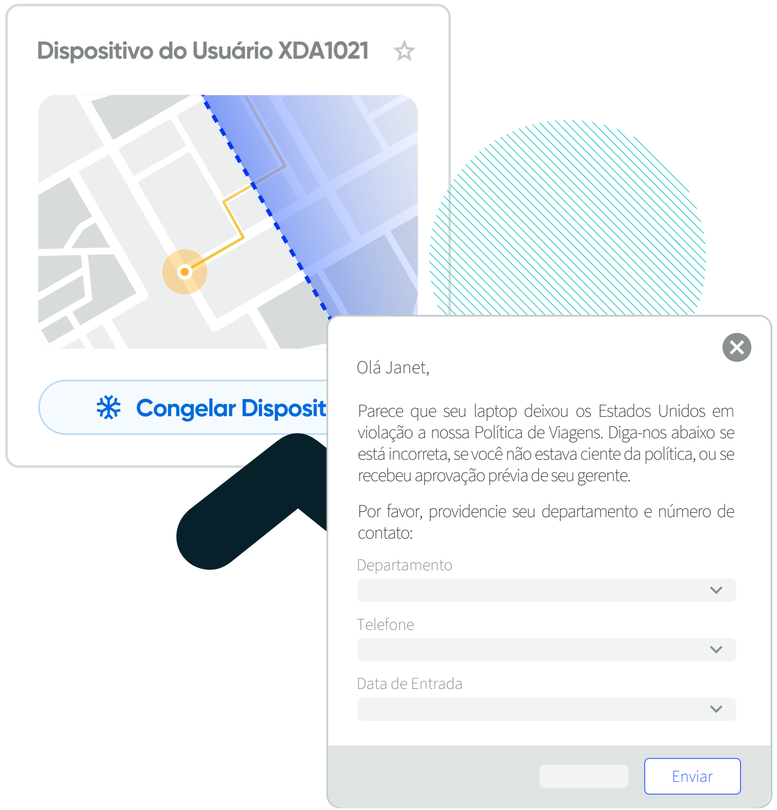


A visibilidade dos dispositivos endpoint é importante. Entretanto, é ainda mais crucial salvaguardar seus dispositivos, aplicações e dados com base no que você aprendeu etando a verdade através de seus dispositivos endpoint. O controle de dispositivos endpoint é, portanto, o próximo passo lógico em sua estratégia de gerenciamento e segurança de dispositivos. Isto é especialmente verdade porque a maioria dos ataques começa nos dispositivos endpoint usados por indivíduos, não no firewall ou servidores. Os atacantes normalmente ganham controle desses pontos de entrada na rede através de técnicas como phishing; a partir daí, eles podem se mover lateralmente para obter acesso a seus servidores. De lá, eles podem se mover lateralmente para obter acesso a seus servidores.

É, portanto, crucial manter sempre o controle sobre todos os dispositivos endpoint para que os riscos possam ser remediados antes que se tornem incidentes.

absolute.com

ABSOLUTE®



Aproveite o Poder da Plataforma Absolute

É aí que a Absolute Control™ ajuda, pois combina todas as capacidades do **Absolute Visibility™** (por exemplo, relatórios sobre inventário de hardware/software, uso de dispositivos e aplicativos da Web, postura de segurança de dispositivos, status de aplicativos críticos, descoberta de dados de dispositivos endpoint e geolocalização) com funções críticas de controle, tais como limpeza remota de arquivos e apagamento de dados, congelamento de dispositivos sob demanda quando em risco, envio de mensagens ao usuário final, bem como cercos de proteção e alertas.

Você pode controlar todo seu conjunto de dispositivos a partir do console Absolute® baseado em nuvem ou através do aplicativo Absolute Mobile, que são parte da **Plataforma Absolute**. Aproveitando a conexão sempre ativa proporcionada pela tecnologia Absolute Persistence®, integrada em mais de 600 milhões de dispositivos dos principais fabricantes de sistemas, você pode manter o controle de todos os seus dispositivos endpoint. Toda vez que um usuário tenta alterá-lo ou removê-lo, a Absolute se reinstala, garantindo uma conexão segura e sempre ativa entre a Plataforma Absoluta e o dispositivo endpoint.

Su Salva-vidas para proteger os dispositivos em risco

A Absolute Control fornece a salva-vidas para proteger dispositivos e dados em risco, mesmo que estejam fora de sua rede corporativa.

- Defina os cercos de proteção. Defina cercos de proteção e temporizadores para acionar automaticamente as ações sempre que um dispositivo sair de uma zona "segura" ou ficar offline, bem como para detectar movimento não autorizado do dispositivo.
- Excluir seletivamente os arquivos do dispositivo. Limpar remotamente arquivos específicos de dispositivos em risco, executar ações de fim de vida útil e agilizar a desativação de dispositivos remotos.
- Limpeza de dados do dispositivo. Limpar remotamente dados de dispositivos endpoint de risco e executar remediação de mídia no fim da vida útil apagando remotamente o disco rígido de um dispositivo e gerando certificados de conformidade.
- Congelamento remoto de dispositivos em risco. Congelar dispositivos em risco sob demanda ou conforme um cronograma e evitar a propagação de uma infecção por ransomware ou preservar provas para fins de litígio.
- Enviar mensagens seguras aos usuários. Informar os usuários de forma oportuna e coordenada, exibindo mensagens importantes na tela de seus dispositivos e solicitar feedback.
- Proteção Remota de Firmware*. Ativar o controle de firmware de supervisão à distância e em escala, e minimizar o risco de ataques de firmware.

*Somente dispositivos Lenovo

Procurando Mais Ferramentas?

Enquanto a Absolute Control lhe oferece uma salva-vidas para proteger dispositivos e dados em risco, o portfólio de produtos Absolute Secure Endpoint lhe oferece opções adicionais de nível de serviço que podem atender a outras necessidades comerciais. Consulte Absolute Visibility e Absolute ResilienceTM para determinar qual nível de serviço é o mais adequado para você.

Absolute Visibility

Fonte de verdade para dispositivo e aplicação de dispositivos e aplicações.

O que está incluso?

- ✓ Status do dispositivo
- ✓ Postura de segurança
- ✓ Status da aplicação
- ✓ Utilização do dispositivo
- ✓ Geolocalização
- ✓ Uso de Aplicativos da Web
- ✓ Endpoint Data Discovery

Absolute Control

Salva-vidas para proteger os dispositivos e dados em risco.

Todas as características do Visibility, mais:

- ✓ Cercos de proteção
- ✓ Congelamento do dispositivo
- ✓ Limpeza de arquivos
- ✓ Limpeza do dispositivo
- ✓ Mensagens do usuário final
- ✓ Proteção Remota de Firmware

COMPLEMENTOS DE ABSOLUTE CONTROL

- ✓ Absolute Insights for Endpoints
  Capacite seus administradores com informações sobre dispositivos e tendências de segurança para toda a sua frota.
- ✓ Serviço de Recuperação de Dispositivos Perdidos da Absolute
  Uma equipe de especialistas em recuperação absoluta rastreia, localiza e protege os dispositivos e até mesmo entra em contato com os usuários para recuperá-los.
- ✓ Absolute Ransomware Response para Control
  Aumente suas capacidades de controle para obter uma vantagem na preparação e recuperação do ransomware em todo o seu conjunto de dispositivos.

PACOTES DE PRODUTOS RELACIONADOS

- ✓ Absolute Control para Chromebooks
  Recursos projetados especificamente para usuários de Chromebooks.

MAIS POTÊNCIA

Absolute Resilience

Oferece uma auto-reparação de aplicação e uma resposta confiante ao risco.

Todas as características do Control, mais:

- ✓ Aplicação Resilience
- ✓ Biblioteca de Scripts de Remediação
- ✓ Investigações e recuperação de dispositivos perdidos/roubados

Veja Recursos Relacionados

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/ABSOLUTE®

Com a confiança de mais de 18.000 clientes, a Absolute Software é o único fornecedor de soluções de segurança inteligentes e auto-reparáveis. Integrado em mais de 600 milhões de dispositivos, a Absolute é a única plataforma que oferece uma conexão digital sempre ativa que aplica de forma inteligente e dinâmica a visibilidade, controle e capacidade de auto-reparacão aos dispositivos endpoint, aplicações e conexões de rede, ajudando os clientes a fortalecer a resiliência cibernética diante da crescente ameaça de ransomware e ataques maliciosos.

Solicite uma Demonstração

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June 30, 2025

DECLARATION

Absolute Software Corporation, registered with the Tax ID under number 98-1186081, located at 980 Howe Street, Suite 1400, Vancouver, British Columbia V6Z 0C8, declares for all due purposes that the Control and Monitoring Software meets the following technical specifications:

- *Control: Remote locking and unlocking functions.*
- *Inventory: Detailed management of equipment hardware and software.*
- *Traceability: Integrated geolocation capabilities.*

The control and monitoring software has persistence functionality designed to allow the client to preserve the software and its functionalities, even after total data loss or hard drive formatting, using firmware residency technology.

The equipment control and monitoring interface is cloud-based, without the need for additional licenses beyond those assigned to each piece of equipment;

The dedicated software license will be made available upon payment to the authorized reseller by the CONTRACTING PARTY.

Signed by:
964F101EA6B24A3...

John Herrema
Chief Product Officer

980 Howe Street, #1400
Vancouver, BC V6Z 0C8
T: 1-604-730-9851 / 1-800-220-0733 F: 1-604-730-2621
absolute.com

POSITIVO DIAG 2.0 – FICHA TÉCNICA

DESCRIÇÃO: O **Positivo Diag 2.0** é uma ferramenta de diagnóstico abrangente integrada diretamente ao firmware UEFI (Unified Extensible Firmware Interface) dos dispositivos. Projetado para oferecer diagnósticos rápidos e confiáveis, sendo executado diretamente a partir da Flash ROM da BIOS, sem depender de sistemas operacionais, drives ou dispositivos de armazenamento externos.

FUNCIONALIDADES PRINCIPAIS: O software permite a análise completa do hardware, garantindo diagnósticos independentes do estado dos dispositivos de armazenamento do computador. Sua interface gráfica intuitiva possibilita a realização de testes básicos e avançados de forma acessível. Fornece informações detalhadas sobre a configuração do sistema, tais como: Fabricante e modelo do equipamento; Data e versão da BIOS (firmware) do equipamento; Marca, modelo e clock de funcionamento (em GHz) do processador, capacidade de memória RAM e sua velocidade; Modelo, capacidade, versão do firmware e número de série dos dispositivos de armazenamento do sistema (se houver); Nome, tipo e informações adicionais de dispositivos USB conectados; Informações de dispositivos PCI conectados.

REQUISITOS DO SISTEMA:

- Suporte a UEFI (Unified Extensible Firmware Interface).
- Processadores baseados na arquitetura x86 ou x64.
- Teclado e/ou mouse funcional.
- Tela compatível com saída gráfica padrão.

MÉTODOS DE INICIALIZAÇÃO:

- Pela tecla de atalho F11 durante o POST (momento de inicialização da máquina).
- Diretamente no Setup da BIOS, dentro da aba “Salvar & Sair”.

COMPONENTES DOS TESTES E RESUMO:

- **Informações do Sistema:** Verifica e exibe informações como: Nome, modelo, número de série, fabricante, versão e data da BIOS e especificações dos componentes de hardware.
- **Teste de Sistema:** Realiza um teste geral em todos os componentes. Dispensando apenas os testes que necessitam da interação com o usuário, são eles: Teclado, mouse e USB.
- **Processador (CPU):** Verifica a integridade e desempenho da CPU, incluindo autoteste interno (BIST), estresse dos núcleos, monitoramento de temperatura, testes de criptografia e cálculos matemáticos.
- **Memória RAM:** Avalia a estabilidade e integridade da memória RAM por meio de operações de estresse multicore, verificações de endereçamento e operações relacionadas a padrões de dados.
- **Dispositivos de Armazenamento:** Realiza verificações nos dispositivos de armazenamento conectados, incluindo teste de superfície não destrutivo e testes de S.M.A.R.T (SATA, NVMe e eMMC).
- **Dispositivos PCI:** Verifica os dispositivos PCI conectados ao sistema, validando informações e funcionalidade, detectando possíveis problemas de comunicação e compatibilidade.
- **Conectores USB:** Testa e exibe informações dos conectores USB disponíveis, verificando se os dispositivos foram reconhecidos corretamente (o procedimento requer a interação do usuário).
- **Capacidade de Exibição Gráfica (Vídeo):** Avalia a capacidade de exibição gráfica do sistema, identificando diferentes resoluções e qualidade visual. É solicitado ao usuário inspecionar a tela e relatar qualquer irregularidade visual.
- **Conexão de Rede (Ethernet):** Valida a conexão de rede cabeada do equipamento.
- **Dispositivos de Conectividade Sem Fio:** Verifica a presença e especificações dos dispositivos de conectividade sem fio no sistema (Placa Wi-Fi e dispositivos Bluetooth).
- **Teclado:** Verifica o funcionamento do teclado, solicitando ao usuário que pressione todas as teclas presentes no dispositivo.
- **Mouse:** Verifica o funcionamento dos botões e a capacidade de movimento do mouse solicitando a interação com o usuário.
- **Áudio:** Avalia a presença e funcionamento de controladores, codecs de áudio e drivers de saída de som, como alto-falantes internos ou externos. É solicitado ao usuário uma confirmação da percepção do sinal sonoro apresentado.
- **Bateria (exclusivo para notebooks):** Analisa as especificações e o estado atual da bateria.
- **Térmico:** verifica as temperaturas dos componentes principais do sistema, como a CPU.
- **Sistema de Refrigeração:** Avalia o desempenho das ventoinhas do sistema.
- **Fonte de Alimentação (exclusivo para desktops):** Verifica o funcionamento da fonte de alimentação, garantindo que ela esteja fornecendo energia de forma estável.
- **TPM:** Exibe as principais informações do dispositivo, verifica o status das hierarquias e realiza um autoteste.
- **Boot do SO:** Verifica o boot path do sistema operacional, avalia a integridade do bootloader e suas dependências.

VISÃO GERAL DO SOFTWARE:



ERROS COMUNS E SOLUÇÕES:

Consulte a **Tabela de Códigos de Erros** disponível no Manual do Usuário, a tabela possui códigos de erro do programa, acompanhados de suas respectivas descrições. Caso um erro ocorra, consulte o código correspondente para entender sua causa e possíveis ações corretivas.

Membership List

The UEFI Forum community of members is represented by industry-leading OEMs, IHVs, chip manufactures, BIOS and firmware vendors and operating system vendors.

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NVELO, Inc.

NXP B.V,

OpenMars Development LLC

Order N Development, LLC

Orion Technologies, LLC

OSBASE, LLC

Panasonic Connect Co., Ltd.

Parallels International GmbH

Pegatron Corporation

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Peppercon AG

PGP Corporation

PixelNext Inc.

PLX Technology, Inc.

Portlock

PQURE Technology AB

Proformatique

Quanta Computer Inc.

Radisys Corporation

Red Flag Software Co., Ltd.

Renesas Electronics Corporation

RIVAI Technologies (Shenzhen) Co., Ltd.

RPA RusBITech

rubbersoft.com

Ruijie Networks

Sage-Microelectronics

Samsung Electronics Co., Ltd.

Sandia National Laboratories

SanDisk Corporation

Sanmina Corporation d/b/a Viking Technology

Schweitzer Engineering Laboratories, Inc.

SDL Eletro Eletronica Ltda - EPP

Seagate Technology LLC

SecurStar GmbH

SEMP TOSHIBA INFORMATICA LTDA

Sensics, Inc.

ServerEngines Corp.

Shandong University

Shanghai Advanced Research Institute

Shanghai IP3 Technology Co., Ltd.

Silicon Image, Inc.

Silicon Integrated Systems Corp.

Sinces Tecnologia Coercio & Services - EXIX

SinoSun Technology, Ltd.

SoftIron, Inc.

softKVM LLC

Solarflare Communications Inc.

Spirent Communications

Sprezzatech

SSWW

ST-Ericsson SA

STEC, Inc.

Stonewood Electronics Ltd.

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Stream Labs

StreamView GmbH (Thomson)

Super Future Equities, Inc.

SYBERA GmbH

Symantec Corporation

System Fabric Works

System Garden Ltd.

System Industrie electronic GmbH

TCORP

Terascala, Inc.

Themis Computer, Inc.

ThinkIT Data Solutions

TimeLab Corporation

Tokyo Electron Device Ltd.

Top Victory Investments

Toshiba Samsung Storage Technology Korea Corporation

Trend Micro

Tsinghua Tongfang Co., Ltd.

Tuxera Inc.

TYA

Ubiquitous AI Corporation

ULINK Technology, Inc.

UNH InterOperability Laboratory

Unicompute Technology Co., Ltd

UniFabriX Ltd.

Uninter Informatica S/A

Unisys Corporation

University of California, Davis

UPEK, Inc.

US Technology Resources (M) SDN. BHD.

V&G Information System Co., Ltd.

VAIO Corporation

Validity Sensors

Venetex Corp

Vestel Dijital Yretim Sanayi A. S.

VIA Alliance Semiconductor Co., Ltd.

VIA Technologies, Inc.

VMware, Inc.

VNPT Technology

VT Miltope

Wacom Technology

Wave Systems Corp.

WinMagic Inc.

Winsiders Seminars & Solutions, Inc.

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WinSystems, Inc.

Wiwynn Corporation

Wuhan University

Wyse Technology

XGI Technology Inc.

Xi'an Saming Technology Co., Ltd.

Xi3 Corporation

Xitrix Computer Corporation

Xsense Connectivity Inc.

ZD Technology (Beijing) Co., Ltd. (Kunlun Technology (Beijing) Co., Ltd)

Zhejiang Dahua Technology Co., Ltd.

ZNYX Networks

Individual Adopters

Alex Kunovszky

Archer Pergande

Barry Gian James

Ben Lee Hughes

Benson Lin

Canh Kha

Cheng-Lung Chang

Connor Horman

Connor Wood

David Boyd

Dharmesh Tarapore

Don MacKellar

Ed Brundage

Elika S. Kohen

Ezri Buerger

Gail B. Keown

George Fulk

Gregory Havenga

Howard Peng

Ing-chao Lin

Jake Lehotsky

James Bottomley

Jason Christopher Stone

Jeong Kim

John A. Newton

John Blacker

John David Datuin

John M. Hare

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Jonathan J. Willemin

Joseph LeGarreta

Juan Pablo Black Romero

Justin Loo

Justin Sligh

Karl O. Van Leuven IV

Kushal Koolwal

Lee Fisher

Liqiang Ni

Lucien Pullen

Martin Treadwell

Marvin Häuser

Michael Johnston

Michael Neaves

Michael Zimmermann

MUHAMMAD AYMAN BIN MUHAMMAD IDZMI

Patrick J. Kennedy

Paulo Henrique L. Amorim

Pete Batard

Phooen Sonpooshi

Piryanshu Pareek

Priyanshu Pareek

Robert Jandacek

Robert Johnston

Rocky Wang

Roger Bertoldi

Roger Thompson

Seppe Sol

Shannon Lewis

Shawn M. Pedersen

VALETTE Teddy

Vincent du Lau

Wang Qiang

William J. Biessman

Xie Tianming (Persmule)

ZongQi Li

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Windows Compatible Products List

Welcome to the Windows Compatible Products List! Windows Hardware Compatibility means that a manufacturer has rigorously tested their hardware and met all of Microsoft's compatibility requirements. Use the search below to find Compatible products and download a Verification Report for any OS.

For Server products, we recommend you use the Windows Server Catalog as it is designed to give you more detailed and Server specific information.

Marketing/Product Name*	Company Name	D & U Status	Select Operating System
N8450	Search f	All	All Opera

Search

Product Name	D/U Status	Company	Certifications	Verification Report
Positivo Master N8450	Not Universal Not Declarative	Positivo Tecnologia SA	Certified for Microsoft Windows 11 Client family version 22H2, x64	Download Certification Report
Positivo Master N8450	Not Universal Not Declarative	Positivo Tecnologia SA	Certified for Microsoft Windows 11 Client family version 24H2, x64	Download Certification Report

Viewing page 1 of 1

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Surface Laptop Go 3
Microsoft Copilot
AI in Windows
Explore Microsoft products
Windows 11 apps

Microsoft Store support
Returns
Order tracking
Certified Refurbished
Microsoft Store Promise
Flexible Payments

Microsoft Teams for Education
Microsoft 365 Education
How to buy for your school
Educator training and development
Deals for students and parents
AI for education

Microsoft Power Platform
Microsoft Teams
Microsoft 365 Copilot
Small Business

Support for AI marketplace apps
Microsoft Tech Community
Azure Marketplace
AppSource
Visual Studio

Privacy at Microsoft
Investors
Diversity and inclusion
Accessibility
Sustainability

English (United States)
Your Privacy Choices
Consumer Health Privacy

Sitemap
Contact Microsoft
Privacy
Manage cookies
Terms of use
Trademarks
Safety & eco
Recycling
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Microsoft

Hardware certification report **Approved**

Private product ID:	**13907734486947735**
Shared product ID:	**401966739**
Submission ID:	**1152921505698355209**
Submission date:	**10/1/2024**
Completion date:	**10/1/2024**
Company:	**Positivo Tecnologia SA**
Product name:	**Positivo Master N8450**
Category:	**System**
Product type:	**Laptop**
Qualification level:	**Certified for Microsoft Windows 11 Client family version 24H2, x64**
Marketing name:	**Positivo Master N8450**

Microsoft Certified



← VOLTAR

Modelo Homologado

ID	Inserção	Distribuição / Kernel	Certificado QA	Especificações
181563	27/02/2025	Ubuntu 24.04 / Kernel: 6.11.0-17-generic	SIM	

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← VOLTAR

Detalhes do Hardware:

Tipo	Hardware
Chassis	Positivo Tecnologia S.A. Notebook
Processor	Intel Core Ultra 5 115U @ 4.2 GHz
Processor	Intel Core Ultra 5 125H @ 4.5 GHz
Processor	Intel Core Ultra 5 125U @ 4.3 GHz
Processor	Intel Core Ultra 5 135H @ 4.6 GHz

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Tipo	Hardware
Processor	Intel Core Ultra 5 135U@ 4.4 GHz
Processor	Intel Core Ultra 7 155H @ 4.8 GHz
Processor	Intel Core Ultra 7 155U @ 4.8 GHz
Processor	Intel Core Ultra 7 165H @ 5.0 GHz
Processor	Intel Core Ultra 7 165U @ 4.9 GHz
Base board	Positivo Tecnologia S.A. POS-SIPWOAA
Storage	Goldkey NSP095P3451-H06Q2J0 SSD M.2 / 512GB/ NVMe / Gen3
Storage	Goldkey NSP475P4456-H06D2J0 SSD M.2 / 256GB / NVMe / Gen4
Storage	Adata SM2P41C8-001TC5 SSD M.2 /1024GB / NVMe
Storage	Adata SM2P41C8-256GC5 SSD M.2 / 256GB / NVMe
Storage	Adata SM2P41C8-512GC5 SSD M.2 / 512GB / NVMe
Storage	Solid State Storage Technology Corp SSD 256GB NVMe M2 CL4-8D256
Storage	Solid State Storage Technology Corp SSD 512GB NVME M2 CL4-8D512
Storage	Solid State Storage Technology Corp SSD M.2 / 1TB / NVMe -CL4-8D1024
Video card	Intel Iris® Xe Graphics
Video card	Intel UHD Graphics Family
Network	Intel I219LM 10/100/1000 Mbps, Gigabyte Ethernet
Network	Intel i219LM 1G Base-TX Ethernet LAN for vPro
Network	Intel i219V 10/100/1000 Mbps, Gigabyte Ethernet
Network	Intel I225LM 10/100/1000 Mbps, Gigabyte Ethernet
Network	Intel i226LM 2.5G Base-TX Ethernet LAN for vPro

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Tipo	Hardware
Network	Intel WI-FI 6 AX201
Network	Intel Wi-Fi 6E AX211
Sound card	Realtek ALC233 HD Audio
Sound card	Realtek ALC269Q-VB6-CG High Definition

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Date of Issue

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Fornecedor (Solicitante):
Supplier (Applicant)
Positivo Tecnologia S.A.
Rua Ásia, S/N, Iguape, Ilhéus – BA – Brasil, CEP: 45658-464
CNPJ: 81.243.735/0009-03

Fabricante:
Manufacturer
Positivo Tecnologia S.A.
Rua Ásia, S/N, Iguape, Ilhéus – BA – Brasil, CEP: 45658-464
CNPJ: 81.243.735/0009-03

Produto:
Product
Computador Portátil – Notebook

Marca:
Brand
Positivo

Modelo:
Model
Positivo Master N6440; Positivo Master N8440; Positivo Master N6445; Positivo Master N6450 e Positivo Master N8450.

Família:
Family
Computador Portátil – Notebook

Descrição:
Description
Conforme Anexo A - Relação de Componentes Críticos.

Código de Barras:
Barcode
N/A

Marca concedida
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Normas/Portarias:
Standards/Ordinances

Norma/*Ordinance*	**Ano de Publicação**/ *Publication' Year*
Portaria Inmetro nº 304	06 de novembro de 2023
IEC 62368-1	2023
CISPR 22	2008
CISPR 24	2010
IEC 61000-3-2	2014
IEC 61000-3-3	2013
IEC 61000-4-2	2008
IEC 61000-4-3	2010
IEC 61000-4-4	2012
IEC 61000-4-5	2014
IEC 61000-4-6	2013
IEC 61000-4-8	2009
IEC 61000-4-11	2020

Modelo de Certificação: Modelo 05
Certification model

Data da Auditoria: **26/09/2024**
Date of the Audit

Laboratório de Ensaios: *Testing Laboratory*	**Relatório de Ensaios nº:** *Report N°*	**Data de Emissão:** *Date of Issue*
Instituto de Pesquisas Eldorado – Laboratório de Ensaios e Testes	LET-ENE-RE 2395-12328-01 – C-01.00	22/02/2023
	LET-ENE-RE 2395-13153-01 – C-01.00	27/07/2023
	LET-ENE-RE 2395-15701-01 – C-01.00	26/09/2024
	LET-EMC-RE 2395-16081-01 – C-01.00	19/01/2025
	LET-EMC-RE 2395-16081-02 – C-01.00	19/01/2025
	LET-EMC-RE 2395-16081-03 – C-01.00	19/01/2025
	LET-EMC-RE 2395-16081-04 – C-01.00	19/01/2025
TÜV Rheinland Taiwan Ltd.	CN23JUFM 001	27/09/2023
TÜV Rheinland (Shenzhen) Co., Ltd.	CN23OCB5 001	14/11/2023

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TÜV Rheinland (Guangdong) Ltd.	CN245LUG 001	06/11/2024
	CN24OCHI 001	08/11/2024
SGS do Brasil Ltda. – Laboratório E&E	BRES241200029101	07/01/2025
	BRES241200029201	07/01/2025
	BRES241200029301	07/01/2025
	BRES241200029401	07/01/2025
	BRSS241200146702	29/01/2025
	BRSS241200146801	28/01/2025
	BRSS241200146901	28/01/2025
	BRSS241200147002	29/01/2025
	BREI250600037601	27/06/2025
	BREI250600037701	27/06/2025
	BREI250600038701	27/06/2025
TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou	085-250183201-000	20/03/2025
TÜV Rheinland Taiwan Ltd.	CN22M67K 003	31/08/2023
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES250200119001	27/02/2025

Data de Revisão: ***Review date***	**Justificativa de Revisão:** ***Review reason***
09/05/2025	Inclusão do componente Fonte de Alimentação modelos Palermsh3 e HKA06519034-6K e relatórios de ensaio 085-250183201-000 e SZES250200119001.
30/06/2025	Inclusão do componente Fonte de Alimentação modelos PI-ADAP090-A(02), PI-ADAP090-L(01) e PI-ADAP090-F(03).

Nota: ***Note***
A validade deste Certificado está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações do OAC e previstas no RAC específico da Portaria n° 304 de 2023".
Lista de componentes críticos consta no Anexo A, páginas 4 a 7.
"Certificado de Conformidade válido somente acompanhado de todas as suas páginas".

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Alex Oliveira
Gerente Geral
"A Cgcre é signatária do Acordo de Reconhecimento Multilateral do IAF para Certificação de Produtos"

Anexo A – Relação de Componentes Críticos

Componente	Fabricante	Modelo
Fonte de Alimentação	FSP	CHARGER.20V 65W.3.25A. FSP065-A1BR3. USB 3.0 TYPE C. LEAD-FREE.FSP
	Liteon	RGER.20V 65W.3.25A.PA-1650-58AD. USB 3.0 TYPE C. LEADFREE.LITEON
	Positivo	FSP065-A1BR3 - 100-240V 50-60HZ 1.7A / 20V 65W
		PA-1650-58 - 100-240V 50-60HZ 1.6A / 20V 65W
		PA-1650-58AD/ 65W p- type C
		PA-1650-90B1 / 65W / 4mm C/CABO - plug
		PA-1650-90 / 65W / 4mm C/CABO – plug
		FSP065-A1BR3 / 65W p- type C
		Palermsh3 - 100-240V 50/60Hz 1.6A / 19V 3.42A
		HKA06519034-6K - 100-240V 50/60Hz 1.5A / 19V 3.42A

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		PI-ADAP090-A(02)
		PI-ADAP090-L(01)
		PI-ADAP090-F(03)
	SUNWARD	19V 64.98W.3.42A..AD65ABM190342..OD5.5mm.....LEAD-FREE
	JHD ELETRONICS	JHD-AD066C6-190342BA-A
Ventilador	GOODWAY	FAN SET. 65.5*62*5mm. W/CABLE. CF40CM. LEAD-FREE. WINMA
Bateria	BMS	BATTERY.LI.11.4V.CF40CM-3S5000-B1G1. 5000mAh. W/CABLE. LEAD-FREE.BMS
		BATTERY.LI.11.4V.CF40CM-3S3950-B1G1. 3950mAh. W/CABLE. LEAD-FREE.BMS
	Taimatsu	BATTERY.LI.11.4V.CF40CM-3S4000-T1V1. 4000mAh. W/CABLE. LEAD-FREE.TAIMATSU
	Positivo	CF40CM-3S5000-B1G1 - 11.4Vdc - 5000mAH/57Wh
		CF40CM-3S3950-B1G1 - 11.4Vdc - 3950mAH/45Wh
		CF40CM-3S4000-T1V1 - 11.4Vdc - 4000mAH/45Wh
		DN50-45 / 546781-3S / 3948 mAh, 45Wh
		DN50-57 / 556781-3S / 4936mAh, 57Wh
	GANGFENG	DN50-57 / 556781-3S / 4936mAh, 57Wh

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LCD	BOE	LCD.HD.14.1366*768.0.22629mm. ANTI-GLARE TYPE.NT140WHM-N44 V8.0.W/LED. HF.LEAD-FREE.BOE
		LCD.HD.14.1920*1080.0.161mm. ANTI-GLARE TYPE.NV140FHMN48 V8.2.IPS,W/LED...HF.LEAD-FREE.BOE
		NT140WHM-N44 1366 X 768
		QV140FHM-N48 1920 x 1080
		FHD_TN_1920*1080_315.81*197.45(W/ PCB)*3.0mm max_AA309.312*173.988mm_220_EDP1.2_BOE_NT140FHM-N44 V8.1__BOE
		FHD.15.6.1920*1080.0.17925mm....ANTI-GLARE TYPE.NV156FHM-N48 V8.2.250nits,W/LED...HF.LEAD-FREE.BO
		NT140WHM-N49
		NV140FHM-N69 / Panel_14'_Anti-Glare_IPS_1920*1080_315.81*195.57(W/ PCB)*3.0mm
		NV140FHM-N48-894A
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	Innolux	N140HCA-EAC 1920 X 1080
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Data de Emissão: 07/02/2025
Date of Issue

Valido até: 06/02/2028
Valid Term

	HEHUI	EE00QBA62.A
DC FAN	APHEX	B85D5HA21G2 4500±15% RPM
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	WINMA ELETRONICS	EFC-76050V1-1AH
	HR LIMITED CO LTD	BF095A05P 5VDC, 0.5A
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		ARN50
		POS-SIPWOAA
SSD	Intercambiável	SSD de até 1TB, SATA III, AHCI, M.2 2280 e SSD de até 1TB, PCIex4, NVMe, M.2 2280
		"SSD de até 1 TB, SATA III, AHCI, M.2 2280 SSD de até 1 TB, PCIe Gen 3 x4, NVMe, M.2 2280 SSD de até 1 TB, PCIe Gen 4 x4, NVMe, M.2 2280"

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Medição de nível de pressão sonora emitido por equipamento eletrônico, atuando sobre operador sentado

POSITIVO TECNOLOGIA S/A.

outubro/2024

Lactec

Medição de nível de pressão sonora emitido por equipamento eletrônico, atuando sobre operador sentado

MASTER N8450

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02	**09/06/2025**	**Claiton da Silva Mattos**	**Alteração descrição memória, tabela 1**

RESUMO

Com o objetivo de se avaliar o nível de exposição de um operador, na posição sentada, ao ruído emitido por um computador tipo notebook, modelo MASTER N8450, produzido pela POSITIVO, foram realizadas medições com um sonômetro. As medições foram realizadas com o computador em modo repouso (*idle*) e em modo de sobrecarga (*stressed*). Os procedimentos foram baseados no código ECMA-74 19th *Edition/December* 2021 – *Measurement of Airborne Noise emitted by Information Technology and Telecommunications Equipment.*

PALAVRAS-CHAVE

- Positivo Tecnologia;
- Emissão Sonora;
- ECMA-74.

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1. OBJETIVO

Apresentar os resultados do ensaio de medição de nível de pressão sonora sobre o operador, na posição sentada, emitido pelo computador tipo notebook modelo MASTER N8450, produzido pela POSITIVO, bem como a descrição simplificada do método utilizado, equipamentos e condições gerais do ambiente no qual foi conduzido o ensaio.

2. DESCRIÇÃO DO ITEM AVALIADO

O equipamento submetido ao ensaio foi um computador tipo notebook, modelo MASTER N8450, produzido pela Positivo Tecnologia. Os ensaios foram conduzidos no dia 09/10/2024. Os componentes (configuração) do notebook são apresentados na Tabela 1.

Tabela 1 - Componentes do notebook

Processador	Intel Ultra 7 155H
RAM Instalada	DDR5
Tipo de sistema	x64
GPU instalada	Intel UHD Graphics

3. CONDIÇÕES AMBIENTAIS E CARACTERÍSTICAS DA SALA DE ENSAIO

Os ensaios foram conduzidos em um ambiente à temperatura de 15°C, umidade relativa de 94% e pressão de 1020 hPa.

O ambiente utilizado foi uma sala com paredes e porta isoladas acusticamente para atenuar ruídos externos.

4. REFERÊNCIAS

a) *ECMA-74 19th Edition/December 2021 – Measurement of Airborne Noise emitted by Information Technology and Telecommunications Equipment*
b) ABNT NBR 10152 – Acústica – Níveis de Pressão Sonora em ambientes internos a edificações
c) PAL Acoustics – *Sound Pressure Level Test Report* KH1_13_0050 – 2013-4-3
d) CPqD – DOT-04436.RE.01-A – Ensaios e medição de pressão sonora no operador sentado – 25/07-2018
e) ISO 7779:2010 (Third Edition) - Acoustics – *Measurement of airborne noise emitted by information technology and telecommunications equipment*
f) ISO 9296:1988(E) – *Acoustics – Declared noise emission values of computer and business equipment*

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5. ESQUEMA DE MONTAGEM

O notebook foi montado sobre uma mesa de teste, com a distância frontal da borda da mesa de 0,05 m e posicionado equidistante das bordas laterais. O ângulo de abertura da tela do notebook foi ajustado para permanecer em um plano normal à direção do eixo do microfone.

O microfone (decibelímetro) foi posicionado centralizado, em frente ao computador, a uma distância de 0,25 metros de sua aresta frontal, a uma altura de 1,20 m em relação ao chão, e inclinado 30° em relação ao plano horizontal (apontando para o computador).

6. INSTRUMENTO UTILIZADO E CONFIGURAÇÃO

As medições foram realizadas com um decibelímetro/sonômetro (analisador) da marca Brüel & Kjær, modelo (type) 2231, número de série 1791477, equipado com um microfone da marca G.R.A.S. modelo 40 AE, com número de série 43652. O certificado de calibração do equipamento é o Nº CBR 2300336, emitido em 17/05/2023, pela Spectris do Brasil.

O analisador foi configurado para realizar a medição de nível de pressão sonora equivalente, Leq, com um tempo de integração de 30 segundos, ponderação no tempo do tipo Fast e ponderação em frequência do tipo A.

Foram medidos os níveis equivalentes do ruído de fundo (ambiente sem o computador ligado), do computador ligado em condição de repouso (*idle*) e em condição de sobrecarga operacional (*stressed*). Para gerar a condição de sobrecarga, foi utilizado o software *BurnIn V10.2*, configurado para gerar uma condição de 100% de uso da CPU, da memória RAM, do disco rígido e do processador gráfico, como mostrado na Figura 1.



Figura 1 - Modo de sobrecarga operacional - BurnIn

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7. RESULTADOS

Os resultados obtidos no ensaio são apresentados na Tabela 2, a seguir:

Tabela 2 - Resultados das medições.

	Nível de pressão sonora equivalente - L_{Aeq} (dB)	**L_{Aeq} corrigido* (dB)**	**Média Aritmética L_{Aeq} corrigido (dB)**
Ruído de fundo	22,0	-	20,8
	19,5	-	
MASTER N8450 - *idle*	19,9	18,6	18,4
	19,4	18,1	
MASTER N8450 - *stress*	47,2	-	47,3
	47,3	-	

*Correção aplicável quando a diferença entre os níveis do ruído de fundo e o emitido pelo equipamento é inferior a 6 dB. De acordo com a norma ISO 11201, o fator de correção, neste caso, é de 1,3 dB.

8. COMENTÁRIOS

Os resultados se referem exclusivamente ao modelo testado, e nas condições de ensaio relatadas, e são para fins de planejamento, verificação de níveis de emissão ou para auxiliar na definição de valores declarados. Não devem ser confundidos com os valores declarados de emissão da fonte sonora.

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CXL Consortium (https://www.computeexpresslink.org/)

ETSI-NFV (http://portal.etsi.org/portal/server.pt/community/NFV/367)

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Email: admin@trustedcomputinggroup.org (mailto:admin@trustedcomputinggroup.org)

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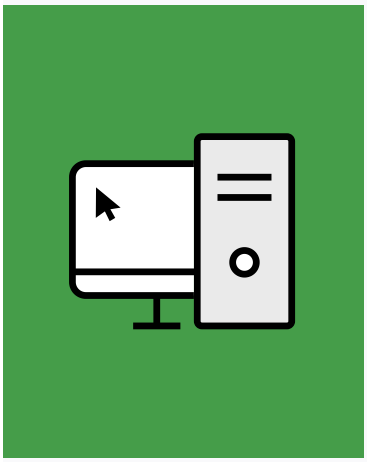
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RETURN TO SEARCH

MASTER N8450



COMPUTERS & DISPLAYS

Product Summary:

Product Type:	Notebook
Registered In:	Brazil
Manufacturer:	Positivo Tecnologia S.A.
EPEAT Tier:	Bronze
Registration Date:	2024-10-23
Product Status:	Active

All unique product identifiers existing for this product may not be listed here. If the unique product identifier you are looking for is not listed, please contact EPEAT at EPEAT@GEC.org.

EXPORT PRODUCT SUMMARY

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable “required” criteria. Click here to see a list of the required criteria for this product category.

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This product has met the necessary required criteria.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

Products that meet all required criteria and achieve **less than 50%** of the optional points are rated at
EPEAT Bronze

Products that meet all required criteria and achieve **50 - 74%** of the optional points are rated at
EPEAT Silver

Products that meet all required criteria and achieve **75 - 100%** of the optional points are rated at
EPEAT Gold

The optional criteria for this product category and optional points achieved by this product are listed below.

Optional Criteria	Scores
+ 4.1 Substance Management	0 / 16
+ 4.2 Materials Selection	0 / 3
+ 4.4 Product longevity/life-cycle extension	0 / 4
+ 4.5 Energy Conservation	0 / 3

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+ 4.7 Packaging	0 / 2
+ 4.8 Life cycle assessment and carbon footprint	0 / 6
+ 4.9 Corporate Environmental Performance	0 / 9
+ 4.10 Corporate social responsibility	0 / 6
TOTAL OPTIONAL CRITERIA SCORE:	**0 / 49**

Please note that it is not required for a product to achieve any optional points.

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A) to the product are not included in the Total Optional Criteria Score, and are not reflected above.

For any questions, comments, or feedback regarding the EPEAT Registry, please contact us.

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Contact Us

+1.503.279.9383

PO Box 12149 Portland, OR 97212-0149 USA

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RETURN TO SEARCH

MASTER N8450

COMPUTERS & DISPLAYS

Computers & Displays Product Category Required Criteria

All EPEAT Computers & Displays Products must meet, at a minimum, the following required criteria.

(4.1.1)	Product carbon footprint disclosure and assurance
(4.1.1.1)	Conformance with European Union ROHS Directive substance restrictions
(4.1.2)	Corporate GHG Inventory
(4.1.3.1)	Elimination of intentionally added mercury in light sources
(4.1.5.1)	Reduction of bromine and chlorine content in plastic parts >25 grams
(4.1.7.1)	Compliance with provisions of EU Battery Directive
(4.2.1)	Manufacturer GHG reduction target aligned with climate science
(4.2.1.1)	Minimum post-consumer recycled plastic, ITE-derived post-consumer recycled plastic or bio-based plastic content
(4.3.1)	Communication of energy management requirements for key component facilities
(4.3.1.1)	Identification of materials and components requiring selective treatment
(4.3.2.1)	Plastic parts compatible with recycling
(4.3.2.2)	Plastic parts separable for recycling
(4.4.1)	Manufacturer use of renewable electricity
(4.4.1.1)	Service support
(4.4.2.1)	Removal of external enclosure
(4.4.2.3)	Spare parts
(4.4.2.4)	Battery replacement and information
(4.5.1.1)	Conformance to current ENERGY STAR program requirements
(4.5.1.2)	Lowest Power Mode limit
(4.6.1)	Conformance with applicable ENERGY STAR® product eligibility criteria
(4.6.1.1)	Provision of product take-back services
(4.6.2)	External power supply energy efficiency
(4.6.2.1)	Provision of a removable rechargeable battery take-back program
(4.6.3)	Battery charger system energy efficiency
(4.6.3.1)	End-of-life processing
(4.7.1.1)	Elimination of intentionally added heavy metals in packaging
(4.7.1.2)	Elimination of elemental chlorine as a bleaching agent in packaging material

que product identifier

able “required” criteria.

l points. It is not

that meet all required
nd achieve 75 - 100% of
nal points are rated at
Gold

oduct are listed below.

	Scores
+ 4.7 Packaging	0 / 2
+ 4.8 Life cycle assessment and carbon footprint	0 / 6
+ 4.9 Corporate Environmental Performance	0 / 9

Proposta de Preço ITEM 3 - POSITIVO TECNOLOGIA (1661786) SEI 2025.0013177 / pg. 808

+	4.10 Corporate social responsibility	0 / 6
	TOTAL OPTIONAL CRITERIA SCORE:	0 / 49

Please note that it is
required for a produ
achieve any optiona

For any questions, c

with regular
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Computers & Displays Product Category Required Criteria

All EPEAT Computers & Displays Products must meet, at a minimum, the following required criteria.

(4.1.1)	Product carbon footprint disclosure and assurance
(4.1.1.1)	Conformance with European Union ROHS Directive substance restrictions
(4.1.2)	Corporate GHG Inventory
(4.1.3.1)	Elimination of intentionally added mercury in light sources
(4.1.5.1)	Reduction of bromine and chlorine content in plastic parts >25 grams
(4.1.7.1)	Compliance with provisions of EU Battery Directive
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(4.6.3.1)	End-of-life processing
(4.7.1.1)	Elimination of intentionally added heavy metals in packaging
(4.7.1.2)	Elimination of elemental chlorine as a bleaching agent in packaging material

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Mosaico Portal Mosaico

Mosaico - SCH v3.0.258.a805cdfd3eb32ab8f6d2cd8be5362e53f83151af (09/04/2025)

Consultar Produtos Homologados e (ou) Certificados

Informe o N° de homologação ou parte dele, para emissão dos respectivos documentos, ou clique em DASHBOARD para consultas diversas.

N° de homologação/Certificado (legado):

Filtrar Limpar

Produtos Homologados e (ou) Certificados

(Registro: 1 - 1 de 1, Página: 1 de 1) 1 10

Nº de Homologação	Modelo do Produto	Fabricante	Tipo do Produto	Validade	
12069-21-04423	AX211NGW	Intel Corporation SAS	Transceptor de Radiação Restrita	01/09/2025	

(Registro: 1 - 1 de 1, Página: 1 de 1) 1 10

Proposta de Preço ITEM 3 - POSITIVO TECNOLOGIA (1661786) SEI 2025.001317 / pg. 810

República Federativa do Brasil
Agência Nacional de Telecomunicações

Certificado de Homologação

(Intransferível)

Nº **12069-21-04423**

Validade: **Indeterminada**

Emissão: **20/09/2023**

Requerente:
CNPJ: 57.286.247/0001-33
INTEL SEMICONDUTORES DO BRASIL LTDA

Fabricante:
INTEL CORPORATION SAS
425 RUE DE GOA, CARGO B6
Nº
06600
FRANÇA

Este documento homologa, nos termos da regulamentação de telecomunicações vigente, o Certificado de Conformidade nº ICC 05.049/2023.1, emitido pelo **ICC Instituto de Certificações e Conformidades Ltda**. Esta homologação é expedida em nome do solicitante aqui identificado e é válida somente para o produto a seguir discriminado, cuja utilização deve observar as condições estabelecidas na regulamentação de telecomunicações.

Tipo - Categoria:
Transceptor de Radiação Restrita - II

Modelo - Nome Comercial (s):
AX211NGW

Características técnicas básicas:

Faixa de Frequências Tx (MHz)	Designação de Emissões	Tecnologias	Potência Máxima de Saída (W)	Tipo de Modulação
2.400,0 a 2.483,5	931KF7D	SALTO EM FREQÜÊNCIA	0,0103	GFSK
2.400,0 a 2.483,5	1M44G7D	SALTO EM FREQÜÊNCIA	0,0088	¶/4DQPSK e 8DPSK
2.400,0 a 2.483,5	683KF7D	SEQÜÊNCIA DIRETA	0,0069	GFSK
2.400,0 a 2.483,5	1M14F7D	SEQÜÊNCIA DIRETA	0,0069	GFSK
2.400,0 a 2.483,5	10M3X9D	SEQÜÊNCIA DIRETA	0,25	DBPSK, DQPSK e CCK
2.400,0 a 2.483,5	16M9X9D	OFDM	0,504	BPSK, QPSK, 16 QAM, 64 QAM
2.400,0 a 2.483,5	17M7X9D	OFDM	0,514	BPSK, QPSK, 16 QAM, 64 QAM
2.400,0 a 2.483,5	36M5X9D	OFDM	0,498	BPSK, QPSK, 16 QAM, 64 QAM
2.400,0 a 2.483,5	19M1X9D	OFDMA	0,424	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
2.400,0 a 2.483,5	38M1X9D	OFDMA	0,499	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.725,0 a 5.850,0	15M7X9D	OFDM	0,135	BPSK, QPSK, 16 QAM, 64 QAM
5.725,0 a 5.850,0	18M9X9D	OFDM	0,283	BPSK, QPSK, 16 QAM, 64 QAM
5.725,0 a 5.850,0	37M4X9D	OFDM	0,249	BPSK, QPSK, 16 QAM, 64 QAM
5.725,0 a 5.850,0	18M9X9D	OFDM	0,283	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.725,0 a 5.850,0	37M4X9D	OFDM	0,249	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.725,0 a 5.850,0	78M0X9D	OFDM	0,194	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.725,0 a 5.850,0	19M1X9D	OFDMA	0,134	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.725,0 a 5.850,0	38M1X9D	OFDMA	0,143	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.150,0 a 5.350,0	-	OFDM	0,093	BPSK, QPSK, 16 QAM, 64 QAM
5.150,0 a 5.350,0	-	OFDM	0,097	BPSK, QPSK, 16 QAM, 64 QAM
5.150,0 a 5.350,0	-	OFDM	0,087	BPSK, QPSK, 16 QAM, 64 QAM
5.150,0 a 5.350,0	-	OFDM	0,097	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.150,0 a 5.350,0	-	OFDM	0,087	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.150,0 a 5.350,0	-	OFDM	0,056	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.150,0 a 5.350,0	-	OFDM	0,028	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.150,0 a 5.350,0	-	OFDMA	0,045	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.150,0 a 5.350,0	-	OFDMA	0,052	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.150,0 a 5.350,0	-	OFDMA	0,035	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.150,0 a 5.350,0	-	OFDMA	0,032	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.470,0 a 5.725,0	-	OFDM	0,36	BPSK, QPSK, 16 QAM, 64 QAM
5.470,0 a 5.725,0	BPSK, QPSK, 16 QAM, 64 QAM	OFDM	0,333	BPSK, QPSK, 16 QAM, 64 QAM
5.470,0 a 5.725,0	-	OFDM	0,314	BPSK, QPSK, 16 QAM, 64 QAM
5.470,0 a 5.725,0	-	OFDM	0,333	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.470,0 a 5.725,0	-	OFDM	0,314	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.470,0 a 5.725,0	-	OFDM	0,21	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.470,0 a 5.725,0	-	OFDM	0,111	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.470,0 a 5.725,0	-	OFDMA	0,087	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.470,0 a 5.725,0	-	OFDMA	0,068	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.470,0 a 5.725,0	-	OFDMA	0,084	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.470,0 a 5.725,0	-	OFDMA	0,094	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM

Faixa de Frequências Tx (MHz)	Designação de Emissões	Tecnologias	Potência Máxima de Saída (W)	Tipo de Modulação
5.925,0 a 7.125,0	-	OFDM	0,017	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.925,0 a 7.125,0	-	OFDM	0,02	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.925,0 a 7.125,0	-	OFDM	0,044	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.925,0 a 7.125,0	-	OFDM	0,02	BPSK, QPSK, 16 QAM, 64 QAM
5.925,0 a 7.125,0	-	OFDM	0,044	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.925,0 a 7.125,0	-	OFDM	0,098	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
5.925,0 a 7.125,0	-	OFDM	0,181	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.925,0 a 7.125,0	-	OFDMA	0,023	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.925,0 a 7.125,0	-	OFDMA	0,043	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.925,0 a 7.125,0	-	OFDMA	0,085	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM
5.925,0 a 7.125,0	-	OFDMA	0,226	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM

Ensaio de SAR não aplicável: Produto não acabado, cuja integração em outro equipamento requer nova avaliação.

Observações

Na instalação do produto devem ser observadas as condições de uso conforme estabelecido no Regulamento sobre Equipamentos de Radiocomunicação de Radiação Restrita.

Este certificado substitui o de mesmo número emitido em 24/06/2023

Constitui obrigação do fabricante do produto no Brasil providenciar a identificação do produto homologado, nos termos da regulamentação de telecomunicações, em todas as unidades comercializadas, antes de sua efetiva distribuição ao mercado, assim como observar e manter as características técnicas que fundamentaram a certificação original.

As informações constantes deste certificado de homologação podem ser confirmadas no SCH - Sistema de Gestão de Certificação e Homologação, disponível no portal da Anatel. (www.anatel.gov.br).

Secundino da Costa Lemos
Gerente de Certificação e Numeração - substituto

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

OFÍCIO Nº 234.2025.CPL.1661731.2025.001317

Manaus, *na data da assinatura.*

Ao Senhor

CARLOS ALEXANDRE DOS SANTOS NOGUEIRA

Chefe do Setor de Infraestrutura e Telecomunicação

Assunto: Análise de Propostas de Preços referente ao **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ SRP**.

Senhor Chefe,

Cumprimentando-o com o presente, informamos que tramita nesta Comissão Permanente de Licitação o Processo SEI n.º 2025.001317, referente ao **PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP,** cujo objeto é o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses*.

Isto posto, encaminhamos os autos em epígrafe a esse **Setor de Infraestrutura e Telecomunicação - SIET,** para **análise e manifestação** quanto às proposta de preço abaixo elencadas:

1. E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.º 05.778.325/0005-47, para o Item 1 (doc. 1661785); e

2. Positivo Tecnologia S/A (Filial), CNPJ (MF) n.º 81.243.735/0009-03, para o Item 3 (doc. 1661786).

Atenciosamente,

Maurício Araújo Medeiros

Pregoeiro - PORTARIA 606/2025/SUBADM

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 01/07/2025, às 14:58, conforme art. 1º, III, "b", da Lei 11.419/2006.

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MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
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PARECER Nº 15.2025.SIET.1661793.2025.001317

PROCESSO DE COMPRA:
2025.001317
Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ SRP
Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317

OBJETO:
Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com gara
por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsolet
dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.

1. **Relatório**

Trata-se de pedido de compatibilização da proposta da empresa **ER SOLUÇÕES INFORMÁTICA LTDA.** melhor classificada para o **ITEM 1: MICROCOMPUTADOR TIPO 1 - "ALL IN ONE" COM MONITOR AUXILIAR**, na fase de disputas do Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ, documentos 1661785 e 1661819, recebido no dia 1/7/2025.

2. **Da Análise**

2.1 Produto ofertado

Item	Descrição	Quantidade	Produto Ofertado
1	**ITEM 1: MICROCOMPUTADOR TIPO 1 - "ALL IN ONE" COM MONITOR AUXILIAR** **Marca/Modelo de Referência:** Monitor Lenovo ThinkVision T24i30.	1.000	**Microcomputador tipo All in One:** Lenovo Tiny-In-One 23,8' Gen 5 12NAGAR1US + Lenovo ThinkCentre M70q Gen 5 Tiny (Configurado para atender ao edital) + **Monitor auxiliar:** Lenovo ThinkVision T24i-30 IPS - PN 63CFMAR1BR

2.2 Análise comparativa

DESCRIÇÃO	PARECER	OBSERVAÇÕES
SUBITEM 1.1: MICROCOMPUTADOR TIPO "ALL IN ONE"		
1. PLACA PRINCIPAL (PLACA MÃE)		
1. A placa mãe deve ser construída pelo próprio fabricante do microcomputador ou produzida sob a especificação do mesmo, não sendo aceito placas de livre comercialização no mercado, nem em regime de OEM;		
2. Deverá possuir chipset produzido pelo mesmo fabricante do processador, e indicado para a linha corporativa/profissional;		
3. Deve possuir, no mínimo, 2 (dois) slots para memória RAM, “do tipo DDR-5 SODIMM, ou superior”, permitindo a instalação de até 64 (sessenta e quatro) Gigabytes;		
4. Deve suportar tecnologia Dual Channel de utilização de memória RAM;		
5. Deve possuir 2 (dois) Sockets M.2 para SSD SATA ou NVMe;		
6. Deve possuir 1 (um) Socket M.2 Para Cartões Wi-Fi/Bluetooth;		
7. Deve possuir recursos DASH 1.0 (Desktop and mobile Architecture for System Hardware), ou tecnologia minimamente equivalente;		
8. Deve ser compatível com Energy Star 7.0/7.1, ou tecnologias superiores;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
9. Deve possuir capacidade de desligamento do vídeo e do disco rígido após tempo determinado pelo usuário, religamento por acionamento de teclado ou mouse, bem como função de economia de energia para monitor, placa-mãe e unidades de armazenamento internas;		
10. Deve possuir chip TPM (*Trusted Platform Module*), versão 2.0, ou superior, soldado à placa principal, e destinado ao armazenamento de senhas, certificados digitais e chaves criptográficas em conformidade com as especificações do *Trusted Computing Group*;		
11. Deve possuir sistema de detecção de intrusão de chassis, com respectivo acionador instalado no gabinete que permita a detecção de abertura ainda que o equipamento esteja desligado da fonte de energia, devendo gerar log na memória flash da BIOS com todos os eventos de intrusão;		
12. Deve possuir suporte a virtualização por hardware;		
13. Deve possuir suporte a implementação de extensões de virtualização de I/O por hardware;		
14. Deve possuir suporte a aceleração de segurança AES no hardware;		
15. Deve possuir suporte à tecnologia de acesso remoto *out-of-band* embutida no hardware;		
16. Deve possuir controle da velocidade de rotação do cooler do processador de forma automática, de acordo com a variação de temperatura da CPU;		
17. Deve suportar boot por pendrive ou disco conectado a uma porta USB 3.1;		
18. Deve suportar a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/https boot.		
2. BIOS		
1. O BIOS deve ser desenvolvido pelo mesmo fabricante do equipamento ou customizado por ele;		
2. O fabricante do equipamento, deverá ser totalmente responsável pelo BIOS fornecido juntamente com a placa mãe e pela atualização do mesmo, devendo promover as alterações que se façam necessárias e corrigir problemas ou danos causados ao equipamento em razão desse BIOS ou de procedimentos de atualização deste, (que poderão ser acompanhados pela empresa caso haja necessidade), durante o período de garantia do equipamento;		
3. BIOS em português ou inglês, desenvolvido em conformidade com a especificação UEFI 2.5 ou superior (http://www.uefi.org) e capturáveis pela aplicação de inventário SCCM (System Center Configuration Manager);		
4. O fabricante deverá comprovar a compatibilidade com o padrão UEFI através do site http://www.uefi.org/members, na categoria membros;		
5. Deve ser do tipo flash EPROM, atualizável por software, compatível com o padrão plug-and-play;		
6. Deve ser lançado a partir de 2016 e entregue na versão mais atual disponibilizada pelo fabricante;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
7. Deve ter suporte a ACPI, ou tecnologia superior;		
8. Deve ser desenvolvido de acordo com o padrão de segurança NIST 800-147 ou ISO/IEC 19678:2015, para garantir a integridade do BIOS;		
9. Deve possuir recursos de controle de permissão através de senhas, sendo uma para inicializar o computador e outra para acesso e alterações das configurações do BIOS;		
10. Deve possuir software embarcado no BIOS com funções de diagnóstico de problemas, e gerenciamento com as seguintes características:		
1. Permitir o teste do equipamento, com independência do sistema operacional instalado, o software de diagnóstico deve ser capaz de ser executado (inicializado) a partir da UEFI (Unified /Extensible Firmware Interface) ou do Firmware do equipamento através do acionamento de tecla função (F1...F12);		
2. O software de diagnóstico deverá ser capaz de informar, através de tela gráfica: O fabricante e modelo do equipamento, processador, memória RAM, firmware, e capacidade do disco rígido;		
11. Deve possuir ferramenta que possibilite realizar a formatação definitiva dos dispositivos de armazenamento conectados ao equipamento, desenvolvida em acordo com o padrão de segurança NIST 800-88 ou ISO/IEC 27040:2015. Caso esta ferramenta não seja nativa do BIOS, deverá ser oficialmente homologada pelo fabricante do equipamento;		
12. Deve possuir opção para exportar/importar configurações. No caso de ferramenta externa fornecida para atender esse item, a mesma deve ser disponibilizada no web site de suporte do fabricante, em conjunto com outras ferramentas relacionadas e homologadas para o modelo do equipamento;		
13. Deve oferecer a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela **CONTRATANTE**;		
14. Deve possuir campo não editável com o número de série do equipamento gravado em memória não volátil e campo editável que permita inserir identificação customizada (identidade patrimonial com pelo menos 10 caracteres). Serão aceitos BIOS com reprogramação via software desde que estes estejam devidamente licenciados para o equipamento e disponibilizados para download no web site de suporte do fabricante;		
15. Deverá permitir o gerenciamento remoto do microcomputador mesmo desligado, desde que energizado pela rede elétrica e conectado localmente à rede de dados, permitindo ligar e desligar o microcomputador remotamente, com controle de acesso, e com possibilidade de definir horários programados;		
1. Deve permitir acesso remoto através da rede ao POST (procedimento de inicialização) e BIOS para leitura e gravação, mesmo com o equipamento desligado;		
2. Deverá permitir acesso remoto ao sistema operacional e processo de inicialização do microcomputador através de interface gráfica, com controle remoto do mouse e teclado (KVM remoto), independente do suporte de aplicações locais ou estado do sistema operacional;		
3. Possuir a capacidade de inventário remoto de Hardware mesmo com o equipamento desligado.		
3. PROCESSADOR		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. O processador ofertado, deverá possuir minimamente 6 (seis) núcleos e 12 (doze) threads de processamento, podendo atingir frequência de operação interna de até 4.8 GHz em modo turbo, no mínimo;		
2. Em caso de processadores com arquitetura de computação heterogênea (big.LITTLE), só serão contabilizados os cores voltados para performance, na contagem mínima de núcleos, threads e ciclos de clock base (MHz);		
3. Memória cache total de, no mínimo, 22MB;		
4. O processador ofertado deverá ser Intel Core i5, "de 13ª geração", ou AMD Ryzen 5 PRO, "serie 8000", admitindo-se famílias ou gerações mais novas;		
5. O processador deverá pertencer à última geração disponível utilizada pelo fabricante do equipamento, **com desempenho mínimo de 21.900 (vinte e um mil e novecentos) pontos**, considerando o uso pleno de todos os núcleos e sem a aplicação de configurações específicas para aumento ou modificação de desempenho, como "overclock", "undervoltage", "overvoltage" ou quaisquer outras que não estejam em conformidade com os padrões definidos pelo fabricante; 1. O desempenho será comprovado por intermédio de resultados de BenchMark, disponíveis em http://www.cpubenchmark.net/cpu_list.php; 2. Será admitida uma margem de tolerância de 2% (dois por cento) do desempenho mínimo exigido.		
6. Deve possuir tecnologia de controle dinâmico de frequência do processador para núcleos individuais e ou múltiplos núcleos;		
7. Deve possuir controlador com suporte à memória RAM do tipoDDR5-4800 MT/s, ou superior;		
8. Deverá possuir tecnologia de fabricação de 10 nm (dez nanômetros) ou inferior;		
9. TDP(Thermal Design Power) típico de 35W, e máximo de 95W, declarado pelo fabricante;		
10. Deve possuir instruções do padrão AVX 2.0, ou superior;		
11. Deve possuir instruções do padrão SSE4.1/4.2, ou superior;		
12. Deve possuir instruções que implementem extensões de virtualização de hardware;		
13. Deve possuir instruções AES-NI embutidas;		
14. O proponente deverá declarar em sua proposta comercial o modelo do processador ofertado.		
4. MEMÓRIA RAM		
1. Deverá possuir, no mínimo, 16 (dezesseis) Gb de memória RAM instalados, com capacidade de expansão mínima de 64 (sessenta e quatro) Gb;		
2. Deverá ser do tipo DDR-5 SODIMM ou superior e possuir, no mínimo, 4.800 MT/s de velocidade de comunicação com o barramento principal;		
3. A implementação do total de memória RAM deve utilizar 2 (dois) módulos, em modo dual channel;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
4. A memória ofertada, deverá possuir as melhores especificações possíveis dentre as disponíveis para o equipamento proposto;		
5. Os módulos devem ser instalados durante o processo de manufatura do computador, e homologados como parte do equipamento, inclusive estando cobertos pela garantia e suporte como descrito no Termo de Referência.		
5. UNIDADE DE ARMAZENAMENTO		
1. Deve possuir, no mínimo, 1 (uma) unidade padrão tipo *Solid State Drive* (SSD) interna instalada do tipo M.2, na capacidade mínima de 256 GB e velocidade mínima de gravação de 1.200MB/s;		
2. Deve utilizar interface tipo M.2 PCIe 4.0, com o protocolo NVMe, ou superior;		
3. Deve ser instalada durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência.		
6. CONECTIVIDADE		
1. Deverá possuir no mínimo 4 (quatro) portas USB 3.2;		
2. Possuir 1 (uma) porta USB 3.2 Tipo C;		
3. Possuir, no mínimo, um total de 2 (duas) portas de vídeo adicionais, suportando a utilização de até 2 (dois) monitores auxiliares simultânea e independentemente do monitor principal;		
1. Os tipos das portas auxiliares de vídeo supracitadas devem ser, no mínimo, 1 (um) HDMI 1.4 e 01 (uma) DisplayPort 1.2. Em caso de versões miniaturizadas destas, adaptadores revertendo para elas devem ser fornecidos sem custo adicional.		
7. INTERFACES DE REDE		
1. Deve possuir, no mínimo, 1 (uma) interface de rede RJ45 compatível com os padrões 10, 100 e 1000 Mbps, *autosense*, *full-duplex* e *plug-and-play*, configurável totalmente por *software* e com função Wake On Lan instalada e em funcionamento;		
2. A controladora ethernet, deverá ser do tipo "*onboard*", e suportar recurso WOL (Wake On LAN);		
3. Deve possuir, no mínimo, 1 (uma) interface de rede sem fios no padrão Wi-Fi 6 (802.11 B/G/N/AX), com velocidade de até 1.73Gbps, Tecnologia MU-MIMO, banda dupla em 2.4Ghz e 5Ghz, e suporte a Bluetooth 5.3 ou superior;		
4. As controladoras Wi-Fi e Bluetooth, deverão estar em um único cartão M.2, conectado em slot específico na placa mãe, que deve ser instalado durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência;		
5. As interfaces Wireless ofertadas devem possuir, na data da entrega da proposta, homologação junto à ANATEL com certificado disponível publicamente no endereço eletrônico desta agência, conforme a Resolução n.º 242 de 30 de novembro de 2000.		
8. CONTROLADORA DE VÍDEO		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. Deve possuir controladora 3D/2D com suporte a DirectX 12, ou superior;	□	
2. Deve suportar Pixel Shader 3.0, ou superior;	□	
3. Deve suportar OpenGL 4.5, ou superior;	□	
4. Deve suportar a resolução mínima de 1920 X 1080 @ 60 Hz;	□	
5. Deve possuir tecnologia de controle dinâmico de frequência, podendo atingir, no mínimo, 1.5GHz;	□	
6. Frequência base de 350 MHz, no mínimo;	□	
7. Deve suportar, no mínimo, o uso de 3 (três) monitores simultânea e independentemente.	□	
9. CONTROLADORA DE SOM E MULTIMÍDIA		
1. O equipamento deve possuir uma controladora de som integrada, do tipo "*onboard*";	□	
2. Deve possuir, no mínimo, uma interface de som com 1 (um) conector combinado para fone de ouvido e microfone, de 3,5 mm;	□	
3. Deve possuir, no mínimo, 2 alto-falantes internos, com 2 Watts RMS de potência, compatíveis com a controladora de som;	□	
4. Deve incorporar microfone, com cancelamento de ruído, voltados para captar o som do usuário em frente ao computador.	□	
10. TECLADO		
1. A marca do teclado deverá ser igual à do fabricante do equipamento ofertado;	□	
2. Deve ser USB no idioma padrão, português (Brasil), ABNT-II;	□	
3. Deve possuir teclas multimídia, com no mínimo, aumentar e diminuir volume, além do mute;	□	
4. Admite-se a utilização de teclas de função (F1...F12), para tais ações;	□	
5. Deve possuir teclado numérico integrado;	□	
6. Deve possuir, no mínimo, LEDs indicadores de estado das teclas capslock e numlock;	□	
7. Deve possuir ajuste de inclinação;	□	
8. Deve ser em gradações das cores preto ou prata;	□	
9. Não será aceito teclado com cabo retrátil;	□	
10. Não será aceito teclado wireless/bluetooth (sem fio).	□	
11. MOUSE		
1. Deve ser óptico, com conexão USB, com 3 (três) botões e sistema de rolagem de página, com formato ergonômico e com design ambidestro, devendo possuir resolução mínima por hardware de 1.000 dpi;	□	

DESCRIÇÃO	PARECER	OBSERVAÇÕES
2. Deve ser da mesma marca do fabricante do equipamento ofertado;		
3. Deve ser em gradações das cores preto ou prata;		
4. Deve acompanhar mousepad ergonômico com apoio em gel para o pulso, do mesmo fabricante do equipamento.		
5. O mouse ou teclado ofertados, deve possuir um leitor biométrico, certificado para trabalhar com a autenticação do Microsoft Windows Hello.		
12. MONITOR/TELA INTEGRADA		
1. Deve ser de tecnologia IPS (In-Plane Switching) ou VA (Vertical Alignment);		
2. Tamanho de 23,5 polegadas widescreen, ou superior;		
3. Deve suportar, no mínimo, 16 milhões de cores;		
4. Resolução mínima de 1920x1080@60Hz;		
5. Ângulo de visão mínimo de 170° horizontal e vertical;		
6. Deve possuir brilho mínimo de 250 cd/m² e contraste de 1000:1;		
7. Deve possuir controle digital de brilho e contraste, no mínimo;		
8. Deve possuir, no mínimo, ajuste de altura e inclinação;		
9. O equipamento deve possuir uma webcam integrada, de 1.5 megapixels, FHD (1080P), no mínimo, não sendo aceita solução externa.		
13. FORMATO DE MANUFATURA E FONTE DE ALIMENTAÇÃO		
1. O computador deve ser produzido no formato All in One.		
2. Serão aceitos monitores com projetos específicos para acoplamento de desktops do tipo mini/micro com volume máximo de 1.2l, onde ambos (monitor + computador) devem ser do mesmo fabricante;		
1. Neste tipo de solução, a conexão do desktop à tela/monitor deverá ser feita através de conector específico (docking) ou via um cabo único 3-1 (energia, USB e DisplayPort) a ser conectado em uma porta específica upstream. Devendo, portanto, ligar e desligar o equipamento através de botão presente na frente do monitor, não sendo necessário o acesso do usuário a parte de trás do equipamento, mantendo um uso de apenas um ponto de energia elétrica.		
2. Caso a licitante opte pela proposta de solução modular, deverão ser respeitadas todas as demais exigências, como no tocante a quantidade de portas, conectores, capacidade de expansão, e demais especificações;		
3. Não será aceito o uso de suportes ou adaptadores externos, para acoplamento do equipamento ao monitor.		
3. Em ambos os casos, “All in One ou Conjunto Modular”, o sistema deverá possuir ajuste de altura e inclinação;		
4. No caso de sistema modular, à exemplo do formato All in One, todo o conjunto deve ser mantido por uma única fonte de energia;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
5. O material do gabinete deve ser de estrutura livre de BFR e outros materiais tóxicos e/ou antiecológicos;		
6. O gabinete deve possuir acabamento interno composto de superfícies não cortantes;		
7. Deve possuir botão de liga/desliga e luz de indicação de computador ligado (power-on) em local visível e acessível do gabinete;		
8. Deve oferecer a possibilidade de, se demandado, aplicar logo oficial da **CONTRATANTE**, com área de impressão mínima de 3,00 x 2,72 cm, através de sistema de gravação direta como aplicação em laser, não sendo admitido o uso de adesivagem, serigrafias ou adaptações semelhantes. A gravação deverá ser feita apenas no gabinete do computador ou na parte traseira do monitor AIO, visando medidas de segurança;		
9. O gabinete deverá possuir fenda de encaixe padrão "Kensington" ou "Noble Wedge" para utilização de cabo de aço do mesmo tipo;		
10. No caso de conjunto modular, a unidade computacional deve possuir mecanismo de acoplagem e travamento no corpo ou na base do monitor principal, impossibilitando a remoção não autorizada da mesma;		
11. Deve ser fornecido com fonte de alimentação do mesmo fabricante e compatível com o equipamento, com potência suficiente para suportar todos os dispositivos internos em suas configurações máximas permitidas (Monitor principal, placa mãe, interfaces, unidades de armazenamento, memória RAM e demais componentes e periféricos);		
12. A fonte de alimentação deve possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);		
13. A fonte deve possuir tensão de entrada 110 e 220 Volts de forma automática;		
14. Os cabos de conexão à rede elétrica devem seguir o padrão NBR 14136:2002;		
15. Admite-se o fornecimento de fonte externa para o atendimento deste item, desde que corresponda a todos os requisitos.		
14. SISTEMA OPERACIONAL E SOFTWARES COMPLEMENTARES		
1. Deve acompanhar o equipamento licença OEM do sistema operacional Microsoft Windows 11 Professional de 64 bits, ou versão mais recente, no idioma Português Brasil;		
2. O equipamento deve ser entregue com o Windows 11 Professional 64 bits, ou versão mais recente instalado;		
3. Cada equipamento deve incluir uma licença específica de software dedicado para:		
• Controle: Funções de bloqueio e desbloqueio remoto.		
• Inventário: Gestão detalhada de hardware e software do equipamento.		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
• Rastreabilidade: Recursos de geolocalização integrados.		
4. O software de controle e monitoramento deve possuir a funcionalidade de persistência, garantindo a preservação do cliente do software e de suas funcionalidades, mesmo após a perda total de dados ou formatação do disco rígido, utilizando tecnologia de residência em firmware;		
5. A interface de controle e monitoramento dos equipamentos deve ser baseada em nuvem, sem a necessidade de licenças adicionais além daquelas atribuídas a cada equipamento;		
6. A licença do software dedicado deve ter cobertura mínima equivalente ao período de garantia do equipamento, de 60 (sessenta) meses, e deve estar plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;		
7. Os equipamentos poderão ser entregues com imagem de instalação do sistema operacional e softwares customizada e previamente fornecida pela **CONTRATANTE**, conforme especificado no Termo de Referência.		
15. COMPATIBILIDADE		
1. Deve ser apresentado o certificado de compatibilidade dos equipamentos com o sistema operacional Windows 11 x64 obtido junto à Microsoft. Deverá constar no Microsoft Hardware Compatibility List (HCL) para o sistema operacional exigido e ofertado. 1. A comprovação da compatibilidade será efetuada pela apresentação do documento *Hardware Compatibility Test Report* emitido especificamente para o modelo no sistema operacional ofertado, ou pela indicação no site da Microsoft;		
2. O equipamento deverá possuir certificado de homologação comprovando a compatibilidade do mesmo com, pelo menos, uma distribuição de Linux. A comprovação da compatibilidade será efetuada pela apresentação de documento emitido especificamente para o modelo ofertado;		
3. O equipamento, na configuração ofertada, deve possuir certificado de conformidade contra incidentes elétricos e de combustão dos materiais (IEC/EN 60950) e de imunidade eletromagnética (IEC/EN 61000), comprovado através de certificados ou do relatório de avaliação de conformidade nos moldes da portaria 170/2012 vigente do INMETRO, ou similar Internacional.		
16. OUTROS REQUISITOS		
1. Todas as partes do equipamento (gabinete, base, teclado e mouse) devem ter coloração neutra em gradações de preto ou prata, mantendo o padrão e cor;		
2. O equipamento deverá ser novo, partes e peças, de primeiro uso, que deverão ser acondicionados em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;		
3. Informar marca e modelo dos componentes utilizados na solução e apresentar prospecto com as características técnicas do equipamento e da placa mãe, processador, memórias, interfaces de rede, fonte de alimentação, unidade de armazenamento, mouse e teclado, incluindo especificação de marca, modelo, e outros elementos que de forma inequívoca identifiquem e constatem as configurações, possíveis expansões e upgrades, comprovando-os através de certificados, manuais técnicos, folders e demais literaturas técnicas editadas pelos fabricantes;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
4. Todos os equipamentos deverão ser entregues idênticos, ou seja, todos os componentes externos e internos deverão ter os mesmos modelo e marca;		
5. O equipamento proposto deverá estar em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;		
6. Não serão aceitos produtos descontinuados por seus fabricantes, não devendo constar em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não poderão ter previsão de descontinuidade de fornecimento, suporte ou vida;		
7. O equipamento em pleno funcionamento deve atender à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que deverá acompanhar a proposta;		
8. Deverá ter compatibilidade eletromagnética e de radiofrequência IEC 61000 comprovado através de certificado ou relatório de avaliação de conformidade emitido por órgão credenciado pelo INMETRO ou internacional equivalente;		
9. Deverá ter compatibilidade com o padrão DMI 2.0 (Desktop Management Interface) ou mais recente da DMTF (Desktop Management Task Force), comprovado através de documentação expedida pelo fabricante do equipamento ou comprovação de que o fabricante do equipamento é membro do consórcio DMTF listado em uma das categorias BOARD ou LEADERSHIP;		
10. Deverá ter compatibilidade com a norma TPM Specification Version 2.0 especificadas pelo TCG (Trsted Computing Group), devendo o fabricante ser membro de uma das categorias listadas no site http://www.trustedcomputinggroup.org/about_tcg/tcg_members;		
11. Deverá ter compatibilidade com EPEAT na nova categoria Bronze, comprovada através de atestados ou certidões que mostrem que o equipamento é aderente ao padrão de eficiência energética EPEAT, emitido por instituto credenciado junto ao INMETRO ou equivalente internacional. 1. Será admitida como comprovação também, a indicação que o equipamento consta no site www.epeat.net na nova categoria Bronze;		
12. Não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS (Restriction of Certain Hazardous Substances);		
13. Os equipamentos deverão pertencer à linha corporativa, não sendo aceitos equipamentos destinados ao uso da linha doméstica. 1. A comprovação deverá ser apresentada junto com a proposta;		
14. Não serão aceitos equipamentos que contenham lacres de violação de garantia por abertura, que inviabilizem a inspeção dos componentes a qualquer momento;		
15. **Garantia de 60 (sessenta) meses on-site**, para todos os itens que compõe a solução, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo.		
SUBITEM 1.2: “MONITOR AUXILIAR 23,5 POL WIDESCREEN”		
1. TELA		
1. Deve ser de tecnologia IPS (In-Plane Switching) ou VA (Vertical Alignment);		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
2. Tamanho de 23,5 polegadas widescreen, no mínimo;		
3. Resolução mínima de 1920x1080 a 60Hz, 16 milhões de cores;		
4. Deve possuir brilho mínimo de 250 cd/m² e contraste de 1000:1;		
5. Ângulo de visão mínimo de 170° horizontal e vertical;		
6. Deve possuir controle digital de brilho, contraste e posicionamentos vertical e horizontal;		
7. Deve apresentar ajustes mínimos de altura de 15 cm e funcionalidade de rotação Pivot de 90°.		
2. INTERFACES		
1. Possuir ao menos 2 (duas) portas de entrada de vídeo;		
2. Não importando os tipos de portas de entrada, deve acompanhar cabos que permitam conectar o monitor a equipamentos com portas de tipo HDMI 1.4 e DisplayPort; 1. Serão aceitos adaptadores, em adicional aos cabos originais, para contemplar a possibilidade de conexão às portas solicitadas no item acima.		
1. O equipamento deve possuir interface de montagem no padrão VESA 100 x 100mm;		
2. O acessório deve possibilitar minimamente os seguintes movimentos do monitor: 1. Rotação de 90º; 2. Elevação de 10cm; 3. Panorâmica de 90º; 4. Inclinação de -5º a 20º;		
4. OUTROS REQUISITOS		
1. Cor deve ser predominantemente a mesma da cor ofertada no item 1 "**MICROCOMPUTADOR All in One modular**";		
2. Possuir certificação de segurança UL ou IEC 60950;		
3. Possuir certificação de economia de energia EPA Energy Star, TCO 5.0 ou similar;		
4. Deve aceitar tensões de 110 e 220 Volts de forma automática;		
5. Deve acompanhar cabo de alimentação original do fabricante com conector de tomada elétrica no padrão brasileiro (NBR 14136:2002);		
6. O equipamento deverá vir acondicionado em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;		
7. Os equipamentos não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS - Restriction of Certain Hazardous Substances;		

3. Conclusão

O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica **OPINA** pela aceitabilidade do produto ofertado.

É o parecer.

Manaus, 2 de julho de 2025.

FRANCISCO ELVISLÂNIO PEREIRA
Agente de apoio - Manutenção/Informática

WALESKA GRACIEME ANDRADE MARQUES DE OLIVEIRA
Agente Técnico - Analista de Banco de Dados

Documento assinado eletronicamente por **Waleska Gracieme Andrade Marques de Oliveira**, **Agente Técnico - Analista de Banco de Dados**, em 02/07/2025, às 11:34, conforme art. 1º, III, "b", da Lei 11.419/2006.

Documento assinado eletronicamente por **Francisco Elvislânio Pereira**, **Agente de Apoio - Administrativo**, em 02/07/2025, às 11:34, conforme art. 1º, III, "b", da Lei 11.419/2006.

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Torino Informática Ltda.
CNPJ 03.619.767/0005-15
I.E. 083.327.90-8
tanabe@grupotorino.com.br

Serra, 30 de Junho de 2025

À
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS

EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP
ABERTURA: 29/06/2025 ÀS 10H00MIN.

PROPOSTA DE PREÇO

PREZADOS SENHORES:

TENDO EXAMINADO MINUCIOSAMENTE AS NORMAS ESPECÍFICAS DO PROCESSO LICITATÓRIO ACIMA TENDO COMO OBJETO A *AQUISIÇÃO DE EQUIPAMENTOS DE INFORMATICA* E APÓS TERMOS TOMADO CONHECIMENTO DE TODAS AS CONDIÇÕES LÁ ESTABELECIDAS, PASSAMOS A FORMULAR A SEGUINTE PROPOSTA:

1. PROPOSMOS FORNECER, SOB NOSSA INTEGRAL RESPONSABILIDADE, OS EQUIPAMENTOS, OBJETO DO REFERIDO CERTAME, CONFORME A TABELA ABAIXO:

ITEM	ESPECIFICAÇÃO	QUANT	MARCA	VALOR UNITÁRIO	VALOR TOTAL
Lote 02	COMPUTADOR TIPO 2 "WORKSTATION COM MONITOR" **WORKSTATION HP Z2 G9 TOWER** PROCESSADOR I7-14700 - VPRO MEMÓRIA 32(2X16) DDR5 ECC HD SSD 512 NVME HD SATA 1TB WIFI6 SD CARD PLACA DE VIDEO RTX A1000 8GB FONTE 700W WINDOWS 11 PROFESSIONAL SOFTWARE ABSOLUTO GARANTIA 5 ANOS TECLADO E MOUSE HP **MONITOR AUXILIAR 01** Monitor Philips 27" Hello Webcam 5MP Noise Cancelling USB-C 100W 27B1U5601H GARANTIA 5 ANOS **MONITOR AUXILIAR 02** Monitor AOC 27" FHD IPS com base ajustável e HUB USB B2B 27P2Q GARANTIA 5 ANOS	50	HP Z2 G9 TOWER WORKSTATION	**R$ 20.280,00** (VINTE MIL E DUZENTOS E OITENTA REAIS)	**R$ 1.014.000,00** (UM MILHAO E QUATORZE MIL REAIS)
				TOTAL DA	**R$ 1.014.000,00**

PROPOSTA	(UM MILHAO E QUATORZE MIL REAIS)

2. ***O VALOR TOTAL DA PROPOSTA É R$ R$ 1.014.000,00 (UM MILHAO E QUATORZE MIL REAIS)***
3. NOS PREÇOS INDICADOS ACIMA ESTÃO INCLUÍDOS, ALÉM DO FORNECIMENTO DO PRODUTO, TODOS OS DEMAIS CUSTOS COM SALÁRIOS, BENEFÍCIOS, ENCARGOS, TRIBUTOS, FRETE, GARANTIA E DEMAIS CONTRIBUIÇÕES PERTINENTES.
4. DECLARAMOS QUE CONHECEMOS A LEGISLAÇÃO DE REGÊNCIA DESTA LICITAÇÃO E QUE OS SERVIÇOS SERÃO PRESTADOS DE ACORDO COM AS CONDIÇÕES ESTABELECIDAS NESTE EDITAL, O QUE CONHECEMOS E ACEITAMOS EM TODOS OS SEUS TERMOS, INCLUSIVE QUANTO AO PAGAMENTO E OUTROS.
5. DECLARAMOS, TAMBÉM, QUE NENHUM DIREITO A INDENIZAÇÃO OU REEMBOLSO DE QUAISQUER DESPESAS NOS SERÁ DEVIDO, CASO A NOSSA PROPOSTA NÃO SEJA ACEITA PELA **MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS** SEJA QUAL FOR O MOTIVO.
6. A PRESENTE PROPOSTA É VALIDA POR **90 (NOVENTA) DIAS**, A CONTAR DA DATA ESTABELECIDA PARA A SUA ABERTURA.
7. OS PAGAMENTOS SERÃO REALIZADOS EM ATÉ **20 (VINTE)** DIAS E CREDITADOS A **CONTA CORRENTE Nº 7105-6**, **AGÊNCIA Nº 2414-7** NO **BANCO DO BRASIL S/A, CÓDIGO 001.**
8. O PROCURADO DA EMPRESA, CUJO CNPJ É 03.619.767/0005-15, QUE ASSINARÁ A ATA DE REGISTRO DE PREÇO OU CONTRATO, É O **SR. RODRIGO DO AMARAL RISSIO** PORTADOR DO **CPF 220.807.218-95** E **RG 27.954.969-6 SSP/SP;**
9. GARANTIA: **60 (SESSENTA) MESES** ONSITE PARA O EQUIPAMENTO**,** CONFORME EDITAL;
10. VALORES EXPRESSOS EM REAIS
11. PRAZO DE ENTREGA: CONFORME EDITAL ATÉ **90 (NOVENTA) DIAS,** APÓS A DATA DE ASSINATURA DO CONTRATO E/OU RECEBIMENTO DO EMPENHO;
12. ENVIO DO MATERIAL VIA TERRESTRE/RODOVIÁRIO;
13.

DADOS DOS SOCIOS:

RODRIGO DO AMARAL RISSIO
RG 27.954.969-6 SSP/SP
CPF 220.807.218-95
DENISE DO AMARAL RISSIO
RG 6.438.259 SSP/SP
CPF 246.137.578-00

DADOS DA LICITANTE / CONTRATAÇÃO:

TORINO INFORMATICA LTDA
CNPJ 03.619.767/0005-15
IE: 083.327.90-8
IM: 4675890
AV. 600, SN – QUADRA 15 – MODULO 10 – SETOR INDUSTRIAL – TIMS
SERRA – ES – CEP 29.161-419

DADOS PARA CONTATO / INFORMAÇÕES:

TORINO INFORMATICA LTDA
CNPJ: 03.619.767/0001-91
IE: 669.369.347-110
IM: 114.058
RUA RITA DE CARVALHO MONTEIRO, 120 – RETIRO SÃO JOÃO
SOROCABA – SP – CEP 18085-750
CONTATO: MARCELLO TANABE
TEL/FAX: (15) 3238-9520 OU 99148-9313
EMAIL: tanabe@grupotorino.com.br

DATASHEET EQUIPAMENTO / DRIVERS:

https://h20195.www2.hp.com/v2/getpdf.aspx/c08109687.pdf
https://support.hp.com/br-pt/drivers/hp-z2-tower-g9-workstation-desktop-pc/2100987204

DADOS PARA SUPORTE TÉCNICO:

https://chamados.grupotorino.com.br
suporte@grupotorino.com.br
0800-201-5666

TORINO INFORMÁTICA LTDA
CNPJ: 03.619.767/0005-15
RODRIGO DO AMARAL RISSIO
RG: 27.954.969-6 SSP/SP
CPF: 220.807.218-95

Overview

HP Z2 G9 Tower Workstation Desktop PC

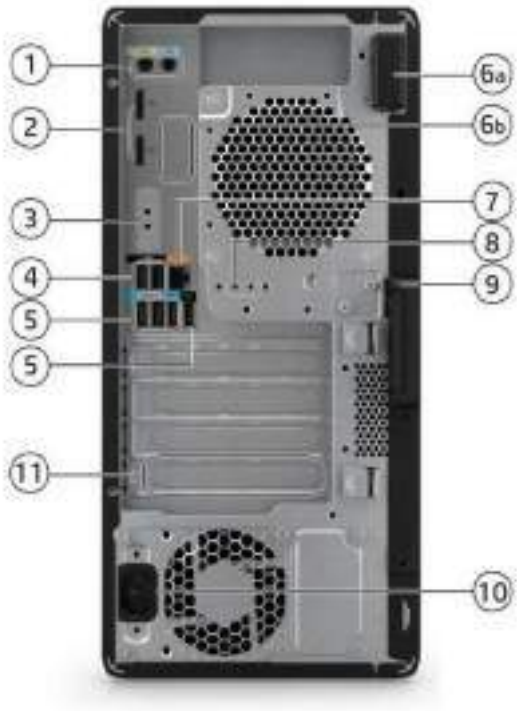


front

1. HDD Activity LED
2. Power button
3. Universal audio jack (with CTIA & OMTP headset support)
4. (2) USB-A 10Gbps ports (1 charge port supports up to 5V/2.1A)
5. (2) USB-A 10Gbps rate ports
6. (1) USB-C® 20Gbps port (optional, charge supports up to 5V/3A)
7. SD card reader 4.0 (optional)
8. Slim ODD bay
9. External 5.25" bay

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Overview



rear

1. (1) Audio Line-in jack
   (1) Audio Line-out jack
2. (2) DisplayPort 1.4 ports
3. Flex I/O module: choose one from the following:
   (1) DisplayPort 1.4, (1) HDMI 2.0b, (1) VGA, (1) Dual USB-A 5Gbps port, (1) USB-C® 10Gbps port (Power Delivery 15W, Alt Mode DisplayPort), (1) 2nd 1 GbE LAN, (1) Thunderbolt 3 with USB-C® / USB4 40Gbps * (cabled to PCIe AIC**) (1) 1Gbps Fiber LC NIC
4. (2) Hi-Speed USB-A 480Mbps port
5. (2) USB-A 10Gbps ports
   (1) USB-A 5Gbps port
   (1) Hi-Speed USB-A 480Mbps port
6. (1) WLAN Antenna (optional)
   a. Internal
   b. External
7. (1) 1Gb LAN
8. 2nd serial port (optional)
9. Hood lock (optional)
10. Power connector

*Maximum speed requires DisplayPort™ and PCIe aggregation.
**Thunderbolt support only in PCI-E slot4.
NOTE: Onboard Display support DP1.4/HBR2. Flex I/O module Display support DP1.4/HBR3. Resolution all support up to 5120x3200 24bpp @60Hz.

Form Factor Tower

Operating Systems Preinstalled:

- Windows 11 Pro - HP recommends Windows 11 Pro[2]
- Windows 11 Home - HP recommends Windows 11 Pro[2]
- Linux®-ready[5]
- Ubuntu®[4,5]

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- Intel 12th generation processors will support and preinstall Ubuntu 20.02 and 20.04.
- Intel 13th generation processors support and preinstall Ubuntu 22.04 LTS

Web-supported only:

- Windows 10 Enterprise 64[2]

Supported Version:

- HP tested Windows 10, versions 20H2, 21H1, 21H2 and 22H2 on this platform. For testing information on newer versions of Windows 10, please see: https://support.hp.com/document/c05195282.
- Red Hat® Enterprise Linux® Workstation 8[6]
- SUSE Linux® Enterprise Desktop 15[6]
- Ubuntu®[4,5]
  - Intel 12th generation processors will support and preinstall Ubuntu 20.02 and 20.04.
  - Intel 13th generation processors support and preinstall Ubuntu 22.04 LTS

[2] Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.
[4] Not all features are available in all editions or versions of Ubuntu. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS to take full advantage of Ubuntu functionality. Ubuntu may be automatically updated. ISP fees may apply and additional requirements may apply over time for updates.
[5]A certified preloaded version of Ubuntu® 20.04 LTS is available from HP for this platform. Not all features are available in all editions or versions of Ubuntu. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS to take full advantage of Ubuntu functionality. Ubuntu may be automatically updated. ISP fees may apply, and additional requirements may apply over time for upgrades.
[6]For detailed OS/hardware support information for Linux, see:
http://www.hp.com/support/linux_hardware_matrix

NOTE: Your product does not support Windows 8 or Windows 7. In accordance with Microsoft's support policy, HP does not support the Windows® 8 or Windows 7 operating system on products configured with Intel® and AMD® 7th generation and forward processors or provide any Windows® 8 or Windows 7 drivers on http://www.support.hp.com. A full list of HP products and the Windows 10 versions tested is available on the HP support website. https://support.hp.com/us-en/document/c05195282

Processors Overview[1,3,4,5]

Intel 14th Generation Processors:

Intel® Core™ i5-14400 with Intel UHD Graphics (1.8 GHz E-core base frequency, 2.5 GHz P-core base frequency, up to 3.5 GHz E-core Max Turbo frequency, up to 4.7 GHz P-core Max Turbo frequency, 20 MB L3 cache, 6 P-cores and 4 E-cores, 16 threads)

Intel® Core™ i5-14500 with Intel UHD Graphics (1.9 GHz E-core base frequency, 2.6 GHz P-core base frequency, up to 3.7 GHz E-core Max Turbo frequency, up to 5.0 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads)

Intel® Core™ i5-14600 with Intel UHD Graphics (2.0 GHz E-core base frequency, 2.7 GHz P-core base frequency, up to 3.9 GHz E-core Max Turbo frequency, up to 5.2 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads)

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Overview

Intel® Core™ i5-14600K with Intel UHD Graphics (2.6 GHz E-core base frequency, 3.5 GHz P-core base frequency, up to 4.2 GHz E-Core Max Turbo frequency, up to 5.3 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads)

Intel® Core™ i7-14700 with Intel UHD Graphics (1.5 GHz E-core base frequency, 2.1 GHz P-core base frequency, up to 4.2 GHz E-core Max Turbo frequency, up to 5.3 GHz P-core Max Turbo frequency, 33 MB L3 cache, 8 P-cores and 12 E-cores, 28 threads)

Intel® Core™ i7-14700K (3.4GHz P-Core base frequency, 2.5GHz E-Core base frequency, up to 4.3GHz E-Core Max Turbo frequency, up to 5.5 GHz P-core Max Turbo frequency, 33MB L3 cache, 8 P-cores and 12 E-cores, 28 threads)

Intel® Core™ i9-14900 (2GHz P-Core base frequency, 1.5GHz E-Core base frequency, up to 4.3GHz E-Core Max Turbo frequency, up to 5.4 GHz P-core Max Turbo frequency, 36MB L3 cache, 8 P-cores and 16 E-cores, 32 threads)

Intel® Core™ i9-14900K (3.2GHz P-Core base frequency, 2.4GHz E-Core base frequency, up to 4.4GHz E-Core Max Turbo frequency, up to 5.6 GHz P-core Max Turbo frequency, 36MB L3 cache, 8 P-cores and 16 E-cores, 32 threads)

Intel 13th Generation Processors:

Intel® Core™ i5-13400 (1.8 GHz E-core base frequency, 2.5 GHz P-core base frequency, up to 3.3 GHz E-core Max Turbo frequency, up to 4.6 GHz P-core Max Turbo frequency, 20 MB L3 cache, 6 P-cores and 4 E-cores, 16 threads)

Intel® Core™ i5-13500 (1.8 GHz E-core base frequency, 2.5 GHz P-core base frequency, up to 3.5 GHz E-core Max Turbo frequency, up to 4.8 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads)

Intel® Core™ i5-13600 (2.0 GHz E-core base frequency, 2.7 GHz P-core base frequency, up to 3.7 GHz E-core Max Turbo frequency, up to 5.0 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads)

Intel® Core™ i5-13600K (2.6 GHz E-core base frequency, 3.5 GHz P-core base frequency, up to 3.9 GHz E-core Max Turbo frequency, up to 5.1 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads)

Intel® Core™ i7-13700 (1.5 GHz E-core base frequency, 2.1 GHz P-core base frequency, up to 4.1 GHz E-core Max Turbo frequency, up to 5.1 GHz P-core Max Turbo frequency, 30 MB L3 cache, 8 P-cores and 8 E-cores, 24 threads)

Intel® Core™ i7-13700K (2.5 GHz E-core base frequency, 3.4 GHz P-core base frequency, up to 4.2 GHz E-core Max Turbo frequency, up to 5.3 GHz P-core Max Turbo frequency, 30 MB L3 cache, 8 P-cores and 8 E-cores, 24 threads)

Intel® Core™ i9-13900 (1.5 GHz E-core base frequency, 2.0 GHz P-core base frequency, up to 4.2 GHz E-core Max Turbo frequency, up to 5.2 GHz P-core Max Turbo frequency, 36 MB L3 cache, 8 P-cores and 16 E-cores, 32 threads)

Intel® Core™ i9-13900K (2.2 GHz E-core base frequency, 3.0 GHz P-core base frequency, up to 4.3 GHz E-core Max Turbo frequency, up to 5.4 GHz P-core Max Turbo frequency, 36 MB L3 cache, 8 P-cores and 16 E-cores, 32 threads)

Intel 12th Generation Processors:

Intel® Core™ i9-12900 with Intel® UHD Graphics (1.8 GHz E-core base frequency, 2.4 GHz P-core base frequency, up to 3.8 GHz E-core Max Turbo frequency, up to 5.0 GHz P-core Max Turbo frequency, up to 5.1 GHz with Intel® Turbo Boost Technology, 30 MB L3 cache, 8 P-cores and 8 E-cores, 24 threads)

Intel® Core™ i7-12700 with Intel® UHD Graphics (1.6 GHz E-core base frequency, 2.1 GHz P-core base frequency, up to 3.6 GHz E-core Max Turbo frequency, up to 4.8 GHz P-core Max Turbo frequency, up to 4.9 GHz with Intel® Turbo Boost Technology, 25 MB L3 cache, 8 P-cores and 4 E-cores, 20 threads)

Intel® Core™ i5-12500 with Intel® UHD Graphics (3.0 GHz P-core base frequency, up to 4.6 GHz P-core Max Turbo frequency, 18 MB L3 cache, 6 P-cores, 12 threads)

Intel® Core™ i3-12100 with Intel® UHD Graphics (3.3 GHz P-core base frequency, up to 4.3 GHz P-core Max Turbo frequency, 12 MB L3 cache, 4 P-cores, 8 threads)

[1] Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.

[3] Intel Turbo Boost performance varies depending on hardware, software and overall system configuration. See http://www.intel.com/technology/turboboost for more information.

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Overview

[4] Intel vPro® requires Windows 10 Pro 64 bit or higher, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or Wi-Fi 6E WLAN and TPM 2.0. Some functionality requires additional 3rd party software in order to run. Features of vPro® Essentials and Enterprise vary. See http://intel.com/vpro

[5] Memory will run at 4400 speed (MT/s) in 2DPC within 1DIMM population; memory will run at 4000 speed (MT/s) in 2DPC within 2DIMM of 1 Rank population and memory will run at 3600 speed (MT/s) in 2DPC within 2DIMM of 2 Rank population

Color	Black
Convertibility	No
Expansion Slots (see system board section for more details)	Slot 1: PCIe Gen5 x16 Slot 2: PCIe Gen3 x1 - with x4 open end Connector Slot 3: PCIe Gen3 x4 - with x16 Connector Slot 4: PCIe Gen3 x4 with open end connector
Expansion Bays (see storage section for more details)	(2) Internal 3.5" bays (1) External 5.25" bay (1) Internal 2.5" bay (for SSD only) (1) Dedicated 9.5mm slim optical disk drive bay
Front I/O	(2) USB-A 10Gbps ports (1 charge port supports up to 5V/2.1A), (2) USB-A 10Gbps ports, (1) USB-C 20Gbps eport (charge supports up to 5V/3A, optional), (1) SD card reader (optional), (1) universal audio jack
Internal I/O [5]	(1) Hi-Speed USB 480Mbps header for SD card reader (1) serial port available with header (1) serial and PS/2 available with header
Rear I/O	(2) DisplayPort 1.4 ports, (1) Audio Line out, (1) Audio Line in, (1) 1GbE LAN, (3) Hi-Speed USB 480Mbps ports, (2) USB-A 10Gbps ports, (1) USB-A 5Gbps port, (1) serial (optional), (1) Flex I/O port (VGA, HDMI 2.0b, DisplayPort 1.4, USB-C® 10Gbps port (Power Delivery 15W, Alt Mode Display Port), (1) Dual USB-A 5Gbps port, (1) 2nd 1GbE LAN, (1) Thunderbolt 3 with USB4 USB-C® 40Gbps (cabled to PCIe AIC)*, (1) 1Gbps Fiber LC NIC
Optional I/O	Flex IO* – choose one of the following options: (1) DisplayPort™ 1.4 port, (1) HDMI 2.0b, (1) VGA,(1) 2nd 1GbE LAN, (1) 1Gbps Fiber LC NIC, (1) Dual USB-A 5Gbpsport ,(1) USB -C® 10Gbps port (15W USB Power Delivery, Alt Mode DisplayPort™), (1) Thunderbolt™ 3 with USB4 USB-C® 40Gbps port (cabled to PCIe® AIC**); Front – (1) USB-C® 20Gbps port (charging), (1) SD card reader; Front – choose one of the following options: (1) USB-C ® 20Gbps (charging), (1) SD 4.0 card reader Rear –(1) serial; *About Thunderbolt compatibility, please refer to the FAQ of Thunderbolt community. https://www.thunderbolttechnology.net/tech/faq **Flex IO port and PCIe slot 4 will be occupied when Thunderbolt is installed.
Interfaces Supported	SD card reader (optional)
On-board RAID Support	SATA and NVME RAID 0 Striped Array SATA RAID and NVME RAID 1 Mirror Array

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Overview

Chassis Dimensions (H x W x D)	H: 14" [356mm] W: 6.7" [169mm] D: 15.2" [385mm]
Packaged Dimensions	H: 20.39" (518mm) W: 11.61" (295mm) D: 19.29" (490mm)
Rack Dimensions	4U
Weight	Exact weights depend upon configuration (System weight only). Starting at 6.2kg (13.7lbs.)
Temperature	Operating: 5° to 35° C (40° to 95° F) Above 1524 m (5,000 feet) altitude, the maximum operating temperature is reduced by 1° C (1.8° F) for every 305 m (1,000 feet) increase in elevation Non-operating: -40° to 60° C (-40° to 140° F) Maximum rate of change: 10°C/hr
Humidity	Operating: 8% to 85% RH, non- condensing, 35° C maximum wet bulb Non-operating: 8% to 90% relative humidity, non-condensing, 35° C maximum wet bulb
Maximum Altitude (non-pressurized)[6]	Operating (with Rotational Hard Drives): 3,048 m (10,000 feet) Operating (with only Solid-State Drives): 5,000 m (16,404 feet) Non-operating: 12,192 m (40,000 feet) Maximum operating temperature is reduced as altitude increases. See Temperature for details.
Power Supply	700W wide-ranging, active Power Factor Correction, 92% Efficiency with two 6+2 graphics power connectors. 500W wide-ranging, active Power Factor Correction, 90% Efficiency. 450W wide-ranging, active Power Factor Correction, 90% Efficiency. 350W wide-ranging, active Power Factor Correction, 92% Efficiency. **NOTE:** The Power Supply Efficiency Report for the 700W 92% Efficiency, 500W 90% Efficiency, 450W 90% Efficiency and 350W 92% Efficiency Power Supply may be found at the following links: 700W PSU: https://www.plugloadsolutions.com/80PlusPowerSuppliesDetail.aspx?id=0&type=2 500W PSU: LiteOn 500W PSU Efficiency Report Delta 500W PSU Efficiency Report 450W PSU: https://www.plugloadsolutions.com/80PlusPowerSuppliesDetail.aspx?id=0&type=2 350W PSU: AcBel 350W PSU (SFF) Efficiency Report AcBel 350W PSU (Custom) Efficiency Report Delta 350W PSU Efficiency Report
Backup Devices	For a complete listing of compatible DAT tape drives, LTO tape drives and RDX Removable Disk Backup System offerings, please visit http://www.hp.com/go/connect
Chipset	Intel® W680 chipset
Memory	4 DIMM slots supporting up to 192GB non-ECC or up to 128 GB ECC, DDR5 unbuffered DIMM memory. Max memory speed will run at 4400 MT/s based on system configuration. See Supported Components / Memory Section for details.

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Supported Components

SATA Hard Drives		Factory Configured	Option Kit	Option Kit Part Number
	1TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Y	Y	W0R10AA
	2TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Y	Y	2Z274AA
	4TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Y	Y	K4T76AA
	8TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Y	Y	2Z273AA
	12TB SATA 7200 rpm 6Gb/s 3.5" HDD (Enterprise Class)	Y	Y	5S461AA

NOTE: For internal bay install, HDD option kits require separate purchase of 6Z9U6AA HP Z2 Tower HDD Cable Kit. For external bay install, HDD options kits require separate purchase of 6Z9U6AA HP Z2 Tower HDD Cable Kit & NQ099AA HP Optical Bay HDD Mounting Bracket.

PCIe Solid State Drives				
	HP ZTurbo 512GB PCIe-Gen 4x4 TLC Z2 SSDKit	Y	Y	201G0AA/AT
	HP ZTurbo 512GB PCIe-Gen 4x4 SED Z2 SSDKit	Y	Y	201F9AA
	HP ZTurbo 1TB PCIe-Gen 4x4 TLC Z2 SSDKit	Y	Y	201F5AA/AT
	HP ZTurbo 2TB PCIe-Gen 4x4 TLC Z2 SSDKit	Y	Y	201F8AA
	Z Turbo 1TB 2280 PCIe-Gen4x4 Self Encrypted OPAL2 TLC M.2 Z2 SSD	Y	Y	223A3AA/AT
	Z Turbo 2TB 2280 PCIe-Gen4x4 Self Encrypted OPAL2 TLC M.2 Z2 SSD	Y	Y	223A4AA/AT
	256GB 2280 PCIe-4x4 NVMe Value M.2 Z2 SSD Module	Y	Y	4M9Z1AA
	512GB 2280 PCIe-4x4 NVMe Value M.2 Z2 SSD Module	Y	Y	4M9Z2AA
	1TB 2280 PCIe-4x4 NVMe Value M.2 Z2 SSD Module	Y	Y	4M9Z3AA
	Z Turbo 4TB 2280 PCIe-4x4 TLC M.2 Z2 Kit SSD	Y	Y	5S492AA
	Z Turbo 2TB PCIe-4x4 TLC SSD Module	Y	Y	38T75AA
	Z Turbo 1TB 2280 PCIe-4x4 SED OPAL2 TLC M.2 SSD Module	Y	Y	38T76AA
	Z Turbo 1TB PCIe-4x4 TLC SSD Module	Y	Y	38T77AA
	Z Turbo 2TB 2280 PCIe-4x4 SED OPAL2 TLC M.2 SSD Module	Y	Y	38T79AA
	Z Turbo 512GB PCIe-4x4 TLC SSD Module	Y	Y	38T80AA
	Z Turbo 512GB 2280 PCIe-4x4 SED OPAL2 TLC M.2 SSD Module	Y	Y	38T81AA
	Z Turbo 4TB 2280 PCIe-4x4 TLC M.2 SSD Module	Y	Y	5S496AA
	Z Turbo 4TB 2280 PCIe-4x4 SED OPAL2 TLC M.2 SSD Module	Y	Y	5S497AA
	Z Turbo 4TB 2280 PCIe-4x4 SED OPAL2 TLC M.2 Z2 Kit SSD	Y	Y	5S498AA

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.
NOTE: PCIe M.2 SSD Kit SKUs include a heatsink. PCIe M.2 SSD Module SKUs do not include a heatsink.

Graphics		Factory Configured	Option Kit	Option Kit Part Number	Supported # of cards	Support Notes
Graphics Cable Adapters	HP DisplayPort To HDMI True 4k Adapter	Y	Y	2JA63AA		
	HP Single miniDP-to-DP Adapter Cable	Y	Y	2MY05AA		
	HP DisplayPort To DVI-D Adapter	Y	Y	FH973AA		

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Supported Components

	HP DisplayPort To DVI Adapter (Bulk 90)	Y	Y	FH973A6		
	HP DisplayPort To VGA Adapter	Y	Y	AS615AA/AT		
	HP DisplayPort to VGA Adapter Bulk Qty.90)	Y	Y	AS615A6		
	HP DisplayPort To VGA Adapter	Y	Y	F7W97AA		
	HP USB-C to DisplayPort Adapter	Y	Y	4SH08AA		
	HP USB-C to HDMI Adapter	Y	Y	4SH07AA		
	HP USB-C to VGA Adapter	Y	Y	4SH06AA		
Entry 3D	NVIDIA® T400 4 GB Graphics[2]	Y	Y	5Z7E0AA/AT	2	1
	NVIDIA® T400E 4 GB 4mDP Graphics	Y	Y	A4HP3AA	2	1
	NVIDIA RTX A400 4 GB 4mDP Graphics	Y	Y	9U277AA	2	1
	AMD Radeon Pro WX 3200 4GB	Y	Y	6YT6*AA/ AT	1	1
	AMD Radeon RX 6400 4 GB DH DP+HDMI Graphics	N	Y	6Q3U4AA/AT	1	1
Mid-range 3D	NVIDIA® T1000 4 GB Graphics	Y	Y		2	1
	NVIDIA® T1000 8 GB Graphics	Y	Y	5Z7D8AA/AT	2	1
	NVIDIA Long-Life T1000E 8 GB 4mDP Graphics	Y	Y	6V9V4AA/AT	2	1
	NVIDIA RTX A1000 8 GB 4mDP Graphics	Y	Y	9U276AA	2	1
	NVIDIA RTX™ A2000 6 GB 4mDP Graphics*	Y	Y	340L0AA	2	
	NVIDIA RTX™ A2000 12GB Graphics*	Y	Y	5Z7D9AA/AT	2	
	NVIDIA RTX 2000 Ada 16 GB 4mDP Graphics	Y	Y	8D6B8AA	2	
	NVIDIA RTX™ A4000 16GB*	Y		20X24AA/AT	2	
	NVIDIA Long-Life RTX A4000E 16 GB 4DP Graphics*	Y	Y	6H7J7AA	1	
	NVIDIA® RTX™ 4000 Ada 20 GB 4DP Graphics*	Y	Y	8D6B7AA	2	
	NVIDIA® RTX™ A4500 20GB GDDR6 4DP Graphics	Y	Y		1	
	NVIDIA Long-Life RTX A2000E 12 GB 4mDP Graphics	Y	Y	6V9V5AA/AT	2	
	AMD Radeon™ Pro W6600 Graphics (8GB GDDR6 dedicated) *	Y	Y	340K5AA	1	
High-End 3D	AMD Radeon™ Pro W6800 Graphics (32 GB GDDR6 dedicated) *	Y	Y	340K7AA	1	
	AMD Radeon Pro W7900 48 GB 3DP+1mDP Graphics	Y	Y	8F699AA	1	
	AMD Radeon Pro W7600 8 GB Graphics*	Y		8D6B9AA	1	
	AMD Radeon Pro W7500 8 GB Graphics	Y	Y	8D6C2AA	1	
	NVIDIA RTX 4500 Ada 24 GB 4DP Graphics	Y	Y	8D6C1AA	1	
	NVIDIA® RTX™ A5000 24 GB Graphics*	Y	Y	20X23AA/AT	1	
	NVIDIA RTX 5000 Ada 32 GB 4DP Graphics	Y	Y	8D6B6AA	1	

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Supported Components

AMD Radeon™ RX 6700 XT 12GB*	Y	Y	4C203AA	1

NOTE: Z2 G9 Tower with 700W PSU can support up to a 250W professional graphics card from HP, either factory-configured or added via after-market option, and can support up to 320W total graphics power when graphics is factory-configured.
Note 1: When dual graphics is configured the 450W and 500W base units will require the AMO HP Z2 TWR Dual Front Fan Kit part number 4N007AA; One storage device configuration for higher than 75W graphics cards (T1000 and up)
* Requires 700W chassis.

Memory

	Factory Configured	Option Kit	Option Kit Part Number	Support Notes
HP 8GB (1x8GB) DDR5-4800 nECC UDIMM	Y	Y	4M9X9AA	
HP 16GB (1x16GB) DDR5-4800 nECC UDIMM	Y	Y	4M9Y0AA	
HP 16GB (1x16GB) DDR5-4800 ECC UDIMM	Y	Y	4M9Y1AA	1
HP 32GB (1x32GB) DDR5-4800 nECC UDIMM	Y	Y	4M9Y2AA	
HP 32GB (1x32GB) DDR5-4800 ECC UDIMM	Y	Y	4M9Y3AA	1
HP 48GB (1x48GB) DDR5-5600 UDIMM NECC	Y	Y	8F070AA	

NOTE 1: ECC memory is supported
GENERAL NOTE: Two channels of DDR5 memory are supported. To realize full performance at least one DIMM must be inserted into each channel.
Though the memory modules can run up to 4800MHz, the current platform will support maximum memory speed of 4400MHz.

The system speed will be determined by a number of key factors:

Module Configuration	Description of configuration	Max Memory Speed (Actual Memory speed is dependent on CPU)
Single DIMM per channel	Configurations that contain only one or two DIMM modules with DIMMs only in the black slots	4400MHz
Two single ranked DIMMs in a channel	Configurations with 3 or 4 single ranked DIMMs (8GB and 16GB) installed in a system. Memory speed may also vary depending on vendor module mix.	4000MHz
Two dual ranked DIMMs in a channel	Configurations with 3 or 4 dual ranked DIMMs (32GB) installed in a system	3600MHz

When more than one memory slot is populated, symmetric configurations are required for 2 DIMMs per channel. Mix of different part numbers or mix of single and dual ranks within a channel is not allowed.

Optical and Removable Storage

	Factory Configured	Option Kit	Option Kit Part Number
HP DX175 Removable HDD Frame/Carrier	N	Y	1ZX71AA
HP DX175 Removable HDD Spare Carrier	N	Y	1ZX72AA
HP Z2 TWR SuperMulti DVD-Writer 9.5mm Slim ODD	Y	Y	4L5K0AA
HP Z2 TWR DVD-ROM 9.5mm Slim ODD	Y	Y	4L5K1AA
HP CRU QX328 5.25 in Front Removable M.2 Frame/Carrier	Y	Y	4N011AA

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Supported Components

HP CRU Secure High Performance Storage Module with 2TB M.2 SSD	Y	Y	56Q87AA
HP CRU Secure High Performance Storage Module with 1TB M.2 SSD	Y	Y	56Q88AA
HP CRU Secure High Performance Storage Module with 512GB M.2 SSD	Y	Y	56Q89AA
HP CRU SHIPS M.2 Spare Carrier	Y	Y	633X9AA

NOTES: Duplication of copyrighted material is strictly prohibited. Actual speeds may vary. Double Layer media compatibility will widely vary with some home DVD players and DVD-ROM drives. Note that DVD-RAM cannot read or write to 2.6GB Single Sided/5.2 Double Sided-Version 1.0 Media.

4N011AA HP CRU QX328 5.25in Front Removeable Frame/Carrier requires a separate purchase of HP CRU SHIPS Storage Module(s).

HP CRU Secure High Performance Storage (SHIPS) Module Kit contains select M.2 SSD for install into a factory configured or after market option front removeable storage carrier (HP CRU QX328 Frame/Carrier).

Networking and Communications	Factory Configured	Option Kit	Option Kit Part Number
Integrated Intel® I219LM PCIe GbE Controller (Intel® vPro® with Intel® AMT 16.0)	Y	N	
HP 1GbE LAN Flex Port 2020	Y	Y	141J6AA/AT
HP Flex 1GbE Fiber LC Single Port	Y	Y	20J15AA
NVIDIA Mellanox ConnectX-6 DX Dual Port 10/25GbE SFP28 NIC[1]	Y	Y	436M8AA
HP 10GbE SFP+ SR/SW LC Fiber Optic Transceiver	Y	Y	860T8AA
HP 25GbE SFP28 LC Fiber Optic Transceiver	Y	Y	860T9AA
Intel® Ethernet I350-T4 4-Port 1Gb NIC*	N	Y	W8X25AA
Intel® X550-T2 dual-port 10GbE NIC	Y	Y	1QL46AA
Intel® Ethernet Network Adapter I225-T1	Y	Y	406L9AA
Intel® Wi-Fi 6E AX211 BT 5.3 wireless card M.2 non-vPro[1,2,**,***]	Y	N	
Allied Telesis AT-2911T/2-901 Dual Port 1GbE NIC	Y	Y	6E3Y9AA/AT
Intel® Wi-Fi 7 BE200 BT 5.4 wireless card M.2 non-vPro[1,3,***,****]	Y	N	
Intel® i225-T1 single-port 2.5 GbE NIC	Y		

[1] Intel AX211 or BE200 with Internal antenna support Wi-Fi 6
[2] Intel AX211 with external antenna support Wi-Fi 6E
[3] Intel BE200 with external antenna support Wi-Fi 6E/7
*Intel I350-T4 4-port GbE NIC is an After Market Option only.
**Wi-Fi 6E (802.11ax) requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.
***Intel AX211 and BE200 must be configured at time of purchase. Not available as an After Market Option.
****Wi-Fi 7 (802.11BE) functionality requires Windows 11 24H2, select Intel® 14th processor, and a Wi-Fi 7 router, sold separately. Wi-Fi 7 is backwards compatible with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported.

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Supported Components

NOTES:
The integrated network connection is required to support Intel® vPro® Technology.

If AMT is provisioned, then network teaming with the integrated LAN port is not possible.

“Gigabit” Ethernet indicates compliance with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/sec. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

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Supported Components

Input Devices	Factory Configured	Option Kit	Option Kit Part Number
HP USB 320K Keyboard	Y	Y	9SR37AA
HP 320M Wired Mouse	Y	Y	9VA80AA
HP Wired Desktop 320MK Mouse and Keyboard	N	Y	9SR36AA
HP 125 Wired Keyboard	Y	Y	266C9AA
HP 975 USB+BT Dual Mode Wireless	N	Y	3Z726AA
HP 655 Wireless USB BLK KBD/MSE Kit	N	Y	N/A
HP 125 Wired Mouse	Y	Y	265A9AA
HP 128 Laser Wired Mouse	Y	Y	265D9AA
HP 935 Creator Wireless Mouse	N	Y	1D0K8AA
HP 455 Programmable Wireless Keyboard	Y	Y	4R177AA
HP 455 Programmable Wireless Keyboard (Bulk Qty.12)	Y	Y	4R177A6
HP 655 Wireless Keyboard and Mouse Combo	Y	Y	4R009AA
HP 655 Wireless Keyboard and Mouse Combo (Blk Qty.10)	Y	Y	4R009A6

NOTE: Keyboard and Mouse are optional or add on features.

Flex Module (Rear IO)	Factory Configured	Option Kit	Option Kit Part Number
HP 1GbE LAN Flex Port 2020	Y	Y	141J6AA/AT
HP DP Flex Port 2020	Y	Y	141J7AA/AT
HP Dual USB-A 3.2 Gen1 Flex Port 2020	Y	Y	141J8AA/AT
HP HDMI Flex Port	Y	Y	69D47AA/AT
HP USB-C 3.2 Gen2 Alt Flex Port 2020	Y	Y	141K6AA/AT
HP VGA Flex Port 2020	Y	Y	141K7AA/AT
HP Flex 1GbE Fiber LC Single Port	Y	Y	20J15AA

Other Hardware	Factory Configured	Option Kit	Option Kit Part Number
HP Single TBT3 wType C and USB4 PCIe x4 Card	Y	N	N/A
HP Z2 Internal Serial Port and PS/2 Port	Y	Y	141K9AA/AT
HP Z2 Power Cord Kit	Y	Y	1N1D5AA
C13-C14 2.0m 15A 100-127V Countries Straight Desktop Power Cord	Y	Y	8R881AA
C13-C14 2.0m 10A 200-240V Countries Straight Desktop Power Cord	Y	Y	8R882AA
HP Z2 2nd serial port adapter	Y	Y	141K8AA/AT
HP Z2 Tower Dust Filter	Y	Y	141L2AA/AT
HP Z2 Tower Dust Filter and bezel	Y	Y	141L3AA/AT
HP PCIe x1 Parallel Port Card	Y	Y	N1M40AA
HP Z2 G9 Single Type-C SuperSpeed USB 20Gbps Front Port	Y	Y	4M9X8AA/AT
HP Z2 TWR Dual Front Fan Kit	Y	Y	4N007AA
HP Optical Bay HDD Mounting Bracket	Y	Y	NQ099AA
HP Z2 Tower HDD Cable Kit	N	Y	6Z9U6AA
HP Integrated Remote System Controller	Y	Y	7K6D9AA

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Supported Components

HP Remote System Controller Main Board Adapter	Y	Y	7K6D8AA
HP Remote System Controller	Y	Y	7K6D7AA
HP Remote System Controller for Universal KVM	N	Y	7K7N2AA

Racking and Physical Security	Factory Configured	Option Kit	Option Kit Part Number
HP Z2 Mini and Z2/Z4/Z6 TWR Depth Adjustable Fixed Rail Rack Kit	Y	Y	2A8Y5AA
HP Keyed Cable Lock	Y	Y	T1A62AA
HP Master Keyed Cable Lock 10mm	Y	Y	T1A63AA
HP Business PC Security Lock V3 Kit	Y	Y	3XJ17AA

Software	Factory Configured	Option Kit	Support Notes
HP Performance Advisor	Y	N	1
HP PC Hardware Diagnostics UEFI		N	3
HP Wolf Security	Y	N	
HP Notifications	Y	N	
HP Desktop Support Utility	Y	N	
HP Documentation	Y	N	
HP Image Assistant	N	N	
HP Support Assistant	N	N	
myHP	Y	N	
Kingsoft WPS Office	Y	N	4
My Office	Y	N	5
Adobe Substance 3D Collection Plan	N	Y	6
WSL2/Ubuntu Data Science Stack	Y	N	7
Wolf Pro Security			8
HP Manageability Integration Kit			

Notes:

1. Supports, and preinstalled with Windows 10 only. Also available as a free download from http://www.hp.com/go/performanceadvisor
2. Windows OS only
3. Not available in Russia
4. Only available in China
5. Only available in Russia
6. Not available in China
7. Optional Software
8. HP Wolf Pro Security Edition is available preloaded on select SKUs, and, depending on the HP product purchased, includes a license with a term length communicated to you at purchase and in your order confirmation email. The HP Wolf Pro Security Edition software is licensed under the license terms of the HP Wolf Security Software - End-User license Agreement (EULA) that can be found at: https://support.hp.com/us-en/document/ish_3875769-3873014-16 as that EULA is modified by the following: 7. Term. Unless otherwise terminated earlier pursuant to the terms contained in this EULA, the license for the HP Wolf Pro Security Edition is effective upon 4 months after the date the HP Product was shipped by HP and will continue for the term communicated to you at purchase and in your order confirmation email (“Initial Term”). At the end of the Initial

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Supported Components

Term you may either (a) purchase a renewal license for the HP Wolf Pro Security Edition from HP.com, HP Sales or an HP Channel Partner, or (b) continue using the standard versions of HP Sure Click and HP Sure Sense at no additional cost with no future software updates or HP Support. Notwithstanding the foregoing, the license shall expire no later than one year after the fixed term of the subject license ends.

Operating Systems

Windows 11 Pro – HP recommends Windows 11 Pro[2]

Windows 11 Home – HP recommends Windows 11 Pro[2]

Linux®-ready[5]

Ubuntu®[4,5]

- Intel 12th generation processors will support and preinstall Ubuntu 20.02 and 20.04.
- Intel 13th generation processors support and preinstall Ubuntu 22.04 LTS

[2] Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.

[4] Not all features are available in all editions or versions of Ubuntu. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS to take full advantage of Ubuntu functionality. Ubuntu may be automatically updated. ISP fees may apply and additional requirements may apply over time for updates.

[5]For detailed Linux® OS/hardware support information, see: http://www.hp.com/support/linux_hardware_matrix

NOTE: Your product does not support Windows 8 or Windows 7. In accordance with Microsoft's support policy, HP does not support the Windows® 8 or Windows 7 operating system on products configured with Intel® and AMD® 7th generation and forward processors or provide any Windows® 8 or Windows 7 drivers on http://www.support.hp.com. A full list of HP products and the Windows 10 versions tested is available on the HP support website. https://support.hp.com/us-en/document/c05195282

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HP BIOS

Additional HP BIOS Features:

- Power-On password – Helps prevent an unauthorized user from powering on the system.
- Administrator password – Also known as the BIOS Setup password, this helps prevent unauthorized changes to the system configuration. If the administrator password is not known, the BIOS cannot be updated and changes cannot be made to BIOS settings using BIOS Setup or under the OS.
- S4/S5 Maximum Power Savings setting supports EU Lot6 requirement and allows the computer to power down below 0.5W in S4/S5 (when turned off). When S4/S5 Maximum Power Savings feature is enabled below features are turned off:
  - -Power to expansion connectors / slots
  - -Most Wake events other than power buttons and WOL(Wake on LAN supported by embedded Lan controller under S4/S5 Maximum Power Saving Enabled)
  - -USB charging ports

HP Sure Start Gen7 Start

- BIOS Integrity checking – Sure Start protection ensures that only trusted BIOS code is executed and not rootkits, viruses and malware. Verification is done upon boot up, shutdown and while the system is on.
- Sure Start is set by default to automatically repair the BIOS if corrupted or compromised but is policy driven for better manageability. Start is set by default to automatically repair the BIOS if corrupted or compromised but is policy driven for better manageability.
- Protecting beyond BIOS – Integrity checking and repair is extended to other data that should be protected such as network configuration parameters, platform specific information (i.e. system IDs), secure boot credentials, and other code the system needs to boot.
- Audit enabled – System Audit via Sure Start Event Logs capture data such as incident, repair date and time for troubleshooting and investigating

NOTE: HP Sure Start Gen7 is available on HP Workstation products equipped with Intel® 12th generation processors.

HP Performance Control Modes

HP Z Desktop Workstations offers Performance Control Modes in the F10 BIOS menu. Z2 G9 offers Quiet Mode, Performance Mode and High-Performance Mode. HP recommends using High Performance Mode unless you have concerns about acoustics in an open office environment. Customers can get up to 41% performance improvements using High Performance Mode over Performance Mode*. High Performance Mode is configured as default from the factory.

How to Set HP Performance Control Modes in HP F10 BIOS Menu

In the F10 BIOS Menu, the setting titled “Performance Control” is adjustable to High Performance Mode, Performance Mode or Quiet Mode. These modes are choice points for performance and acoustic trade-offs based on user needs or recommended balanced conditions in performance and noise optimization.

At startup, push the F10 key while system is booting to get to the BIOS Menu.
Go to → Advanced -> System Options ->scroll down and choose “Performance Control”

Set the Performance Mode you desire and then go back to Main->Save Changes and Exit -> Yes
The machine will restart in the mode you’ve chosen.

How to change Performance Modes in HP Performance Advisor software?

Select BIOS Settings -> Advanced -> System Options -> Performance Controls

The machine will restart in the mode you’ve chosen.

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You can change these modes anytime you prefer to prioritize acoustics (Quiet Mode), want a balance between performance and acoustics (Performance Mode) or prefer to prioritize performance (High Performance Mode).

For more information on performance control modes, please see the white paper called, HP Performance Control Modes for Z Desktop Workstations.

*Compared to Performance Mode. Performance improvement based on Z2 Tower G9 with 64GB of memory, 1TB NVMe, Windows 11 22H2 OS, RTX A4000, i7-14700 CPU using Blender OpenData CPU Render and Arnold 2023 CPU multi-core benchmarking.

SOFTWARE COMPONENTS AND APPLICATIONS WITH WINDOWS

Software
HP Support Assistant [14]
HP Image Assistant
HP Desktop Support Utility
HP Documentation
HP Notifications
HP PC Hardware Diagnostics UEFI
HP PC Hardware Diagnostics Windows
HP Performance Advisor[1]
myHP
WSL/Ubuntu Data Science Stack
HP Privacy Settings
Touchpoint Customizer for Commercial

Manageability Features
HP Driver Packs[2]
HP UWP Pack
HP System Software Manager (SSM)
HP Manageability Integration Kit Gen4[3]
HP Client Catalog (download)
HP Image Assistant (download)
HP Cloud Recovery
HP Client Management Script Library (download)
HP BIOSphere Gen6 [13]
HP BIOS Configuration Utility (download)

Client Security Software
HP Client Security Suite Gen7[4] including: (including Credential Manager, HP Password Manager[6], HP Spare Key)
HP Power On Authentication
Microsoft Defender[7]

Security Management
HP Secure Erase [16]
HP Wolf Pro Security Edition (optional) [18]
HP Wolf Security for Business[22] Includes:
HP Sure Click[11]
HP Sure Sense[12]
HP Sure Run Gen5[9]
HP Sure Recover Gen4 [10]
HP Sure Start Gen7[8]

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Supported Components

HP Tamper Lock
HP Sure Admin [17]
HP Client Security Manager Gen 7[4]
Hood Sensor Optional Kit

[1] HP Performance Advisor Software - –P Performance Advisor is ready to help you get the most out of your HP Workstation from day one—and every day after. Learn more or download at: http://hp.com/PerformanceAdvisor

[2] HP Driver Packs not preinstalled, however available for download at http://www.hp.com/go/clientmanagement.

[3] HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html

[4] HP Client Security Manager Gen7 requires Windows and is available on the select HP PCs.

[6] HP Password Manager requires Internet Explorer or Chrome or FireFox. Some websites and applications may not be supported. User may need to enable or allow the add-on / extension in the internet browser.

[7] Microsoft Defender Opt in and internet connection required for updates.

[8] HP Sure Start Gen 7 is available on select HP PCs and workstations. See product specifications for availability.

[9] HP Sure Run Gen5 is available on select Windows 11 based HP Pro, Elite and Workstation PCs with select Intel® or AMD processors

[10] HP Sure Recover Gen4 is available on select HP PCs and requires Windows 10 and an open network connection. You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data. Network based recovery using Wi-Fi is only available on PCs with Intel Wi-Fi Module

[11] HP Sure Click requires Windows 10 Pro or higher or Enterprise. See https://bit.ly/2PrLT6A_SureClick for complete details.
[12] HP Sure Sense requires Windows 11 Pro or Enterprise and supports Microsoft Internet Explorer, Google Chrome™, and Chromium™. Supported attachments include Microsoft Office (Word, Excel, PowerPoint) and PDF files in read only mode, when Microsoft Office or Adobe Acrobat are installed.
[13] HP BIOSphere Gen6 features may vary depending on the platform and configurations.
[14] HP Support Assistant requires Windows and Internet access.
[16] Secure Erase - –or the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 “C“ear” ”anitation method. HP Secure Erase does not support platforms with Intel® Optane.
[17] HP Sure Admin requires Windows 11, HP BIOS, HP Manageability Integration Kit from http://www.hp.com/go/clientmanagement and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store.
[18] HP Wolf Pro Security Edition is available preloaded on select SKUs, and, depending on the HP product purchased, includes a license with a term length communicated to you at purchase and in your order confirmation email. The HP Wolf Pro Security Edition software is licensed under the license terms of the HP Wolf Security Software - End-User license Agreement (EULA) that can be found at: https://support.hp.com/us-en/document/ish_3875769-3873014-16 as that EULA is modified by the following: 7. Term. Unless otherwise terminated earlier pursuant to the terms contained in this EULA, the license for the HP Wolf Pro Security Edition is effective upon 4 months after the date the HP Product was shipped by HP and will continue for the term communicated to you at purchase and in your order confirmation email (“Initial Term”). At the end of the Initial Term you may either (a) purchase a renewal license for the HP Wolf Pro Security Edition from HP.com, HP Sales or an HP Channel Partner, or (b) continue using the standard versions of HP Sure Click and HP Sure Sense at no additional cost with no future software updates or HP Support. Notwithstanding the foregoing, the license shall expire no later than one year after the fixed term of the subject license ends.
[22] HP Wolf Security for Business requires Windows 10 or higher, includes various HP security features and is available on HP Pro, Elite, RPOS and Workstation products. See product details for included security features

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System Technical Specifications

System Board

System Board Form Factor	Customized PCB 36.056 x 25.130 mm (14.197 x 9.894 inch)
Processor Socket	Single LGA-1700
CPU Bus Speed	DMI Gen4
Chipset	Intel® PCH W680
Super I/O Controller	Nuvoton SIO21
Memory Expansion Slots	4 DDR5 memory slots
Memory Type Supported	DDR5, UDIMM (Unbuffered), ECC& non-ECC
Memory Modes	Non-Interleaved for single channel. Interleaved when both channels are populated.
Memory Speed Supported	3600MT/s to 4400MT/s DDR5, dependent on memory configuration[1]

[1]Though the memory modules can run up to 4800MHz, the current platform will only be able to support the maximum memory speed of 4400MHz.

The system speed will be determined by a number of key factors:

Module Configuration	Description of configuration	Max Memory Speed (Actual Memory speed is dependent on CPU)
Single DIMM per channel	Configurations that contain only one or two DIMM modules with DIMMs only in the black slots	4400MHz
Two single ranked DIMMs in a channel	Configurations with 3 or 4 single ranked DIMMs (8GB and 16GB) installed in a system	4000MHz
Two dual ranked DIMMs in a channel	Configurations with 3 or 4 dual ranked DIMMs (32GB) installed in a system	3600MHz

Memory Protection	ECC available on data
Maximum Memory	192GB
Memory Configuration (Supported)	8GB, 16GB, 32GB and 48GB non-ECC, 16GB and 32GB ECC unbuffered DIMMs are supported. ECC and non-ECC memory DIMMs cannot be mixed in the same system
PCI Express Connectors	(1) PCI Express Gen5 slot x16 mechanical/ x16 electrical (full height, full length) (1) PCI Express Gen3 slot x4 mechanical/ x1 electrical (full height, full length, open-ended) (1) PCI Express Gen3 slot x16 mechanical/ x4 electrical (full height, full length) (1) PCI Express Gen3 slot x4 mechanical/ x4 electrical (full height, full length, open-ended) (1) M.2 2280 Storage (PCIe Gen4 x4) (1) M.2 2280 Storage (PCIe Gen4 x4) (1) M.2 2280 Storage (PCIe Gen4 x4) (1) M.2 2230 WLAN (PCIe Gen3 x1+ Intel CNVi)

NOTE: The PCIe Gen5 x16 slot has validated and passed PCI-SIG electrical compliance test ONLY. HP does not guarantee and support any PCIe Gen5 cards available -in the open market. May or may not see performance reduced when device MRRS (Maximum Read Request Size) is 512Bytes and above. To reach highest Gen5 PCIe performance, Use the top bin DRAM module (e.g. 4400) to minimize the impact.

Supported Interfaces	**SATA**	Integrated (4) Serial ATA interfaces (6Gb/s SATA). RAID 0 and 1 supported. Factory integrated RAID for Microsoft Windows only.
	Integrated Graphics	Intel® UHD Graphics 730 (on Core i5-12400/i3-12300/i3-12100) processors); Intel® UHD Graphics 770 (on 13th and 14th gen Core i5/i7/i9 processors);

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		Based on Unified Memory Architecture (UMA) - – region of system memory is reserved and dedicated to the graphics display. Support for Microsoft DirectX 12, OpenGL 4.6 and OpenCL 3.0 on Intel® UHD Graphics 730/770; Based on Unified Memory Architecture (UMA) - – region of system memory is reserved and dedicated to the graphics display. 2 DP 1.4 graphics ports integrated in motherboard; Supports up to three simultaneous displays across DisplayPort*/HDMI*/DVI outputs. Max. resolution supported on onboard DP 1.4/HBR2 ports: 4096x2304 @ 60Hz, 24bpp Max. resolution supported on FlexIO DP 1.4/HBR3 port: 5120x3200 @60Hz, 24bpp
	Network Controller	Integrated Ethernet PHY Connection I219LM. Management capabilities: WOL, PXE 2.1 and AMT 16
	Serial	1 internal header (requires optional Serial Port and PS/2 Combo Kit with PCIe bracket)
	2nd Serial	1 internal header(requires optional Serial Port Adapter Kit)
USB Connector(s)	**Front**	2 Type-A SuperSpeed USB 10Gbps signaling rate port (charge supports up to 5V/2.1A); 2 Type-A SuperSpeed USB 10Gbps signaling rate port; 1 Type-C® SuperSpeed USB 20Gbps signaling rate port (optional, charge supports up to 5V/3A)
	Rear	3 High-speed USB 480Mbps signaling rate port; 1 Type-A SuperSpeed USB 5Gbps signaling rate port; 2 Type-A SuperSpeed USB 10Gbps signaling rate port; Flex I/O option: 1 SuperSpeed USB Type-C® 10Gbps signaling rate (Power Delivery 15W, Alt Mode DisplayPort); 1 Dual SuperSpeed USB Type-A 5Gbps signaling rate
	Internal	1 High-speed USB 480Mbps signaling rate header for SD Card Reader
HD Integrated Audio	Realtek ALC3205-VA2-CG, 2.0W internal mono speaker	
Flash ROM	Yes	
CPU Fan Header	Yes	
Memory Fan Header	None	
Chassis Fan Header	1 Rear System Chassis Fan Header, 1 Graphic chassis Fan Header.	
Front PCI Fan Header	None	
Front Control Panel/Speaker Header	Yes	
CMOS Battery Holder - – ithium	Yes	
Integrated Trusted Platform Module	Integrated TPM 2.0 (Infineon SLB9672) Convertible to FIPS 140-2 Certified mode through firmware v15.21	
Power Supply Headers	Yes	
Power Switch, Power LED & Hard Drive LED Header	Yes	
Clear Password Jumper	None	

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Keyboard/Mouse USB or PS/2 (option)

Power Supply 700W EPA92, 500W EPA90, 450W EPA90 and 350W EPA92

[1]Maximum memory capacities assume 64-bit operating systems, such as Genuine Windows® 10 Professional 64 bit, Red Hat Linux 64-bit. 32-bit Windows Operating Systems support up to 4 GB.

[2]M.2 storage supports compatible devices up to 80mm

PROCESSORS

Name	Ghz P-Core Base Frequency	Ghz E-Core Base Frequency	Up to X P-Core Max Turbo Freq	Up to x GHz E-Core Max Turbo Frequency	L3 Cache (MB)	P-Cores	E-Cores	Total Cores	Processor Threads	Memory Speed (MT/s) (DDR5)[4]	ECC Memory Supported[5]	Integrated Graphics	Featuring Intel® vPro® Technology[3]	TDP (W)	Max Turbo Frequency (GHz)
Intel 14th Generation Processors															
Intel® Core™ i9-14900K	3.2	2.40	5.6	4.4	36	8	16	24	32	5600	Y	Intel® UHD Graphics 770	Y	125	6
Intel® Core™ i9-14900	2	1.50	5.4	4.3	36	8	16	24	32	5600	Y	Intel® UHD Graphics 770	Y	65	5.8
Intel® Core™ i7-14700K	3.4	2.50	5.5	4.3	33	8	12	20	28	5600	Y	Intel® UHD Graphics 770	Y	125	5.6
Intel® Core™ i7-14700	2.1	1.50	5.3	4.2	33	8	12	20	28	5600	Y	Intel® UHD Graphics 770	Y	65	5.4
Intel® Core™ i5-14600K	3.5	2.60	5.3	4.2	24	6	8	14	20	5600	Y	Intel® UHD Graphics 770	Y	65	5.3
Intel® Core™ i5-14600	2.7	2.00	5.2	3.9	24	6	8	14	20	5600	Y	Intel® UHD Graphics 770	Y	65	5.2
Intel® Core™ i5-14500	2.6	1.80	5	3.7	24	6	8	14	20	4800	Y	Intel® UHD Graphics 770	Y	65	5.0
Intel® Core™ i5-14400	2.5	1.80	4.7	3.5	20	6	4	20	16	4800	N	Intel® UHD Graphics 730	N/A	65	4.7
Intel 13th Generation Processors															
Intel® Core™ i9-13900K	3	2.20	5.4	4.3	36	8	16	24	32	5600	Y	Intel® UHD Graphics 770	Y	125	5.8
Intel® Core™ i9-13900	2	1.50	5.2	4.2	36	8	16	24	32	5600	Y	Intel® UHD Graphics 770	Y	65	5.6
Intel® Core™ i7-13700K	3.4	2.50	5.3	4.2	30	8	8	16	24	5600	Y	Intel® UHD Graphics 770	Y	125	5.8
Intel® Core™ i7-13700	2.1	1.50	5.1	4.10	30	8	8	16	24	5600	Y	Intel® UHD Graphics 770	Y	65	5.2
Intel® Core™ i5-13600K	3.5	2.60	5.1	3.9	24	6	8	14	20	5600	Y	Intel® UHD Graphics 770	Y	65	5.1
Intel® Core™ i5-13600	2.7	2.00	5.0	3.7	24	6	8	14	20	4800	Y	Intel® UHD Graphics 770	Y	65	5.0
Intel® Core™ i5-13500	2.5	1.80	4.8	3.5	24	6	8	14	20	4800	Y	Intel® UHD Graphics 770	Y	65	4.8
Intel® Core™ i5-13400	2.5	1.80	4.6	3.3	20	6	4	10	16	4800	N	Intel® UHD Graphics 730	N/A	65	4.6
Intel 12th Generation Processors															
Intel® Core™ i9-12900	5	1.8	5.0	3.8	30	8	8	16	24	4800	Y	Intel® UHD Graphics 770	Y	65	5.1

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Intel® Core™ i7-12700	2.1	1.6	4.8	3.6	25	8	4	12	20	4800	Y	Intel® UHD Graphics 770	Y	65	4.9
Intel® Core™ i5-12600	3.3	N/A	4.8	N/A	18	6	0	6	12	4800	Y	Intel® UHD Graphics 770	Y	65	4.8
Intel® Core™ i3-12100	3.3	N/A	4.3	N/A	12	4	0	4	8	4800	N	Intel® UHD Graphics 730	N/A	60	4.3

[1] Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.

[3] Intel Turbo Boost performance varies depending on hardware, software and overall system configuration. See http://www.intel.com/technology/turboboost for more information.

[4] Intel vPro® requires Windows 10 Pro 64 bit or higher, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or Wi-Fi 6E WLAN and TPM 2.0. Some functionality requires additional 3rd Party software in order to run. Features of vPro® Essentials and Enterprise vary. See http://intel.com/vpro

[5] Memory will run at 4400 speed (MT/s) in 2DPC within 1DIMM population; memory will run at 4000 speed (MT/s) in 2DPC within 2DIMM of 1 Rank population and memory will run at 3600 speed (MT/s) in 2DPC within 2DIMM of 2 Rank population

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System Technical Specifications

System Configurations								
Example Configuration #1	**Processor Info**	Core i5-12500,6C 3.0G 65W						
	Memory Info	2 x 8G DDR5 4800 UDIMM NECC						
	Graphics Info	NVIDIA T400 4GB						
	Disks/Optical/Floppy	512GB SSD Z Turbo						
	PSU	350W						
	Other	NA						
Energy Consumption (Watts)		115 VAC		230 VAC		100 VAC		
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	
	Windows long Idle (S0)	17.866		17.912		17.804		
	Windows short Idle (S0)	18.926		19.024		18.883		
	Windows Busy Typ (S0)	160.167		155.973		161.10		
	Windows Busy Max (S0)	192.557		187.067		193.063		
	Sleep (S3)	1.367	1.259	1.401	1.367	1.259	1.401	
	Off (S5)	0.555	0.552	0.561	0.555	0.552	0.561	
	Zero Power Mode (EuP)	0.171		0.173		0.168		

Heat Dissipation (Btu/hr)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows Idle (S0)	60.959		61.116		60.747	
	Windows short Idle (S0)	64.576		64.91		64.429	
	Windows Busy Typ (S0)	546.489		532.181		549.707	
	Windows Busy Max (S0)	657.003		638.271		658.732	
	Sleep (S3)	4.664	4.296	4.78	4.664	4.296	4.78
	Off (S5)	1.894	1.883	1.914	1.894	1.883	1.914
	Zero Power Mode (EuP)	0.583		0.59		0.573	

Example Configuration #2	**Processor Info**	Core i7-12700,12C 2.1G 65W					
	Memory Info	2 x 16G DDR5 4800 UDIMM NECC					
	Graphics Info	NVIDIA T1000 8GB					
	Disks/Optical/Floppy	512GB SSD Z Turbo					
	PSU	450W					
	Other	NA					
Energy Consumption (Watts)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows long Idle (S0)	20.169		20.335		20.087	
	Windows short Idle (S0)	21.222		21.547		21.195	
	Windows Busy Typ (S0)	119.48		117.953		120.406	
	Windows Busy Max (S0)	157.13		155.03		157.833	
	Sleep (S3)	1.575	1.461	1.582	1.575	1.461	1.582
	Off (S5)	0.944	0.941	0.952	0.944	0.941	0.952
	Zero Power Mode (EuP)	0.204		0.207		0.202	

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Heat Dissipation (Btu/hr)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows Idle (S0)	68.817		69.383		68.537	
	Windows short Idle (S0)	72.409		73.518		72.317	
	Windows Busy Typ (S0)	407.666		402.457		410.824	
	Windows Busy Max (S0)	536.128		528.962		538.527	
	Sleep (S3)	5.374	4.985	5.398	5.374	4.985	5.398
	Off (S5)	3.221	3.211	3.248	3.221	3.211	3.248
	Zero Power Mode (EuP)	0.696		0.706		0.689	
Example Configuration #3	**Processor Info**	Core i9-12900,16C 2.4G 65W					
	Memory Info	2 x 16G DDR5 4800 UDIMM ECC					
	Graphics Info	NVIDIA RTX A2000					
	Disks/Optical/Floppy	512GB SSD Z Turbo					
	PSU	450W					
	Other	NA					
Energy Consumption (Watts)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows long Idle (S0)	22.555		23.324		22.484	
	Windows short Idle (S0)	23.414		24.656		23.397	
	Windows Busy Typ (S0)	159.883		156.853		161.463	
	Windows Busy Max (S0)	189.99		185.89		190.127	
	Sleep (S3)	1.585	1.492	1.694	1.585	1.492	1.694
	Off (S5)	0.952	0.95	1.083	0.952	0.95	1.083
	Zero Power Mode (EuP)	0.21		0.217		0.198	

Heat Dissipation (Btu/hr)		115 VAC		230 VAC		100 VAC	
		LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled	LAN Enabled	LAN Disabled
	Windows Idle (S0)	76.958		79.581		76.715	
	Windows short Idle (S0)	79.889		84.126		79.831	
	Windows Busy Typ (S0)	545.522		535.184		550.913	
	Windows Busy Max (S0)	648.246		634.257		648.712	
	Sleep (S3)	5.408	5.091	5.78	5.408	5.091	5.78
	Off (S5)	3.248	3.241	3.695	3.248	3.241	3.695
	Zero Power Mode (EuP)	0.717		0.74		0.676	

NOTE: The Power Supply Efficiency report may be found at the following links:
https://www.plugloadsolutions.com/80PlusPowerSuppliesDetail.aspx?id=0&type=2

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Operating Voltage Range	90-269 VAC
Rated Voltage Range	100-240 VAC
Rated Line Frequency	50-60 Hz
Operating Line Frequency Range	47-63 Hz
Rated Input Current	8.2A @ 100-240V
Heat Dissipation	Typical: 1598.101 btu/hr (402.984 kcal/hr) Maximum: 1619.608 btu/hr (408.407 kcal/hr)
ENERGY STAR® certified (Config Dependent)	Yes
CECP Compliant @ 220V	Yes
FEMP Standby Power Compliant	Yes, with Wake-on-LAN disabled: <1W in S4/S5 - –ower Off
Built-in Self Test (BIST) **LED**	Yes
Surge Tolerant Full Ranging Power Supply (withstands power surges up to 2000V)	Yes
Hood Lock Header	Yes
ErP Lot 6- Tier 1 Compliance @ 230V (<1W in S5 - –ower Off)	Yes
ErP Lot 6- Tier 2 Compliance @ 230V (<0.5W in S5 - –ower Off)	Yes

Declared Noise Emissions (Entry-level, Mid-level, and High-end configurations; tested on floor)			
System Configuration (Mid-level)	**Processor Info**	Intel® CPU Core i9-12900 16C LGA 2.40G 30 MB 65W ECC (Intel - –lder Lake-S)	
	Memory Info	4* 32GB 4800 SK hynix memory	
	Graphics Info	NVIDIA® RTX A5000	
	Disks/Optical	3*2TB Samsung M.2 SSD; 2*WD 2TB 7200RPM SATA HDD	
	Power Supply	Chicony 700W EPA92	
Declared Noise Emissions		**Sound Power** (LWAd, bels)	**Deskside Sound Pressure** (LpAm, decibels)
	Idle	3.59	18.5
	Hard drive Operating (Drive Random Seek)	3.82	20.1
	Hard drive Operating (Active mode)	3.97	23.6
System Configuration (High-end)	**Processor Info**	Intel® Core i9-12900K 16C 3.20G LGA 30 MB 125W ECC (Intel - –lder Lake-S)	
	Memory Info	4* 32GB 4800 SK hynix memory	
	Graphics Info	NVIDIA® RTX A5000	
	Disks/Optical	3*2TB Samsung M.2 SSD; 2*WD 2TB 7200RPM SATA HDD	
	Power Supply	Chicony 700W EPA92	

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System Technical Specifications

Declared Noise Emissions		**Sound Power** (LWAd, bels)	**Deskside Sound Pressure** (LpAm, decibels)
	Idle	3.58	18.2
	Hard drive Operating (Drive Random Seek)	3.78	20
	Hard drive Operating (Active mode)	4.05	20.9

Environmental Requirements	**Temperature**	Operating: 5° to 35° C (40° to 95° F) Non-operating: -40° to 60° C (-40° to 140° F) Maximum rate of change: 10°C/hr
	Humidity	Operating: 8% to 85% RH, non- condensing, 35° C maximum wet bulb Non-operating: 8% to 90% relative humidity, non-condensing, 35° C maximum wet bulb
	Maximum Altitude	Operating (with Rotational Hard Drives): 3,048 m (10,000 feet) Operating (with only Solid-State Drives): 5,000 m (16,404 feet) Non-operating: 12,192 m (40,000 feet) Maximum operating temperature is reduced as altitude increases. See Cooling for details.
	Dynamic	Shock Operating: ½-sine: 40g, 2-3ms (~62 cm/sec) Non-operating: ½-sine: 160 cm/s, 2-3ms (~105g) square: 422 cm/s, 20g Vibration Operating random: 0.5g (rms), 5-300 Hz, up to 0.0025g²/Hz Non-operating random: 2.0g (rms), 5-500 Hz, up to 0.0150 g²/Hz
	Cooling	Above 1524 m (5,000 feet) altitude, the maximum operating temperature is reduced by 1° C (1.8° F) for every 305 m (1,000 feet) increase in elevation, up to 3048 m (10,000 feet)
	NOTE:	System enduring or operating beyond the environmental requirement range is not recommended and may compromise system reliability permanently.

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System Technical Specifications

Physical Security and Serviceability

Access Panel	Tool-less Includes support information
Optical Drive	Tool-less, except for Screw-In carrier
Hard Drives	Tool-less, except for 2.5” ”bay
Expansion Cards	Tool-less
Processor Socket	Tool-less, except for the processor heatsink
Blue User Touch Points	Yes, on tool-less internal chassis mechanisms
Color-coordinated Cables and Connectors	Yes
Memory	Tool-less
System Board	Screw-In
Padlock Support	Yes (optional): Locks side cover and secures chassis from theft 0.22-in diameter padlock loop at rear of system
Cable Lock Support	Yes, Kensington Cable Lock (optional): Locks side cover and secures chassis from theft 3 mm x 7 mm slot at rear of system
Universal Chassis Clamp Lock Support	Yes (optional): Locks side cover and locks cables to chassis. Secures chassis from theft and allows multiple units to be chained together when used with optional cable Threaded feature at rear of system
Solenoid Lock and Hood Sensor	Yes (optional) The Solenoid Hood Lock eliminates the need for a physical key by making the chassis lockable through software and a password. You can also lock and unlock the chassis remotely over the network. The Sensor Kit detects when the access panel has been removed.
Rear Port Control Cover	No
CPUs and Heatsinks	A T-15 Torx or flat blade screwdriver is needed to remove the CPU heatsink before the CPU can be removed. CPU removal is tool-less
Internal Speaker	Yes
Power Supply Fans	70mm x 70mm x 25mm 4-wire PWM (non-serviceable)
Access Panel Key Lock	No
Integrated Chassis Handles	Rear Recessed Handle
Power Supply	Requires T15 Torx or flat blade screwdriver
PCI Card Retention	Yes, rear (all), middle (optional), front (full-length cards with extender)

Service, Support, and Warranty

On-site Warranty and Service[1]: Three-years, limited warranty and service offering delivers on-site, next business-day[2] service for parts and labor and includes free telephone support[3] 8am - –pm. Global coverage[2] ensures that any product purchased in one country and transferred to another, non-restricted country will remain fully covered under the original warranty and service offering. 24/7 operation will not void the HP warranty. Storage devices are not covered under warranty for 24/7 operation except for Enterprise class HDDs.

NOTE 1: Terms and conditions may vary by country. Certain restrictions and exclusions apply.
NOTE 2: On-site service may be provided pursuant to a service contract between HP and an authorized HP third-party provider, and is not available in certain countries. Global service response times are based on commercially reasonable best effort and may vary by country.
NOTE 3: Technical telephone support applies only to HP-configured, HP and HP-qualified, third-party hardware and software. Toll-free calling and 24x7 support service may not be available in some countries.
HP Care Pack Services extend service contracts beyond the standard warranties. Service starts from date of hardware purchase. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at:

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http://www.hp.com/go/lookuptool. Service levels and response times for HP Care Packs may vary depending on your geographic location.

Certification and Compliance

Environmental Sustainability questions concerning:

- Ecolabels (EPEAT, TCO, etc.)
- ENERGY STAR, California Energy Commission (CEC)
- Compliance with Environmental legislation (EU ErP, China CECP, EU RoHS and other countries)
- Supply Chain Social Environmental Responsibility (SER) (conflict minerals; human rights, etc.)
- Product specific environmental features (material content, packaging content, recycled content, etc.)
- China Energy Label (CEL)
-

Please contact sustainability@hp.com

For country specific Regulatory Compliance approval documents or Regulatory and Safety questions concerning:

- Declarations of Conformity (for self-service, go to https://www.hp.com/uk-en/certifications/technical/regulations-certificates.html?jumpid=ex_r135_uk/en/any/corp/hpuk-mu_chev/certificates)
- GS Certificates
- Product Safety Certificates (UL, CB, BIS, etc.)
- EMC Certificates, Declarations of Conformity, or Certificates of Conformity (CE, FCC, ICES, etc.)
- CCC Certificates
- Ergonomics
-

Please contact techregshelp@hp.com

BIOS

BIOS 64-bit Services	BIOS supports 64-bit Operating systems only.
PCI 3.0 Support	Full BIOS support for PCI Express through industry standard interfaces.
ATAPI	ATAPI Removable Media Device BIOS Specification Version 1.0.
BBS	BIOS Boot Specification v1.01.(Not support)
WMI Support	WMI is Microsoft's'implementation of Web-Based Enterprise Management (WBEM) for Windows. WMI is fully compliant with the Distributed Management Task Force (DMTF) Common Information Model (CIM) and WBEM specifications.
BIOS Boot Spec 1.01+	Provides more control over how and from what devices the workstation will boot.(Not Support)
BIOS Power On	Users can define a specific date and time for the system to power on.
ROM Based Computer Setup Utility (F10)	Review and customize system configuration settings controlled by the BIOS.
System/Emergency ROM Flash Recovery with Video	Recovers system BIOS in corrupted Flash ROM.
Replicated Setup	Saves BIOS settings to USB flash device in human readable file (HpSetup.txt). BiosConfigurationUtility.exe utility can then replicate these settings on machines being deployed without entering Computer Configuration Utility (F10 Setup).
SMBIOS	System Management BIOS 3.4, for system management information.
Boot Control	Disables the ability to boot from removable media on supported devices.
Memory Change Alert	Alerts management console if memory is removed or changed.
Thermal Alert	Monitors the temperature state within the chassis. Three modes: • NORMAL - –ormal temperature ranges. • ALERTED - –xcessive temperatures are detected. Raises a flag so action can be taken to avoid

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	shutdown or provide for a smoother system shutdown. • SHUTDOWN - –xcessive temperatures are encountered. Automatically shuts down the computer without warning before hardware component damage occurs.
Remote ROM Flash	Provides secure, fail-safe ROM image management from a central network console.
ACPI (Advanced Configuration and Power Management Interface)	Allows the system to enter and resume from low power modes (sleep states). Enables an operating system to control system power consumption based on the dynamic workload. Makes it possible to place individual cards and peripherals in a low-power or powered-off state without affecting other elements of the system. Supports ACPI 6.0 for full compatibility with 64-bit operating systems.
Ownership Tag	A user-defined string stored in non-volatile memory that is displayed in the BIOS splash screen.
Remote Wakeup/Remote Shutdown	System administrators can power on, restart, and power off a client computer from a remote location.
Instantly Available PC (Suspend to RAM - –CPI sleep state S3)	Allows for very low power consumption with quick resume time.
Remote System Installation via F12 (PXE 2.1) (Remote Boot from Server)	Allows a new or existing system to boot over the network and download software, including the operating system.
ROM revision levels	Reports the system BIOS revision level in Computer Configuration Utility (F10 Setup). Version is available through an industry standard interface (SMBIOS and WMI) so that management SW applications can use and report this information.
System board revision level	Allows management SW to read revision level of the system board. Revision level is digitally encoded into the HW and cannot be modified.
Start-up Diagnostics (Power-on Self-Test)	Assesses system health at boot time with selectable levels of testing.
Auto Setup when new hardware installed	System automatically detects addition of new hardware.
Keyboard-less Operation	The system can be booted without a keyboard.
Localized ROM Setup	Common BIOS image supports System Configuration Utility (F10 Setup) menus in 15 languages with local keyboard mappings.
Asset Tag	The user or MIS to set a unique tag string in non-volatile memory.
Per-slot Control	Allows I/O slot parameters (option ROM enable/disable, bus latency) to be configured individually.
Adaptive Cooling	Control parameters are set according to detected hardware configuration for optimal acoustics.
Pre-boot Diagnostics	(Pre-video) critical errors are reported via beeps and blinks on the power LED.
UEFI Specification Revision	2.7B
ACPI	Advanced Configuration and Power Management Interface, Version 6.0
ATA (IDE)	AT Attachment 6 with Packet Interface (ATA/ATAPI-6), Revision 3b
CD Boot	“E“ Torito” ”ootable CD-ROM Format Specification Version 1.0
EDD	Enhanced Disk Drive Specification Version 1.1 BIOS Enhanced Disk Drive Specification Version 3.0(Not support)
EHCI	Enhanced Host Controller Interface for Universal Serial Bus, Revision 1.0
PCI	PCI Local Bus Specification, Revision 2.3 PCI Power Management Specification, Revision 1.1 PCI Firmware Specification, Revision 3.0, Draft .7
PCI Express	PCI Express Base Specification, Revision 2.0 PCI Express Base Specification, Revision 3.0 PCI Express Base Specification, Revision 4.0 PCI Express Base Specification, Revision 5.0 Ready
PMM	POST Memory Manager Specification, Version 1.01

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System Technical Specifications

SATA	Serial ATA Specification, Revision 1.0a Serial ATA 3 Gb/s: Serial ATA Specification, Revision 2.5 Serial ATA 6 Gb/s: Serial ATA Specification, Revision 3.0
SPD	JEDEC JESD300-5
TPM	Trusted Computing Group TPM Specification Version 2.0 (Infineon SLB 9670). Common Criteria EAL4+ certified. FIPS 140-2 Certification TCG TPM Certified products list: http://www.trustedcomputinggroup.org/certification/tpm-certified-products/
UHCI	Universal Host Controller Interface Design Guide, Revision 1.1
USB	Universal Serial Bus Revision 1.1 Specification Universal Serial Bus Revision 2.0 Specification Universal Serial Bus Revision 3.1 Specification Universal Serial Bus Revision 3.2 Specification
SMBIOS	System Management BIOS Reference Specification, Version 3.4 External BIOS simulator found at: http://csrsml.itcs.hp.com/

Social and Environmental Responsibility

Eco-Label Certifications & Declarations

This product is low halogen except for configurations that include HP Z Turbo Quad Pro PCIe TLC SSD, CRU QX 428 & QX448 removable storage frames, ConnectX-6 DX Amphenol 10 & 25 Gb Transceivers, Broadcom 5720-2P NIC Card, power cords, cables, and peripherals. Service parts obtained after purchase may not be Low Halogen.

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

- IT ECO declaration
- US ENERGY STAR®
- US Federal Energy Management Program (FEMP)
- EPEAT® Gold with Climate+ registered. See www.epeat.net for registration status and tier levels by country
- TCO Certified configurations available
- China Energy Conservation Program (CECP)
- China State Environmental Protection Administration (SEPA)
- Taiwan Green Mark
- Korea Eco-label
- Japan PC Green label*

Sustainable Impact Specifications

- Product Carbon Footprint (hp.com)
- Ocean-bound plastic in System FAN, CPU FAN and Speaker
- 50% post-consumer recycled plastic
- Low halogen PCAs
- Outside Box and corrugated cushions are 100% sustainably sourced and recyclable
- Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable
- 10% ITE-derived closed loop plastic
- Bulk packaging available
- Contains recycled metal
- 80 Plus® Gold power supplies available

System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.

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System Technical Specifications

Energy Consumption (in accordance with US ENERGY STAR® test method)	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Sort idle)	34.16 W	34.01 W	34.39 W
Normal Operation (Long idle)	32.77 W	32.74 W	33.15 W
Sleep	2.57 W	2.54 W	2.57 W
Off	0.67 W	0.68 W	0.67 W

NOTE:
Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family . HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.

Heat Dissipation*	115VAC, 60Hz	230VAC, 50Hz	100VAC, 50Hz
Normal Operation (Short idle)	116.8 BTU/hr	116.3 BTU/hr	117.6 BTU/hr
Normal Operation (Long idle)	112.1 BTU/hr	112 BTU/hr	113.4 BTU/hr
Sleep	8.8 BTU/hr	8.7 BTU/hr	8.8 BTU/hr
Off	2.3 BTU/hr	2.3 BTU/hr	2.3 BTU/hr

***NOTE:** Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

Longevity and Upgrading

This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the

Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.

Additional Information

- This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC.
- This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC.
- This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).
- This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see www.epeat.net
- Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043.
- This product is 94.8% recycle-able when properly disposed of at end of life.

Packaging Materials

External:	PAPER/Corrugated	1214 g
	PAPER/Molded Pulp	890 g
Internal:	PLASTIC/Polyethylene low density - – DPE	40 g

The plastic packaging material contains at least 0.0% recycled content.

The corrugated paper packaging materials contains at least 62.5% recycled content.

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System Technical Specifications

RoHS Compliance

HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam.

We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products.

We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will continue to extend the scope of the commitment to include further restricted substances as regulations continue to evolve.

To obtain a copy of the HP RoHS Compliance Statement, see HP RoHS position statement.

Material Usage

This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Bis(2-Ethylhexyl) phthalate (DEHP)
- Benzyl butyl phthalate (BBP)
- Dibutyl phthalate (DBP)
- Diisobutyl phthalate (DIBP)
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user.
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)

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System Technical Specifications

Packaging Usage

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

End-of-life Management and Recycling

HP offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

HP, Inc. Corporate Environmental Information

For more information about HP's commitment to the environment:

Global Citizenship Report
http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html
Eco-label certifications
http://www8.hp.com/us/en/hp-information/environment/ecolabels.html
ISO 14001 certificates:
http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842
and
http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf

footnotes

- Percentage of ocean-bound plastic contained in each component varies by product
- Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.
- External power supplies, WWAN modules, power cords, cables and peripherals excluded.
- 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers.
- Fiber cushions made from 100% recycled wood fiber and organic materials.

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Technical Specifications - Hard Drives

SATA Hard Drives for HP Workstations	**500GB SATA 7200 rpm 6Gb/s 3.5" "DD**	**Capacity**	500GB	
"		**Protocol**	SATA	
		Controller	AHCI	
		Height	1 in; 2.54 cm	
		Width	**Media Diameter**	3.5 in; 8.9 cm
			Physical Size	4 in; 10.17 cm
		Interface	Serial ATA (6.0Gb/s), NCQ enabled	
		Synchronous Transfer Rate (Maximum)	Up to 600MB/s *	
		Buffer	32MB	
		Seek Time (typical reads, includes controller overhead, including settling)	**Single Track**	2 ms *
			Average	11 ms *
			Full Stroke	21 ms *
		Rotational Speed	7,200 rpm	
		Logical Blocks	976,773,168	
		Operating Temperature	41° to 131° F (5° to 55° C)	

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

	1TB SATA 7200 rpm 6Gb/s 3.5" "DD	**Capacity**	1TB	
		Protocol	SATA	
"		**Controller**	AHCI	
		Height	1 in; 2.54 cm	
		Width	**Media Diameter**	3.5 in; 8.9 cm
			Physical Size	4 in; 10.17 cm
		Interface	Serial ATA (6.0Gb/s), NCQ enabled	
		Synchronous Transfer Rate (Maximum)	Up to 600 MB/s *	
		Buffer	64MB	
		Seek Time (typical reads, includes controller overhead, including settling)	**Single Track**	2 ms *
			Average	11 ms *
			Full Stroke	21 ms *
		Rotational Speed	7,200 rpm	
		Logical Blocks	1,953,525,168	
		Operating Temperature	41° to 131° F (5° to 55° C)	

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

	2TB SATA 7200 rpm 6Gb/s 3.5" "DD	**Capacity**	2TB	
		Protocol	SATA	
"		**Controller**	AHCI	
		Annualized Failure Rate (based on Rated POH)	<0.62%	
		Height	1 in; 2.54 cm	
		Width	**Media Diameter**	3.5 in; 8.9 cm

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		Physical Size	4 in; 10.17 cm
	Interface	Serial ATA (6.0 Gb/s), NCQ Enabled	
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s *	
	Buffer	64MB	
	Seek Time (typical reads, includes controller overhead, including settling)	**Single Track**	2.0 ms *
		Average	11 ms *
		Full Stroke	21 ms *
	Rotational Speed	7,200 rpm	
	Logical Blocks	3,907,029,168	
	Operating Temperature	41° to 131° F (5° to 55° C)	

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

1TB SATA 7200 rpm 6Gb/s 3.5" "DD (Enterprise Class)	**Capacity**	1TB	
	Height	1 in; 2.54 cm	
	Protocol	SATA	
	Controller	AHCI	
	Reliability	2.0M hours	
	Rated Power On Hours	8760/yr	
	Annualized Failure Rate (based on Rated POH)	<0.62%	
	Width	**Media Diameter**	3.5 in; 8.9 cm
		Physical Size	4 in; 10.17 cm
	Interface	Serial ATA (6.0 Gb/s), NCQ Enabled	
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s *	
"	**Buffer**	128MB	
	Seek Time (typical reads, includes controller overhead, including settling)	**Single Track**	0.32ms*
		Average	7.45ms*
		Full Stroke	14.2ms*
	Rotational Speed	7,200 rpm	
	Operating Temperature	41° to 140° F (5° to 60° C)	
	Performance	**Sequential Read**	up to 226MB/s*
		Sequential Write	up to 226MB/s*
	Enterprise Class Features	High Reliability	

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

2TB SATA 7200 rpm 6Gb/s 3.5" "DD (Enterprise Class)	**Capacity**	2TB
	Protocol	SATA
	Controller	AHCI
"	**Reliability (MTBF)**	2.0M hours
	Rated Power On Hours	8760/yr

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Technical Specifications - Hard Drives

Annualized Failure Rate (based on Rated POH)	<0.62%	
Rated for 24/7/365 Operation		
Physical Size (Height)	1 in; 2.54 cm	
Physical Size (Width)	4 in; 10.17 cm	
Media Diameter	3.5 in; 8.9 cm	
Interface	Serial ATA (6Gb/s), NCQ enabled	
Synchronous Transfer Rate (Maximum)	Up to 600MB/s*	
Buffer	128MB	
Seek Time (typical reads, includes controller overhead, including settling)	**Single Track**	0.7ms*
	Average	8.5ms*
	Full Stroke	15.7ms*
Rotational Speed	7,200 rpm	
Operating Temperature	41° to 131° F (5° to 55° C)	
Performance	**Sequential Read**	up to 226MB/s*
	Sequential Write	up to 226MB/s*
Enterprise Class Features	High Reliability	

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

4TB SATA 7200 rpm 6Gb/s 3.5" "DD (Enterprise Class)	**Capacity**	4TB
	Protocol	SATA
	Controller	AHCI
	Reliability	2.0M hours
	Rated Power On Hours	8760/yr
	Annualized Failure Rate (based on Rated POH)	<0.62%
	Rated for 24/7/365 Operation	
	Physical Size (Height)	1 in; 2.54 cm
	Physical Size (Width)	4 in; 10.17 cm
	Media Diameter	3.5 in; 8.9 cm
	Physical Size	4 in; 10.17 cm
"	**Interface**	Serial ATA (6Gb/s), NCQ enabled
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s*
	Buffer	256MB
	Seek Time (typical reads, includes controller overhead, including settling)	**Single Track** 0.7ms*
		Average 8.5ms*
		Full Stroke 15.7ms*
	Rotational Speed	7,200 rpm
	Operating Temperature	41° to 131° F (5° to 55° C)

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	Performance	**Sequential Read**	up to 226MB/s*
		Sequential Write	up to 226MB/s*
	Enterprise Class Features	High Reliability	

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

8TB SATA 7200 rpm 6Gb/s 3.5" "DD (Enterprise Class)	**Capacity**	8TB	
	Protocol	SATA	
	Controller	AHCI	
	Reliability	2.0M hours	
	Width	**Media Diameter**	3.5 in; 8.9 cm
		Physical Size	4 in; 10.17 cm
	Interface	Serial ATA (6Gb/s), NCQ enabled	
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s*	
	Buffer	256MB	
	Seek Time (typical reads, includes controller overhead, including settling)	**Single Track**	0.7ms*
		Average	8.5ms*
		Full Stroke	15.7ms*
	Rotational Speed	7,200 rpm	
	Operating Temperature	41° to 140° F (5° to 60° C)	
	Performance	**Sequential Read**	up to 226MB/s*
		Sequential Write	up to 226MB/s*
	Enterprise Class Features	High Reliability	

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

500GB SATA 7.2K SED 2.5" "DD	**Capacity**	500GB	
	Protocol	SATA	
	Height	0.275 in; 0.7 cm	
	Width	Media Diameter	2.5 in; 6.36 cm
		Physical Size	2.75 in; 6.99 cm
	Interface	Serial ATA (6.0Gb/s), NCQ enabled	
	Synchronous Transfer Rate (Maximum)	Up to 600MB/s*	
	Buffer	64MB	
	Seek Time (typical reads, includes controller overhead, including settling)	**Single Track**	1ms*
		Average	4.2ms*
		Full Stroke	25ms (Typical)*
	Rotational Speed	7,200 rpm	
	Operating Temperature	32° to 131° F (0° to 60° C)	
	Self-Encrypting Drive Support	Yes	

"

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Technical Specifications - Hard Drives

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv PCIE-4X4 512GB TLC PCIe SSD (Z2G9)	**Capacity**	512GB	
	Protocol	PCIe	
	Form Factor	M.2 in native Slot on motherboard	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	150TBW (TB Written)	
	Reliability (MTBF)	1.5M hours	
	Interface	PCI Express 4.0 x4 electrical	
	Operating Temperature	32° to 178° F (0° to 81° C)	
	Performance	**Sequential Read**	6400MB/s*
		Sequential Write	3400MB/s*
		Random Read	600K IOPS*
		Random Write	600K IOPS*

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv PCIE-4X4 1TB TLC PCIe SSD (Z2G9)	**Capacity**	1TB	
	Protocol	PCIe	
	Form Factor	M.2 in native Slot on motherboard	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	300TBW (TB Written)	
	Reliability	1.5M Hours	
	Interface	PCI Express 4.0 x4 electrical	
	Operating Temperature	32° to 178° F (0° to 81° C)	
	Performance	**Sequential Read**	6500MB/s*
		Sequential Write	5000MB/s*
		Random Read	800K IOPS*
		Random Write	800K IOPS*

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv PCIE-4X4 2TB TLC PCIe SSD (Z2G9)	**Capacity**	2TB
	Protocol	PCIe
	Form Factor	M.2 in native Slot on motherboard
	Controller	NVMe
	NAND Type	3D TLC
	Endurance	500TBW (TB Written)
	Reliability	1.5M Hours
	Interface	PCI Express 4.0 x4 electrical

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	Operating Temperature	32° to 178° F (0° to 81° C)	
	Performance	**Sequential Read**	6500MB/s*
		Sequential Write	5000MB/s*
		Random Read	800K IOPS*
		Random Write	800K IOPS*

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv PCIE-4X4 4TB TLC PCIe SSD	**Capacity**	4TB	
	Protocol	PCIe	
	Form Factor	M.2 in native Slot on motherboard	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	600TBW (TB Written)	
	Reliability (MTBF)	1.5M Hours	
	Interface	PCI Express 4.0 x4 electrical	
	Operating Temperature	32° to 178° F (0° to 81° C)	
	Performance	**Sequential Read**	6500MB/s*
		Sequential Write	5000MB/s*
		Random Read	700K IOPS*
		Random Write	700K IOPS*

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv PCIE Gen4x4 4TB TLC PCIe SED OPAL2	**Capacity**	4TB	
	Protocol	PCIe	
	Form Factor	M.2 in native Slot on motherboard	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	600TBW (TB Written)	
	Interface	PCI Express 4.0 x4 electrical	
	Operating Temperature	32° to 178° F (0° to 81° C)	
	Performance	**Sequential Read**	6500MB/s*
		Sequential Write	5000MB/s*
		Random Read	700K IOPS*
		Random Write	700K IOPS*
	Self-Encrypting Drive Support	OPAL2	

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv 512GB	**Capacity**	512GB
	Protocol	PCIe

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Technical Specifications - Hard Drives

TLC PCIe SED OPAL2 (Z2G9)	**Form Factor**	M.2 in native Slot on motherboard	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	150TBW (TB Written)	
	Reliability	1.5M Hours	
	Interface	PCI Express 4.0 x4 electrical	
	Operating Temperature	32° to 178° F (0° to 81° C)	
	Performance	**Sequential Read**	6400MB/s*
		Sequential Write	3400MB/s*
		Random Read	600K IOPS*
		Random Write	600K IOPS*
	Self-Encrypting Drive Support	OPAL2	

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv 1TB TLC PCIe SED OPAL2 (Z2G9)	**Capacity**	1TB	
	Protocol	PCIe	
	Form Factor	M.2 in native Slot on motherboard	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	300TBW (TB Written)	
	Reliability	1.5M Hours	
	Interface	PCI Express 4.0 x4 electrical	
	Operating Temperature	32° to 178° F (0° to 81° C)	
	Performance	**Sequential Read**	6500MB/s*
		Sequential Write	5000MB/s*
		Random Read	800K IOPS*
		Random Write	800K IOPS*
	Self-Encrypting Drive Support	OPAL2	

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

HP Z Turbo Drv 2TB TLC PCIe SED OPAL2 (Z2G9)	**Capacity**	2TB	
	Protocol	PCIe	
	Form Factor	M.2 in native Slot on motherboard	
	Controller	NVMe	
	NAND Type	3D TLC	
	Endurance	500TBW (TB Written)	
	Reliability	1.5M Hours	
	Interface	PCI Express 4.0 x4 electrical	
	Operating Temperature	32° to 178° F (0° to 81° C)	
	Performance	**Sequential Read**	6500MB/s*

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		Sequential Write	5000MB/s*
		Random Read	800K IOPS*
		Random Write	800K IOPS*
	Self-Encrypting Drive Support		OPAL2

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

256GB 2280 PCIe-4x4 Value M.2 SSD	**Capacity**		256GB
	Protocol		PCIe
	Form Factor		M.2 in native Slot on motherboard
	Controller		NVMe
	NAND Type		3D TLC
	Endurance		150TBW (TB Written)
	Reliability		1.5M Hours
	Interface		PCI Express 4.0 x4 electrical
	Operating Temperature		32° to 158° F (0° to 70° C)
	Performance	**Sequential Read**	3100MB/s*
		Sequential Write	1400MB/s*
		Random Read	200K IOPS*
		Random Write	400K IOPS*

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

512GB 2280 PCIe-4x4 Value M.2 SSD	**Capacity**		512GB
	Protocol		PCIe
	Form Factor		M.2 in native Slot on motherboard
	Controller		NVMe
	NAND Type		3D TLC
	Endurance		300TBW (TB Written)
	Reliability		1.5M Hours
	Interface		PCI Express 4.0 x4 electrical
	Operating Temperature		32° to 158° F (0° to 70° C)
	Performance	**Sequential Read**	3400MB/s*
		Sequential Write	2500MB/s*
		Random Read	380K IOPS*
		Random Write	430K IOPS*

*Actual performance may vary.
NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

1TB 2280 PCIe-4x4 Value M.2 SSD	**Capacity**	1TB
	Protocol	PCIe
	Form Factor	M.2 in native Slot on motherboard
	Controller	NVMe

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Technical Specifications - Hard Drives

NAND Type	3D TLC	
Endurance	400TBW (TB Written)	
Reliability	1.5M Hours	
Interface	PCI Express 4.0 x4 electrical	
Operating Temperature	32° to 158° F (0° to 70° C)	
Performance	**Sequential Read**	3400MB/s*
	Sequential Write	2500MB/s*
	Random Read	500K IOPS*
	Random Write	440K IOPS*

*Actual performance may vary.

NOTE: For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 36GB of system disk (for Windows) is reserved for system recovery software.

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Technical Specifications - Graphics

AMD Radeon™ Pro W6600 8GB Graphics	**Form Factor**	Single slot, full-height, 9.5” length
	Graphics Controller	Navi23 architecture Power: 122 Watts Cooling Solution: Active Fan Heatsink
	Bus Type	PCI Express 4.0 x8
	Memory	8GB GDDR6 Memory Memory Bandwidth: 224 GB/s Memory Interface: 128 bit
	Connectors	4x DisplayPort™ 1.4 with DSC - HDR Ready - Supports Multi-Stream Transport (MST)
	Max simultaneous displays	@ 60Hz with HDR Enabled 4x @ 3840x2160px (4K) 4x @ 5120x2880px (5K) 1x @ 7680x4320px (8K)
	Shading Architecture	DirectX 12 Shader Model 6.5
	Supported Graphics APIs	DirectX®12 Ultimate OpenGL® 4.6 OpenCL™ 2.1 Vulkan™ 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
AMD Radeon™ Pro W6800 32GB Graphics	**Form Factor**	Double slot, full-height, 10.5” length
	Graphics Controller	Navi21 architecture Power: 261 Watts Cooling Solution: Active Fan Heatsink
	Bus Type	PCI Express 4.0 x16
	Memory	8GB GDDR6 Memory Memory Bandwidth: 512 GB/s Memory Interface: 256 bit
	Connectors	6x Mini-DisplayPort™ 1.4 with DSC - HDR Ready - Supports Multi-Stream Transport (MST)
	Max simultaneous displays	@ 60Hz with HDR Enabled 6x @ 3840x2160px (4K) 6x @ 5120x2880px (5K) 2x @ 7680x4320px (8K)
	Shading Architecture	DirectX 12 Shader Model 6.5
	Supported Graphics APIs	DirectX®12 Ultimate OpenGL® 4.6 OpenCL™ 2.1 Vulkan™ 1.2

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Technical Specifications - Graphics

NVIDIA® T400 4GB Graphics	**Form Factor**	Single Slot, Low Profile (2.7" H x 6.1" L)
	Graphics Controller	Turing architecture Max Power: 30 Watts Cooling Solution: Active fan heatsink
	Bus Type	PCI Express 3.0 x16
	Memory	4GB GDDR6 Memory Memory Bandwidth: 80 GB/s Memory Interface: 64 bit
	Connectors	3x mDP (Mini DisplayPort™) 1.4 Connectors
	Max simultaneous displays	- 3x 3840 x 2160 @ 120Hz - 3x 5120 x 2880 @ 60Hz - supports Multi-Stream Transport (MST)
	Shading Architecture	DirectX 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
NVIDIA® T600 4GB Graphics*	**Form Factor**	Single Slot, Low Profile (2.7" H x 6.1" L)
	Graphics Controller	Turing architecture Max Power: 40 Watts Cooling Solution: Active fan heatsink
	Bus Type	PCI Express 3.0 x16
	Memory	4GB GDDR6 Memory Memory Bandwidth: 160 GB/s Memory Interface: 128 bit
	Connectors	4x mDP (Mini DisplayPort™) 1.4 Connectors
	Max simultaneous displays	- 4x 3840 x 2160 @ 120Hz - 4x 5120 x 2880 @ 60Hz - 2x 7680 x 4320 @ 60Hz - supports Multi-Stream Transport (MST)
	Shading Architecture	DirectX 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions)

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		HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
		*May go End of Life in late 2022
AMD® Radeon™ RX 6400 4GB Graphics	**Form Factor**	Single slot, Low Profile (2.8" H x 6.3" L) Weight: 155g
	Graphics Controller	Radeon™ RX 6400 Max Power: 53W Cooling Solution: Active axial fan Architecture: RDNA™ 2
	Bus Type	PCI Express x4 Gen4
	Memory	Size: 4GB GDDR6 Interface: 64-bit Bandwidth: up to 128 GB/s
	Connectors	DP (DisplayPort™) 1.4 + HDMI 2.1
	Max simultaneous displays	- up to 4x 5120 x 2880 x 24 bpp @ 60Hz
	Shading Architecture	Microsoft DirectX 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL® 4.6 DirectX® 12 Ultimate Vulkan™ 1.1 API support includes: OpenCL™ 2.2
	Available Graphics Drivers	Microsoft Windows 10 64-bit, Windows 11 64-bit HP qualified drivers may be preloaded or the latest prosumer graphics drivers are available from the AMD.com
	Notes	This is a Prosumer or Consumer graphics card, and not a Professional graphics card. As such, it does not have formal professional application validation, but is intended per AMD to function properly for game development, real-time engine, and many prosumer application workloads. Customers using Prosumer or Consumer graphic cards with axial fan cooling solutions are likely to experience higher acoustics in comparison with Professional graphic cards that use blower fan cooling.
NVIDIA® T1000 4GB Graphics	**Form Factor**	Single Slot, Low Profile (2.7" H x 6.1" L)
	Graphics Controller	Turing architecture Max Power: 50 Watts Cooling Solution: Active fan heatsink
	Bus Type	PCI Express 3.0 x16
	Memory	4GB GDDR6 Memory Memory Bandwidth: 160 GB/s Memory Interface: 128 bit
	Connectors	4x mDP (Mini DisplayPort™) 1.4 Connectors

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Technical Specifications - Graphics

	Max simultaneous displays	- 4x 3840 x 2160 @ 120Hz - 4x 5120 x 2880 @ 60Hz - 2x 7680 x 4320 @ 60Hz - supports Multi-Stream Transport (MST)
	Shading Architecture	DirectX 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
NVIDIA® T1000 8GB Graphics	**Form Factor**	Single Slot, Low Profile (2.7” H x 6.1” L)
	Graphics Controller	Turing architecture Max Power: 50 Watts Cooling Solution: Active fan heatsink
	Bus Type	PCI Express 3.0 x16
	Memory	8GB GDDR6 Memory Memory Bandwidth: 160 GB/s Memory Interface: 128 bit
	Connectors	4x mDP (Mini DisplayPort™) 1.4 Connectors
	Max simultaneous displays	- 4x 3840 x 2160 @ 120Hz - 4x 5120 x 2880 @ 60Hz - 2x 7680 x 4320 @ 60Hz - supports Multi-Stream Transport (MST)
	Shading Architecture	DirectX 12 Shader Model 5.1
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
NVIDIA® RTX 2000 Ada	**Form Factor**	Half Height Dual Slot (2.7" Height x 6.7" Length)
	Max Power Consumption	70W

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Technical Specifications - Graphics

	GPU Memory	16GB GDDR6 Memory Bandwidth: 224 GB/s Memory Width: 128-bit
	Connectors	4x Mini DisplayPort 1.4a
	Maximum Resolution	4x 4096 x 2160 @ 120 Hz 4x 5120 x 2880 @ 60 Hz 2x 7680 x 4320 @ 60 Hz
	Bus Type	PCI Exress 4.0 x8
	Avaliable Drivers	Windows 10 Windows 11
NVIDIA® RTX™ A2000 12GB Graphics	**Form Factor**	Low-Profile Double Slot (2.7” H x 6.1” L)
	Graphics Controller	Ampere architecture Power: 70 Watts Cooling: Active Fan Heatsink
	Bus Type	PCI Express 4.0 x16
	Memory	12GB GDDR6 memory Memory Bandwidth: 288 GB/s Memory Interface: 192 bit Support Error-correcting code (ECC)
	Connectors	4x mDP (Mini DisplayPort™) 1.4 Connectors
	Max simultaneous displays	4x 4096 x 2160 @ 120 Hz, 4x 5120 x 2880 @ 60 Hz 2x 7680 x 4320 @ 60 Hz
	Shading Architecture	Shader Model 6.5
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
NVIDIA® RTX 4000 Ada	**Form Factor**	Full-Height Single Slot (4.4” Height x 11.5” Length)
	Max Power Consumption	130W
	GPU Memory	20GB GDDR6 Memory Bandwidth: 360 GB/s Memory Width: 160-bit
	Connectors	4x DisplayPort 1.4a Requires: 1x 16-pin CEM 5 power connector (adapter may be needed)
	Maximum Resolution	4x @ 4096 x 2160 @ 120Hz 4x @ 5120 x 2880 @ 60Hz 2x @ 7680 x 4320 @ 60Hz

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Technical Specifications - Graphics

	Bus Type	PCI Exress 4.0 x16
	Avaliable Drivers	Windows 10 Windows 11
NVIDIA® RTX™ A4000 16GB Graphics	**Form Factor**	Full Height Single Slot (9.5” Length)
	Graphics Controller	Ampere architecture Power: 140 Watts Cooling: Active Fan Heatsink
	Bus Type	PCI Express 4.0 x16
	Memory	16GB GDDR6 memory Memory Bandwidth: 448 GB/s Memory Interface: 256 bit Support Error-correcting code (ECC)
	Connectors	4x DP 1.4 Connectors
	Max simultaneous displays	4x 4096 x 2160 @ 120 Hz, 4x 5120 x 2880 @ 60 Hz, 2x 7680 x 4320 @ 60 Hz
	Shading Architecture	Shader Model 6.5
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
NVIDIA® RTX™ A4500 20GB Graphics	**Form Factor**	Full Height Double Slot (10.5” Length)
	Graphics Controller	Ampere architecture Power: 200 Watts Cooling: Active Fan Heatsink
	Bus Type	PCI Express 4.0 x16
	Memory	20GB GDDR6 memory Memory Bandwidth: 640 GB/s Memory Interface: 320 bit Support Error-correcting code (ECC)
	Connectors	4x DP 1.4 Connectors
	Max simultaneous displays	4x 4096 x 2160 @ 120 Hz, 4x 5120 x 2880 @ 60 Hz, 2x 7680 x 4320 @ 60 Hz
	Shading Architecture	Shader Model 6.5
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2

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Technical Specifications - Graphics

		API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
NVIDIA® RTX™ A5000 24GB Graphics	**Form Factor**	Full Height Double Slot (10.5" Length)
	Graphics Controller	Ampere architecture Power: 230 Watts Cooling: Active Fan Heatsink
	Bus Type	PCI Express 4.0 x16
	Memory	24GB GDDR6 memory Memory Bandwidth: 768 GB/s Memory Interface: 384 bit Support Error-correcting code (ECC)
	Connectors	4x DP 1.4 Connectors
	Max simultaneous displays	4x 4096 x 2160 @ 120 Hz, 4x 5120 x 2880 @ 60 Hz, 2x 7680 x 4320 @ 60 Hz
	Shading Architecture	Shader Model 6.5
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Vulkan 1.2 API support includes: CUDA, OpenCL 1.2
	Available Graphics Drivers	Windows 10 64-bit Windows 11 64-bit Linux® 64-bit (selected Enterprise distributions) HP qualified drivers may be preloaded or available from the HP support Web site: http://welcome.hp.com/country/us/en/support.html
AMD® Radeon™ Pro W7600 8GB	**Form Factor**	Full-Height Single Slot (4.38" "eight x 9.5" "ength)
	Max Power Consumption	130W
	GPU Memory	8GB GDDR6 Memory Bandwidth: 288 GB/s Memory Width: 128-bit
	Connectors	4x DP 2.1 Requires : 1x 6-pin PCIe Aux Power
	Maximum Resolution	4x @ 3840x2160 (4K) 4x @ 5120x2880 (5K) 2x @ 7680x4320 (8K)
	Bus Type	PCI Express 4.0 x8

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Technical Specifications - Graphics

	Available Graphics Drivers	Windows 10 Windows 11
	Form Factor	Full-Height Single Slot (4.38" ”eight x 8.5" ”ength)
MD® Radeon™ Pro W7500 8GB	**Max Power Consumption**	70W
	GPU Memory	8 GB GDDR6 Memory Bandwidth: 173 GB/s Memory Width: 128-bit
	Connectors	4x DP 2.1
	Maximum Resolution	4x @ 3840x2160 (4K) 4x @ 5120x2880 (5K) 2x @ 7680x4320 (8K)
	Bus Type	PCI Express 4.0 x8
	Available Graphics Drivers	Windows 10 Windows 11
AMD Radeon™ RX 6700 XT	**Form Factor**	Dual slot, Full Length (254mm L x 38mm W x 108.65mm H)
	Graphics Controller	AMD Radeon™ RX 6700 XT Graphics GPU: 2560 Navi2 Stream Processors Memory: 12GB GDDR6 Power: 230 Watts, Standard graphics 8pin + 6pin auxiliary power Cooling: Active, Dual Axial fan
	Bus Type	PCI Express 4.0 x16
	Connectors	3DP 1.4 + HDMI 2.1 Outputs
	Maximum Resolution	DisplayPort™ 1.4 with DSC: - up to 4x 5210 x 3200 x 24 bpp @ 60Hz, uncompressed - up to 7680 x 4320, compressed Display Outputs 3 DP + 1 HMDI
	Shading Architecture	Microsoft DirectX 12 Shader Model 6.1
	Supported Graphics APIs	OpenGL 4.6 DirectX 12 Feature Level 12_1 Vulkan 1.1 OpenCL 2.2
	Available Graphics Drivers	Windows 11 Linux® 64-bit (selected distributions) Typically, latest drivers will be available from amd.com

Notes: This is a Prosumer or Consumer graphics card, and not a Professional graphics card. As such, it does not have formal professional application validation, but is intended per AMD to function properly for game development, real-time engine, and many prosumer application workloads. Customers using Prosumer or Consumer graphic cards are likely to experience higher acoustics in comparison with Professional graphic cards. The higher acoustics observed with non-professional graphics is expected, as HP Workstations' designs do not have control in this area.

HP 9.5mm Slim DVD Writer	**Description**	9.5mm height, tray-load
	Mounting Orientation	Either horizontal or vertical
	Interface Type	SATA/ATAPI
	Dimensions (WxHxD)	128 x 9.5 x 127mm
	Supported Media Types	DVD+R DVD+RW

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Technical Specifications - Graphics

	DVD+R DL DVD-R DL DVD-R DVD-RW CD-R CD-RW	
Disc Capacity	**DVD-ROM**	8.5 GB DL or 4.7 GB standard
Access Times	**Full Stroke DVD**	< 200 ms (seek)
	Full Stroke CD	< 200 ms (seek)
Maximum Data Transfer Rates	**CD ROM Read**	CD-ROM, CD-R Up to 24X CD-RW Up to 24X
	DVD ROM Read	DVD+RW Up to 8X DVD-RW Up to 8X DVD+R DL Up to 8X DVD-R DL Up to 8X DVD-ROM Up to 8X DVD-ROM DL Up to 8X DVD+R Up to 8X DVD-R Up to 8X
Power	**Source**	SATA DC power receptacle
	DC Power Requirements	5 VDC ± 5%-100 mV ripple p-p
	DC Current	5 VDC -< 800 mA typical, <1600 mA maximum
Operating Environmental (all conditions non-condensing)	**Temperature**	41° to 122° F (5° to 50° C)
	Relative Humidity	10% to 80%
	Maximum Wet Bulb Temperature	84° F (29° C)
Operating Systems Supported	Windows 11, Windows 10, Windows 7 Professional 64-bit, Windows Vista Business 64*, Windows 2000. Linux®.	
Kit Contents	HP SATA DVD Writer drive, installation guide.	
Approvals	USB-IF, WHQL, Compliant with USB Mass Storage Class Bulk only Transport Specification Rev. 1.0, Compliant Intel Front Panel I/O Connectivity Design Guide V. 1.3, FCC, CE, BSMI, C-Tick, VCCI, MIC, cUL, TUVT	

NOTE: Actual speeds may vary. No support for DVD-RAM (DVD Writer). Does not permit copying of commercially available DVD movies or other copyright protected materials. Intended for creation and storage of your original material and other lawful uses. Double Layer discs can store more data than single layer discs. However, double-layer discs burned with this drive may not be compatible with many existing single-layer DVD drives and players.

HP 9.5mm Slim DVD-ROM Drive	**Description**	9.5mm height, tray-load	
	Mounting Orientation	Either horizontal or vertical	
	Interface Type	SATA / ATAPI	
	Dimensions (WxHxD)	128 x 9.5 x 127mm	
	Disc Capacity	**DVD-ROM**	Single layer: Up to 4.7 GB Double layer: Up to 8.5 GB

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Technical Specifications - Graphics

Access Times	**DVD-ROM Single Layer**	< 110 ms (typical)
	CD-ROM Mode 1	< 110 ms (typical)
	Full Stroke DVD	< 230 ms (typical)
	Full Stroke CD	< 220 ms (typical)
Power	**Source**	SATA DC power receptacle
	DC Power Requirements	5 VDC ± 5%-100 mV ripple p-p
	DC Current	5 VDC – <800mA typical, < 1600 mA maximum
Operating Environmental (all conditions non-condensing)	**Temperature**	41° to 122° F (5° to 50° C)
	Relative Humidity	10% to 80%
	Maximum Wet Bulb Temperature	84° F (29° C)
Operating Systems Supported	Windows 11, Windows 10, Windows 7 Professional 64-bit, Windows Vista Business 64*, Windows 2000. Linux®.	
Kit Contents	9.5mm Slim DVD-ROM Drive, slim SATA data/power cable, installation guide	
Approvals	USB-IF, WHQL, Compliant with USB Mass Storage Class Bulk only Transport Specification Rev. 1.0, Compliant Intel Front Panel I/O Connectivity Design Guide V. 1.3, FCC, CE, BSMI, C-Tick, VCCI, MIC, cUL, TUVT	

NOTE: Actual speeds may vary. No support for DVD-RAM (DVD Writer). Does not permit copying of commercially available DVD movies or other copyright protected materials. Intended for creation and storage of your original material and other lawful uses. Double Layer discs can store more data than single layer discs. However, double-layer discs burned with this drive may not be compatible with many existing single-layer DVD drives and players.

HP SD Media Card Reader	**Description**	USB3.0-SD4.0 **NOTE:** actual throughput is USB2.0.
	Interface Type	• Support USB 2.0 LPM function • Support USB 3.0 U1/U2/U3 Power saving mode • Support USB 3.0 LTM function.
	Dimensions (WxHxD)	Dedicated slot in front bezel (orderable option)
	Supported Media Types	i. Secure Digital Card (SD) ii. Secure Digital Support up to 2TB iii. Secure Digital HC (SDHC) iv. Secure Digital XC (SDXC) v. Support SD USH50 mode vi. miniSD *1 vii. miniSDHC*1 viii. MicroSD*1 ix. MicroSDHC*1 x. MicroSDXC*1 **NOTE:** "*1" means Adapter Needed

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Technical Specifications - Graphics

Operating Systems Supported	No driver is required for this device. Native support is provided by the operating system. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows 10 is automatically updated, which is always enabled. ISP fees may apply and additional requirements may apply over time for updates. See http://www.microsoft.com. See http://www.microsoft.com/windows/windows-7/ for details.

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Technical Specifications - Networking and Communications

Integrated Intel® I219LM PCIe GbE Controller (Intel® vPro® with Intel® AMT 16.0[1])	**Connector**	RJ-45
	Cabling	Twisted pair up to 100m
	Controller	Intel® I219LM GbE platform LAN connect networking controller
	Memory	3 KB Tx and 3KB Rx FIFO packet buffer memory
	Data Rates Supported	10/100/1000 Mbps
	Compliance	802.1as/1588, 802.1p, 802.1Q, 802.3, 802.3ab, 802.3az, 802.3i, 802.3u, 802.3z
	Bus Architecture	PCI Express and SMBus
	Data Transfer Mode	PCIe-based interface for active state operation (S0 state) and SMBus for host and management traffic (Sx low power state)
	Power Requirement	Requires 3.3V (integrated regulators for core Vdc)
	Boot ROM Support	Yes
	Network Transfer Mode	Full-duplex; Half-duplex
	Network Transfer Rate	10BASE-T (half-duplex) 10 Mbps 10BASE-T (full-duplex) 20 Mbps 100BASE-TX (half-duplex) 100 Mbps 100BASE-TX (full-duplex) 200 Mbps 1000BASE-T (full-duplex) 2000 Mbps
	Management Capabilities	vPro®, WOL, auto MDI crossover, PXE, Muti-port teaming, RSS, ACPI, Advanced cable diagnostic, loopback modes, AMT 16.0 support, Circuit Breaker, VLAN, Multicast Listener Discovery (MLD)

[1]Requires activation and a system with a corporate network connection, an Intel® AMT enabled chipset, and network hardware and software. For notebooks, Intel AMT may be unavailable or limited over a host OS-based VPN, when connecting wirelessly, on battery power, sleeping, hibernating, or powered off. Results dependent upon hardware, setup, and configuration. For more information, visit: https://www.intel.com/content/www/us/en/architecture-and-technology/intel-active-management-technology.html

HP 1-Port 1GbE Flex IO NIC	**Connector**	RJ-45
	Cabling	1GbE over Category 5e (or better) up to 100m
	Controller	Realtek RTL8153
	Data Rates Supported	10/100/1000 Mbps
	Compliance	802.3 (LAN) 802.3u (100BASE-TX) 802.3ab (1000BASE-T) 802.3x (Ethernet Flow Control) 802.1Q (Virtual LAN) 802.3az (Energy Efficient Ethernet)
	Bus Architecture	USB
	Power Requirement	Requires 3.3V (integrated regulators for core Vdc)
	Boot ROM Support	Yes
	Network Transfer Mode	Full-duplex; Half-duplex
	Network Transfer Rate	10BASE-T (half-duplex) 10 Mbps 10BASE-T (full-duplex) 20 Mbps 100BASE-TX (half-duplex) 100 Mbps

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Technical Specifications - Networking and Communications

		100BASE-TX (full-duplex) 200 Mbps 1000BASE-T (full-duplex) 2000 Mbps
	Operating Temperature	32° to 131° F (0° to 55° C)
	Dimensions (HxW)	1.5 in x 1.5 in. x 0.75 in (3.81 cm x 3.81 cm x 1.9 cm)
	Operating System Driver Support	Windows 11 64-bit Windows 10 64-bit Linux®

Intel® X550-T2 2-Port 10GbE NIC	**Connector**	Dual-port RJ-45
	Cabling	10GbE: Cat6a (or better) up to 100m 5GbE and below: Cat5e (or better) up to 100m
	Controller	Intel® Ethernet Controller X550
	Network Transfer Rates Supported	10GbE, 5GbE, 2.5GbE, 1GbE, 100MbE
	Data Path Width	PCIe Gen3x4
	Power Requirement	11.2W (typical) 13.0 (Maximum)
	Operating Temperature	32° to 131° F (0° to 55° C)
	Dimensions (HxW)	5.1 x 2.7 in (without brackets)
	Operating System Driver Support	Windows 11 64-Bit Windows 10 64-bit Linux®
	Kit Contents	• Intel® X550-T2 2-Port 10GbE NIC with standard height bracket attached • Low-profile bracket • Product Literature

NVIDIA Mellanox ConnectX-6 DX Dual Port 10/25GbE SFP28 NIC	**Connector**	Dual-port SFP28
	Cabling	Transceiver with Multi-Mode Fiber OM3 or OM4)
	Controller	ConnectX-6 Dx
	Network Transfer Rates Supported	1/10/25 GbE
	Data Path Width	PCIe Gen4x8
	Power Requirement	19.74W Maximum power available through SFP28 port: 2.5W (each port)
	Operating Temperature	32° to 131° F (0° to 55° C)
	Dimensions (HxW)	6.22in. x 2.67in (158mm x 68mm)
	Operating System Driver	Windows 11 64-Bit Windows 10 64-bit Linux®
	Kit Contents	• NVIDIA Mellanox ConnectX-6 SFP28 25GbE NIC with standard height bracket attached • Low-profile bracket • Product Literature

NOTE: The NVIDIA Mellanox ConnectX-6 DX network adapter requires either a PCIeG4 x4 or PCIeG4 x8 slot (electrical connection) to have full performance with two 25GbE SFP28 transceivers installed in the network adapter. When the network adapter is installed in a PCIeG3 x4 slot, the performance will

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be limited when installing two 25GbE SFP28 transceivers or installing a 25GbE SFP28 transceiver plus a 10GbE SFP+ transceiver

Intel® I350-T4 4-Port 1GbE NIC	**Connector**	4 RJ-45
	Cabling	Cat5e (or better) up to 100m
	Controller	Intel® Ethernet I350 Controller
	Network Transfer Rates Supported	1GbE, 100MbE, 10MbE
	Data Path Width	PCIe Gen2.1x4
	Power Requirement	5W (typical)
	Operating Temperature	32° to 131° F (0° to 55° C)
	Dimensions (HxW)	2.75 x 5.5 inches (without brackets)
	Operating System Driver Support	Windows 11 Windows 10 Linux®
	Kit Contents	• Intel® I350-T4 4-Port 1GbE NIC with standard height bracket attached • Low-profile bracket • Product Literature
HP Flex 1GbE Fiber LC Single Port	**Connector**	Fiber
	Cabling	1GbE over Category OM1 (or better) up to 100m
	Controller	Microchip LAN7801
	Data Rates Supported	100/1000 Mbps
	Compliance	IEEE 802.1p priority encoding/tagging (QoS, CoS) IEEE 802.1q VLAN tagging IEEE 802.3x flow control
	Bus Architecture	USB
	Power Requirement	Requires 3.3V (integrated regulators for core Vdc)
	Boot ROM Support	Yes
	Network Transfer Mode	Full-duplex; Half-duplex
	Network Transfer Rate	100BASE-X (half-duplex) 100 Mbps 1000BASE-X (half-duplex) 1000 Mbps 1000BASE-X (full-duplex) 2000 Mbps
	Operating Temperature	32° to 158° F (0°C to 70°C)
	calvin	1.5 in x 1.7 in. x 0.75 in (3.84 cm x 4.3 cm x 1.9 cm)
	Operating System Driver Support	Windows 11 64-Bit Windows 10 64-bit Linux®
Intel® I225-T1 1-Port 2.5GbE NIC	**Connector**	RJ-45
	Cabling	Cat5e (or better) up to 85m
	Controller	Intel® Ethernet I225 Controller
	Network Transfer Rates Supported	2.5GbE, 1GbE, 100MbE, 10MbE

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	Data Path Width	PCIe Gen3.1x1
	Power Requirement	1.9W (typical)
	Operating Temperature	32° to 158° F (0°C to 70°C)
	Dimensions (HxW)	2.7 in x 2.57 in. (68.7mm x 65.3mm)
	Operating System Driver	Windows 11 64-Bit Windows 10 64-bit Linux®
	Kit Contents	• Intel® I225-T1 1-Port 2.5GbE NIC with standard height bracket attached Low-profile bracket • Product Literature
Intel® Wi-Fi 6E* AX211 802.11ax, BT 5.3, M.2 With Internal Antenna	**WLAN Standards**	802.11abgn+acR2+axR2(Pre-Standard) MIMO 2x2 High performance, low power dual band Pre-Standard-802.11ax R2 2x2, both with 160MHz channel support – Wi-Fi 6E
	Antenna	2x2 Dual-Band (internal)
	Bluetooth Standards	5.2
	Operating Temperature	32° to 176° F (0° to 80° C)
	Interface	M.2 CNVio2
	Dimensions	M.2 2230
	Kit Contents	Not Available
	NOTE: The AX211 with internal antenna only support WIFI 6 *Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.	
Intel® Wi-Fi 6E* AX211 802.11ax, BT 5.3, M.2 With External Antenna	**WLAN Standards**	802.11abgn+acR2+axR2(Pre-Standard) MIMO 2x2 High performance, low power dual band Pre-Standard-802.11ax R2 2x2, both with 160MHz channel support – Wi-Fi 6E
	Antenna	2x2 Dual-Band (External)
	Bluetooth Standards	5.2
	Operating Temperature	32° to 176° F (0° to 80° C)
	Interface	M.2 CNVio2
	Dimensions	M.2 2230
	Kit Contents	ANTENNA, External, Dipole, WLAN, WIFI 6E
	NOTE: The AX211 with external antenna support WIFI 6E *Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.	
Intel® Wi-Fi 7 BE200	**WLAN Standards**	802.11abgn+acR2+axR2+be+dehikrv
	Antenna	2x2 Dual-Band (External)
	Bluetooth Standards	5.4
	Operating Temperature	32° to 176° F (0° to 80° C)
	Interface	M.2: PCIe, USB
	Dimensions	M.2 2230
	Kit Contents	ANTENNA, External, Dipole, WLAN, WIFI 7

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Technical Specifications - Networking and Communications

NOTE: Not available with 12th Gen Intel ADL processors; Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 7 (802.11BE) functionality requires Windows 11 24H2, select Intel® processor, and a Wi-Fi 7 router, sold separately. Wi-Fi 7 is backwards compatible with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported.

Intel® Wi-Fi 7 BE200 802.11be, BT 5.4, M.2 With Internal Antenna	**WLAN Standards**	802.11 a/b/g/n/ac/axR2/be MIMO 2x2 High performance, low power dual band 802.11be 2x2, Both 320MHz/160MHz Channel support - Wi-Fi 6E/7
	Antenna	2x2 Dual-Band (internal)
	Bluetooth Standards	5.4
	Operating Temperature	32° to 176° F (0° to 80° C)
	Interface	M.2: PCIe
	Dimensions	M.2 2230
	Kit Contents	Not Available
	NOTE: Not available with 12th/13th Gen Intel ADL/RPL processors The BE200 with internal antenna only supports Wi-Fi 6	

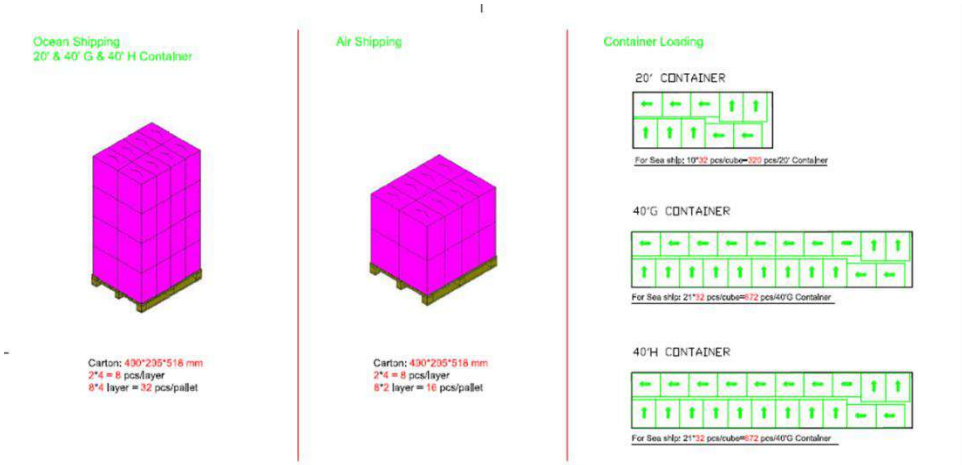
Intel® Wi-Fi 7 BE200 802.11be, BT 5.4, M.2 With External Antenna	**WLAN Standards**	802.11 a/b/g/n/ac/axR2/be MIMO 2x2 High performance, low power dual band 802.11be 2x2, Both 320MHz/160MHz Channel support - Wi-Fi 6E/7
	Antenna	2x2 Dual-Band (External)
	Bluetooth Standards	5.4
	Operating Temperature	32° to 176° F (0° to 80° C)
	Interface	M.2: PCIe
	Dimensions	M.2 2230
	Kit Contents	ANTENNA, External, Dipole, WLAN, Wi-Fi 7
	NOTE: Not available with 12th/13th Gen Intel ADL/RPL processors; Wireless access point and Internet service required and sold separately. Availability of public wireless access points limited. Wi-Fi 7 (802.11BE) functionality requires Windows 11 24H2, select Intel® 14th processor, and a Wi-Fi 7 router, sold separately. Wi-Fi 7 is backwards compatible with prior 802.11 specs. Available in countries where Wi-Fi 7 is supported.	

Palletization

Ocean Shipping uses a 20’ x 40’ x 40’ (490mm x 295mm x 518mm) container with 4 layers; 2x4=8 pieces per layer for a total of 32 pieces per pallet
Air shipping uses 490mm x 295mm x 518mm carton with 2 layers; 2x4=8 pieces per layer for a total of 16 pieces per pallet.

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Date of change:	Version History:		Description of change:
March 8, 2022	From v1 to v2	Changed	Format
March 16, 2022	From v2 to v3	Changed	Social and Environmental Responsibility section
May 6, 2022	From v3 to v4	Changed	Processors, Graphics, Networking and Communications sections
June 1, 2022	From v4 to v5	Changed	Operating Systems and SATA Hard Drives sections
June 15, 2022	From v5 to v6	Changed	Networking and Communications section
July 1, 2022	From v6 to v7	Changed	Graphics section
July 8, 2022	From v7 to v8	Changed	System Board section
August 1, 2022	From v8 to v9	Changed	SATA Hard Drives, Other Hardware sections
August 4, 2022	From v9 to v10	Changed	Format
September 1, 2022	From v10 to v11	Changed	Storage / Hard Drives, Graphics, Optical and Removable Storage Networking and Communications sections
October 1, 2022	From v11 to v12	Changed	Graphics, Networking and Communications sections
November 1, 2022	From v12 to v13	Changed	Graphics Adapters section
February 6, 2023	From v13 to v14	Changed	Processors section
March 1, 2023	From v14 to v15	Changed	Manageability section
March 30, 2023	From v15 to v16	Changed	Processors section
April 25, 2023	From v16 to v17	Changed	Power Supply, Social and Environmental Responsibility sections
May 1, 2023	From v17 to v18	Changed	Other Hardware section
June 1, 2023	From v18 to v19	Changed	Graphics, Social and Environmental Responsibility, Palletization sections
July 1, 2023	From v19 to v20	Changed	Networking and Communications, Other Hardware, HP BIOS sections
July 5, 2023	From v20 to v21	Changed	System Board section
August 1, 2023	From v21 to v22	Changed	Social and Environmental Responsibility section
August 1, 2023	From v22 to v23	Changed	ENVIRONMENTAL DATA section
September 15, 2023	From v23 to v24	Changed	Networking and Communications
October 1, 2023	From v24 to v25	Changed	Graphics, Input Devices sections
November 1, 2023	From v25 to v26	Changed	Graphics, Input Devices sections
December 1, 2023	From v26 to v27	Changed	Graphics, Other Hardware, Social and Environmental Responsibility sections
December 11, 2023	From v27 to v28	Changed	Optical and Removable Storage section
December 21, 2023	From v28 to v29	Changed	Graphics section
February 1, 2024	From v29 to v30	Changed	Social and Environmental Responsibility section
March 1, 2024	From v30 to v31	Changed	Graphics, System Configurations, Declared Noise Emissions and Networking and Communications sections
March 12, 2024	From v31 to v32	Changed	Processors section
April 1, 2024	From v32 to v33	Changed	Graphics and Other Hardware sections

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Technical Specifications - Networking and Communications

May 1, 2024	From v33 to v34	Changed	Graphics, Social and Environmental Responsibility sections
June 1, 2024	From v34 to v35	Changed	Storage section
July 1, 2024	From v35 to v36	Changed	Graphics, Memory, Networking and Communications sections
July 18, 2024	From v36 to v37	Changed	Software section
August 1, 2024	From v37 to v38	Changed	Graphics, Memory sections
August 1, 2024	From v38 to v39	Changed	Graphics section
September 24, 2024	From v39 to v40	Changed	Humidity, HP SD Media Card Reader sections
October 8, 2024	From v40 to v41	Changed	Format
October 31, 2024	From v41 to v42	Changed	Memory section
November 21, 2024	From v42 to v43	Changed	Format
January 2, 2025	From v43 to v44	Changed	Networking and Communications section

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HP Brasil Indústria e Comércio de Equipamentos Eletrônicos Ltda.
Alameda Xingu, n.º 350, 8º andar
Alphaville Industrial, Barueri/SP
CEP: 06455-030
Brasil

declaração

Barueri, 10 de junho de 2025

Ao/À
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS

Assunto:
PREGÃO ELETRONICO 94010/2025-CPL/MP/PGJ SRP

BDI 22631

A empresa **Torino Informática Ltda**, inscrita no CNPJ **03.619.767/0001-91** sediada na RUA RITA DE CARVALHO MONTEIRO, 120, RETIRO SÃO JOÃO, SOROCABA, SP - CEP 18085-750 com filial inscrita no CNPJ **03.619.767/0005-15** situada a Avenida 600, s/n, Quadra 15, Módulo 10, Setor Industrial, TIMS, Serra, ES, CEP 29161-419, é um **PARCEIRO AUTORIZADO HP, PARA COMPRA DIRETA DE PRODUTOS DA HP**, estando apto a comercializar as linhas de produtos HP de nossa fabricação descritas abaixo.

Declaramos ainda que a TORINO INFORMÁTICA LTDA. é o parceiro de serviços do programa AMPLIFY, autorizado a prestar serviço de assistência técnica dos produtos que comercializa no telefone 0800 201-5666.

Produtos:

B20A5LS#AK4 – HP Elite Mini 800 G9 – Garantia padrão do fabricante
67V68AV#TMP – Z2 Tower G9 – Garantia padrão do fabricante
9Z0P1AV#TMP – EliteBook 640 G11 – Garantia padrão do fabricante
9A816AV#TMP – ZBook Power 16 inch G11 – Garantia padrão do fabricante

Declaramos ainda que, o produto **B20A5LS#AK4** – HP Elite Mini 800 G9:

- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;
- Informações técnicas básicas como modelo do processador, capacidade de memória instalada, capacidade e tipo do dispositivo de armazenamento, versão do sistema operacional e garantia padrão de fábrica estarão descritas na proposta comercial emitida pela CONTRADA;
- Modelo de equipamento ofertado é a mais recente geração disponibilizada pela HP com comercialização no Brasil;
- A HP disponibiliza a ferramenta HP Support Assistant que permite a verificação e instalação das últimas atualizações de todas as ferramentas e drivers disponibilizadas pela HP para o equipamento. Sendo capaz de monitorar o sistema, realizar diagnósticos, emitir alertas e ajudar a reparar erros do sistema, ajudando assim a manter a saúde e segurança do sistema. Permite verificar o status da garantia pela ferramenta;

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- Possui BIOS da HP, desenvolvida pela HP, em conformidade com a especificação minima UEFI 2.7 (http://www.uefi.org/) e capturáveis pela aplicação de inventário como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com descrição do modelo, número de série e campo de registro de número de patrimônio com extensão mínima de 15 dígitos, todos gravados em memória não volátil e sendo estas capturáveis por aplicações de inventario como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com interface gráfica com navegação utilizando mouse ou teclado, disponível em mais de 3 idiomas (por exemplo: português, espanhol, inglês etc.);
- Possui BIOS atualizável com opção de recuperação de falha, a partir de arquivo de recuperação no disco rígido ou USB externa;
- Possui BIOS com suporte à verificação de integridade, através do recurso HP Sure Start;
- As atualizações da BIOS, quando necessárias, são disponibilizadas no site da HP Inc.;
- Possui BIOS implementada em "flash ROM" atualizável diretamente pelo microcomputador, utilizando memória não volátil e reprogramável, Plug and Play, entregue na versão mais atual disponibilizada pela HP. Podendo ser atualizada por software de gerenciamento remoto;
- Possui BIOS com capacidade de habilitar / desabilitar portas USB;
- Possui BIOS com possibilidade de configuração de senhas para Power On, Administrador e unidade de armazenamento;
- Possui BIOS com suporte à tecnologia de previsão/contingenciamento de falhas de disco rígido S.M.A.R.T habilitada;
- Possui BIOS com suporte a boot por pendrive ou unidade de armazenamento externo, conectado a uma porta USB 2.0 ou superior;
- Possui BIOS compatível com o padrão mínimo ACPI 6.0. E também compatível com os padrões: DMI, SNMP, WMI, SMBIOS;
- Possui BIOS em conformidade com a normativa NIST 800-147 e NIST 800-193 (HP Sure Start);
- Possui a ferramenta HP Secure Erase integrada na BIOS, que possibilita apagar de forma definitiva e irrecuperável todos os dados da unidade de armazenamento, permitindo o descarte seguro de seus equipamentos (NIST 800-88);
- Possui BIOS com ferramenta de diagnóstico UEFI de componentes internos de hardware (processador, memória, unidade de armazenamento, áudio, teclado, rede, placa mãe, portas USB e vídeo). Acessível via BIOS ou teclas de atalho (F1...F12). A mensagem de erro é suficiente para abertura de chamado em garantia;
- Possui sistema de monitoramento de temperatura controlada pela BIOS, adequado ao processador, fonte e demais componentes internos ao gabinete;
- Possui recurso para realizar downgrade de BIOS e replicação de configurações de BIOS em escala utilizando um arquivo referência ou via Powershell;
- Possui placa mãe fabricada e desenvolvida pela HP, exclusiva para o modelo, com o nome da HP identificado na mesma;
- Possui placa mãe com capacidade de desligamento do vídeo e da unidade de armazenamento após tempo determinado pelo usuário e reiniciar por acionamento de teclado ou pela movimentação do mouse e possui função de economia de energia;
- Possui chip TPM integrado, acompanhado de drivers e a ferramenta nativa do Windows (tpm.msc) para utilização do chip e possibilitando a utilização de todos os recursos de segurança e criptografia (A ferramenta tpm.msc é fornecida com os equipamentos adquiridos com o Sistema Operacional Windows 10 / 11 Pro);
- O chipset é do mesmo fabricante do processador, com tecnologia que permite que o sistema retome rapidamente do estado de hibernação tanto para unidades de armazenamento do tipo SATA e do tipo PCIe;
- Sempre que o equipamento for inicializado, será mostrado no monitor de vídeo o nome da HP;
- Possuem os mesmos padrões de cores, sendo o preto ou cinza escuro a cor predominante e com o logotipo da HP impresso;
- Possui acabamento interno composto de superfícies não cortantes;
- O gabinete possui tratamento anticorrosivo;

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- O gabinete possui base/superfície antiderrapante;
- Possui gabinete feito em liga metálica e front bezel de ABS
- O equipamento pode funcionar na posição horizontal ou vertical.
- Possui afixado no gabinete do equipamento, o Selo Certificado de Autenticidade (COA – Certificate of Authenticity) do software Windows na versão instalada e com serial de ativação do sistema operacional gravado no BIOS, quando adquirido com o sistema operacional Windows 11 conforme descrito na proposta comercial;
- O fluxo do ar interno segue as orientações do fabricante do microprocessador;
- Possui tecnologia implementada que controle o nível de desempenho do processador automaticamente, ajustando dinamicamente a frequência e a voltagem a cada a necessidade requerida pela atividade do momento para que seja otimizada a autonomia de bateria do equipamento;
- Possui suporte a implementação de tecnologia dual-channel para a memória RAM;
- As unidades de armazenamento disponíveis para fabricação do modelo, possuem suporte à tecnologia de segurança SMART e NCQ;
- Todos os conectores das portas de entrada/saída são identificados por cores ou símbolos, de acordo com o padrão PC'99 System Design Guide;
- Possui controladora de áudio onboard, com entrada e saída de áudio estéreo (combo jack), capaz de reproduzir os sons gerados pelo sistema (como músicas e beeps de alerta de diagnósticos), e está conectado diretamente a placa mãe sem uso de adaptadores, com suporte a 16bits;
- O sistema de áudio onboard possui a possibilidade de desativação por software ou automaticamente quando houver conexão com a caixa de som ou fone de ouvido;
- Possui controladora de vídeo integrada, com suporte a múltiplos monitores (mínimo de 2) onde para maiores quantidades estará descrito na proposta comercial emitida pela CONTRATADA. Os monitores podem operar simultaneamente, de forma estendida ou espelhada
- Possui controladora de vídeo integrada com capacidade de alocar no mínimo 1.5GB de memória de vídeo, compartilhada de forma dinâmica com a memória RAM. Possui suporte para DirectX 12 e Open GL 4.5 e compatibilidade do driver com o padrão WDDM (Windows Display Driver Model);
- Possui controladora de rede Gigabit Ethernet 10/100/1000 Mbps com reconhecimento automático da velocidade da rede, com capacidade de operar no modo full-duplex, autosense, plug and play, com suporte ao protocolo SNMP, totalmente configurável por software, com suporte a VLAN, com suporte a PXE 2.1 e com função Wake-On-Lan instalada e em funcionamento. Com conector RJ-45 com LEDs de diagnostico;
- Possui interface de comunicação wireless integrada desde que a CONTRATADA incluía este item na proposta comercial. Esta placa wireless tem suporte aos padrões 802.11ax, 802.11ac, 802.11a, 802.11b, 802.11g e 802.11n, com suporte aos protocolos 802.11i (WLAN security, TKIP e AES), WPA, WPA2, WEP 64 e 128, IEEE 802.11 (Wired Equivalent Privacy), IEEE 802.1x. Com certificado de homologação válido da ANATEL, e no Wi-fi Certified Aliance. O ajuste da potência é de acordo com a recepção do sinal, de forma a proporcionar economia de bateria;
- Possui teclado da HP, desde que a CONTRATADA inclua este item na proposta comercial. Teclado HP com com todos os caracteres da língua portuguesa incluindo Ç, com teclado numérico embutido, com teclas Windows Logo (acesso ao menu iniciar), com LEDs indicativos de “caps lock” e “num lock”. A impressão sobre as teclas é do tipo permanente, não apresentando desgaste por abrasão ou uso prolongado. Possui sistema de proteção contra derramamento acidental de pequenas quantidades de líquidos. Possui sistema para ajuste de inclinação e cabo USB de no mínimo 1.5m. Não possui teclas dedicadas de funções multimedia, desligar, hibernar ou standby.
- Possui mouse óptico da HP, desde que a CONTRATADA incluía este item na proposta comercial. Mouse HP com conector USB, cabo com comprimento mínimo de 1.8m, com resolução de 1000dpi, com 03 botões (esquerdo, direito e central próprio para rolagem (scrol)), formato ergonômico e de conformação ambidestra;
- Fonte externo com ajuste automático 100~240v / 50-60Hz (bivolt), suficiente para suportar todas as configurações do equipamento conforme as especificações técnicas contidas no catálogo técnico do mesmo, permitindo o funcionamento por no mínimo 10 horas por dia e 5 dias por semana;
- Possui cabo de energia para a fonte de alimentação de acordo com o novo padrão ABNT (NBR 14136), com comprimento minimo de 1,5m (total fonte mais cabo de energia);

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- Todos os componentes do produto são novos (sem uso, reforma ou recondicionamento) e estão em linha de fabricação;
- Pertence a linha corporativa da HP;
- A HP possui programas de Logística Reversa (https://www.hp.com/br-pt/hp-information/sustainable-impact/planet-product-recycling.html);
- São bens constituídos em parte, por material reciclado, atóxico, biodegradável e atendem a diretiva RoHS;
- Todos os itens e seus acessórios são novos, não recondicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, frisagens, furações, fitas adesivas, marcas, falhas de fabricação ou qualquer outro procedimento ou emprego de materiais inadequados que adaptem forçadamente o equipamento ou suas partes que sejam fisicamente ou logicamente incompatíveis;
- As unidades dos equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, utilizando sempre que possível de materiais recicláveis, de forma a garantir a máxima proteção durante o transporte e a armazenagem;
- Cada equipamento possui um número de série único, afixado em local visível em etiqueta de difícil remoção ou impresso a laser, constando a marca, o modelo e o número de série do equipamento e também na embalagem;
- A HP possui pagina na Internet no qual pelo número de série é possível verificar o início e fim do período de garantia do equipamento;
- Os drivers, softwares e sistema operacional fornecido com o equipamento da HP estão disponíveis para download no site da HP, permitindo a instalação e recuperação do sistema operacional ao padrão de fábrica.
- A HP disponibiliza a ferramenta HP Cloud Recovery que permite realizar o download dos Drivers e do Sistema Operacional de forma automatizada para gerar pendrive de reinstalação;
- É disponibilizada documentação técnica necessária à instalação e operação do equipamento em português;
- A HP Disponibiliza “Central de atendimento telefônico” com número de telefone 0800 ou Whatsapp para abertura de chamado, em dias úteis, (segunda-feira a sexta-feira), em horário comercial (das 8h às18h) e “Central de atendimento via sistema web” para abertura de chamado 24x07, (domingo a domingo), a qualquer horário (das 00:00h às 23:59h);
- A HP Mantém os registros dos chamados que foram abertos, mantendo as informações que foram registradas sobre o mesmo;
- A ferramenta Web de abertura de chamados da HP permite que o cliente a visualize e acompanhe os chamados abertos anteriormente;
- Possui garantia padrão de fábrica de 01 ano para reposição de peças, mão de obra, com atendimento "on-site", conforme descrito na proposta comercial emitida pela CONTRATADA;
- Permite a extensão de garantia para 03, 04 ou 05 anos para reposição de peças, mão de obra, para o monitor, com atendimento do tipo "on-site" através de aquisição da CONTRADA de carepack de extensão de garantia, devendo descrever em sua proposta comercial a descrição da extensão da garantia (HP Carepack);
- A assistência técnica “on-site” será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;
- Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa, salvo quando o defeito for provocado por uso inadequado dos equipamentos;
- Certificado de Garantia é válido em todo o território nacional;
- Abertura do equipamento para limpeza, adição de memória ou SSD pela CONTRATANTE não implicará em perca da garantia desde que não cause mau uso. A garantia da HP não cobrirá o suporte destas peças.

Declaramos ainda que, o produto **67V68AV#TMP** – Z2 Tower G9:

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- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará

as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;

- Informações técnicas básicas como modelo do processador, capacidade de memória instalada, capacidade e tipo do dispositivo de armazenamento, versão do sistema operacional e garantia padrão de fábrica estarão descritas na proposta comercial emitida pela CONTRADA;
- Modelo de equipamento ofertado é a mais recente geração disponibilizada pela HP com comercialização no Brasil;
- A HP disponibiliza a ferramenta HP Support Assistant que permite a verificação e instalação das últimas atualizações de todas as ferramentas e drivers disponibilizadas pela HP para o equipamento. Sendo capaz de monitorar o sistema, realizar diagnósticos, emitir alertas e ajudar a reparar erros do sistema, ajudando assim a manter a saúde e segurança do sistema. Permite verificar o status da garantia pela ferramenta;
- Possui BIOS da HP, desenvolvida pela HP, em conformidade com a especificação minima UEFI 2.7 (http://www.uefi.org/) e capturáveis pela aplicação de inventário como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com descrição do modelo, número de série e função de registro de número de patrimônio com extensão mínima de 15 dígitos, todos gravados em memória não volátil e sendo estas capturáveis por aplicações de inventario como por exemplo SCCM, Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com interface gráfica com navegação utilizando mouse ou teclado, disponível em mais de 3 idiomas (por exemplo: portugues, espanhol, inglês etc.);
- Possui BIOS atualizável com opção de recuperação de falha, a partir de arquivo de recuperação no disco rígido ou USB externa;
- Possui BIOS com suporte à verificação de integridade, através do recurso HP Sure Start;
- As atualizações da BIOS, quando necessárias, são disponibilizadas no site da HP Inc., com atualização via download na internet diretamente na interface de configuração da BIOS também;
- Possui BIOS implementada em “flash ROM” atualizável diretamente pelo microcomputador, utilizando memória não volátil e reprogramável, Plug and Play, entregue na versão mais atual disponibilizada pela HP. Podendo ser atualizada por software de gerenciamento remoto;
- Possui BIOS com capacidade de habilitar / desabilitar portas USB;
- Possui BIOS com possibilidade de configuração de senhas para Power On, Administrador e unidade de armazenamento;
- Possui BIOS com suporte à tecnologia de previsão/contingenciamento de falhas de disco rígido S.M.A.R.T habilitada;
- Possui BIOS com suporte a boot por pendrive ou unidade de armazenamento externo, conectado a uma porta USB 2.0 ou superior;
- Possui BIOS compatível com o padrão minimo ACPI 6.0, E também compatível com os padrões: DMI, SNMP, WMI e SMBIOS;
- Possui BIOS em conformidade com a normativa NIST 800-147 e NIST 800-193 (HP Sure Start);
- Possui a ferramenta HP Secure Erase integrada na BIOS, que possibilita apagar de forma definitiva e irrecuperável todos os dados da unidade de armazenamento, permitindo o descarte seguro de seus equipamentos (NIST 800-88);
- Possui BIOS com ferramenta de diagnóstico UEFI de componentes internos de hardware (processador, memória, unidade de armazenamento, áudio, teclado, rede, placa mãe, portas USB e vídeo). Acessível via BIOS ou teclas de atalho (F1...F12). A mensagem de erro é suficiente para abertura de chamado em garantia;
- Possui sistema de monitoramento de temperatura controlada pela BIOS, adequado ao processador, fonte e demais componentes internos ao gabinete;
- Possui recurso para realizar downgrade de BIOS e replicação de configurações de BIOS em escala utilizando um arquivo referência ou via Powershell;
- Possui placa mãe fabricada e desenvolvida pela HP, exclusiva para o modelo, com o nome da HP identificado na mesma;

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- Possui placa mãe com capacidade de desligamento do vídeo e da unidade de armazenamento após tempo determinado pelo usuário e reiniciar por acionamento de teclado ou pela movimentação do mouse e possui função de economia de energia;
- Possui chip TPM integrado, acompanhado de drivers e a ferramenta nativa do Windows (tpm.msc) para utilização do chip e possibilitando a utilização de todos os recursos de segurança e criptografia (A ferramenta tpm.msc é fornecida com os equipamentos adquiridos com o Sistema Operacional Windows 10 / 11 Pro);
- O chipset é do mesmo fabricante do processador, com tecnologia que permite que o sistema retome rapidamente do estado de hibernação tanto para unidades de armazenamento do tipo SATA e do tipo PCIe;
- Sempre que o equipamento for inicializado, será mostrado no monitor de vídeo o nome da HP;
- Possuem os mesmos padrões de cores, sendo o preto ou cinza escuro a cor predominante e com o logotipo da HP impresso;
- Possui acabamento interno composto de superfícies não cortantes;
- O gabinete possui tratamento anticorrosivo;
- O gabinete possui base/superfície antiderrapante;
- Possui gabinete feito em liga metálica e front bezel de ABS
- O equipamento pode funcionar na posição horizontal ou vertical.
- Possui afixado no gabinete do equipamento, o Selo Certificado de Autenticidade (COA – Certificate of Authenticity) do software Windows na versão instalada e com serial de ativação do sistema operacional gravado no BIOS, quando adquirido com o sistema operacional Windows 11 conforme descrito na proposta comercial;
- O fluxo do ar interno segue as orientações do fabricante do microprocessador;
- Possui processador da geração mais recente fabricada pela HP no Brasil para este modelo de desktop de uso corporativo;
- Possui tecnologia implementada que controle o nível de desempenho do processador automaticamente, ajustando dinamicamente a frequência e a voltagem a cada a necessidade requerida pela atividade do momento para que seja otimizada a autonomia de bateria do equipamento;
- Possui suporte a implementação de tecnologia dual-channel para a memória RAM;
- As unidades de armazenamento disponíveis para fabricação do modelo, possuem suporte à tecnologia de segurança SMART e NCQ;
- Todos os conectores das portas de entrada/saída são identificados por cores ou símbolos, de acordo com o padrão PC'99 System Design Guide;
- Possui controladora de áudio onboard, com entrada e saída de áudio estéreo (combo jack), capaz de reproduzir os sons gerados pelo sistema (como músicas e beeps de alerta de diagnósticos), e está conectado diretamente a placa mãe sem uso de adaptadores, com suporte a 16bits;
- O sistema de áudio onboard possui a possibilidade de desativação por software ou automaticamente quando houver conexão com a caixa de som ou fone de ouvido;
- Possui controladora de rede Gigabit Ethernet 10/100/1000 Mbps com reconhecimento automático da velocidade da rede, com capacidade de operar no modo full-duplex, autosense, plug and play, com suporte ao protocolo SNMP, totalmente configurável por software, com suporte a VLAN, com suporte a PXE 2.1 e com função Wake-On-Lan instalada e em funcionamento. Com conector RJ-45 com LEDs de diagnostico;
- Possui interface de comunicação wireless integrada desde que a CONTRATADA incluía este item na proposta comercial. Esta placa wireless tem suporte aos padrões 802.11ax, 802.11ac, 802.11a, 802.11b, 802.11g e 802.11n, com suporte aos protocolos 802.11i (WLAN security, TKIP e AES), WPA, WPA2, WEP 64 e 128, IEEE 802.11 (Wired Equivalent Privacy), IEEE 802.1x. Com certificado de homologação válido da ANATEL, e no Wi-fi Certified Aliance. O ajuste da potência é de acordo com a recepção do sinal, de forma a proporcionar economia de bateria;
- Possui teclado da HP, desde que a CONTRATADA inclua este item na proposta comercial. Teclado HP com com todos os caracteres da língua portuguesa incluindo Ç, com teclado numérico embutido, com teclas Windows Logo (acesso ao menu iniciar), com LEDs indicativos de “caps lock” e “num lock”. A impressão sobre as teclas é do tipo permanente, não apresentando desgaste por abrasão ou uso prolongado. Possui sistema de proteção contra derramamento acidental de

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pequenas quantidades de líquidos. Possui sistema para ajuste de inclinação e cabo USB de no mínimo 1.5m. Não possui teclas dedicadas de funções multimedia, desligar, hibernar ou standby.

- Possui mouse óptico da HP, desde que a CONTRATADA incluía este item na proposta comercial. Mouse HP com conector USB, cabo com comprimento mínimo de 1.8m, com resolução de 1000dpi, com 03 botões (esquerdo, direito e central próprio para rolagem (scrol)), formato ergonômico e de conformação ambidestra;
- Fonte externo com ajuste automático 100~240v / 50-60Hz (bivolt), suficiente para suportar todas as configurações do equipamento conforme as especificações técnicas contidas no catálogo técnico do mesmo, permitindo o funcionamento por no mínimo 10 horas por dia e 5 dias por semana;
- Possui cabo de energia para a fonte de alimentação de acordo com o novo padrão ABNT (NBR 14136), com comprimento total de no minimo 1.5m;
- Todos os componentes do produto são novos (sem uso, reforma ou recondicionamento) e estão em linha de fabricação;
- Pertence a linha corporativa da HP;
- A HP possui programas de Logística Reversa (https://www.hp.com/br-pt/hp-information/sustainable-impact/planet-product-recycling.html);
- São bens constituídos em parte, por material reciclado, atóxico, biodegradável e atendem a diretiva RoHS;
- Todos os itens e seus acessórios são novos, não recondicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, frisagens, furações, fitas adesivas, marcas, falhas de fabricação ou qualquer outro procedimento ou emprego de materiais inadequados que adaptem forçadamente o equipamento ou suas partes que sejam fisicamente ou logicamente incompatíveis;
- As unidades dos equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, utilizando sempre que possível de materiais recicláveis, de forma a garantir a máxima proteção durante o transporte e a armazenagem;
- Cada equipamento possui um número de série único, afixado em local visível em etiqueta de difícil remoção ou impresso a laser, constando a marca, o modelo e o número de série do equipamento e também na embalagem;
- A HP possui pagina na Internet no qual pelo número de série é possível verificar o início e fim do período de garantia do equipamento;
- Os drivers, softwares e sistema operacional fornecido com o equipamento da HP estão disponíveis para download no site da HP, permitindo a instalação e recuperação do sistema operacional ao padrão de fábrica.
- A HP disponibiliza a ferramenta HP Cloud Recovery que permite realizar o download dos Drivers e do Sistema Operacional de forma automatizada para gerar pendrive de reinstalação;
- É disponibilizada documentação técnica necessária à instalação e operação do equipamento em português;
- A HP Disponibiliza “Central de atendimento telefônico” com número de telefone 0800 ou Whatsapp para abertura de chamado, em dias úteis, (segunda-feira a sexta-feira), em horário comercial (das 8h às18h) e “Central de atendimento via sistema web” para abertura de chamado 24x07, (domingo a domingo), a qualquer horário (das 00:00h às 23:59h);
- A HP Mantém os registros dos chamados que foram abertos, mantendo as informações que foram registradas sobre o mesmo;
- A ferramenta Web de abertura de chamados da HP permite que o cliente a visualize e acompanhe os chamados abertos anteriormente;
- Possui garantia padrão de fábrica de 01 ano para reposição de peças, mão de obra, com atendimento "on-site", conforme descrito na proposta comercial emitida pela CONTRATADA;
- Permite a extensão de garantia para 03, 04 ou 05 anos para reposição de peças, mão de obra, para o monitor, com atendimento do tipo "on-site" através de aquisição da CONTRADA de carepack de extensão de garantia, devendo descrever em sua proposta comercial a descrição da extensão da garantia (HP Carepack);
- A assistência técnica “on-site” será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;

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- Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa, salvo quando o defeito for provocado por uso inadequado dos equipamentos;
- Certificado de Garantia é válido em todo o território nacional;
- Abertura do equipamento para limpeza, adição de memória ou SSD pela CONTRATANTE não implicará em perca da garantia desde que não cause mau uso. A garantia da HP não cobrirá o suporte destas peças.

Declaramos ainda que, o produto **9Z0P1AV#TMP** – EliteBook 640 G11:

- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;
- Informações técnicas básicas como modelo do processador, capacidade de memória instalada, capacidade e tipo do dispositivo de armazenamento, versão do sistema operacional, tamanho da tela do notebook e garantia padrão de fábrica estarão descritas na proposta comercial emitida pela CONTRADA;
- Modelo de equipamento ofertado é a mais recente geração disponibilizada pela HP com comercialização no Brasil;
- A HP disponibiliza a ferramenta HP Support Assistant que permite a verificação e instalação das últimas atualizações de todas as ferramentas e drivers disponibilizadas pela HP para o equipamento. Sendo capaz de monitorar o sistema, realizar diagnósticos, emitir alertas e ajudar a reparar erros do sistema, ajudando assim a manter a saúde e segurança do sistema. Permite verificar o status da garantia pela ferramenta;
- Possui BIOS da HP, desenvolvida pela HP, em conformidade com a especificação minima UEFI 2.7 (http://www.uefi.org/) e capturáveis pela aplicação de inventário como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com descrição do modelo, número de série e campo de registro de número de patrimônio com extensão mínima de 15 digitos, todos gravados em memória não volátil e sendo estas capituraveis por aplicações de inventario como por exemplo SCCM, Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com interface gráfica com navegação utilizando mouse ou teclado, disponível em mais de 3 idiomas (por exemplo: português, espanhol, inglês etc.);
- Possui BIOS atualizável com opção de recuperação de falha, a partir de arquivo de recuperação no disco rígido ou USB externa;
- Possui BIOS com suporte à verificação de integridade, através do recurso Hp Sure Start;
- As atualizações da BIOS, quando necessárias, são disponibilizadas no site da HP Inc., com atualização via download na internet diretamente na interface de configuração da BIOS também;
- Possui BIOS implementada em “flash ROM” atualizável diretamente pelo microcomputador, utilizando memória não volátil e reprogramável, Plug and Play, entregue na versão mais atual disponibilizada pela HP. Podendo ser atualizada por software de gerenciamento remoto;
- Possui BIOS com capacidade de habilitar / desabilitar portas USB, webcam, microfone, WiFi;
- Possui BIOS com possibilidade de configuração de senhas de Setup para Power On, Administrador e unidade de armazenamento;
- Possui BIOS com suporte à tecnologia de previsão/contingenciamento de falhas de disco rígido S.M.A.R.T habilitada;
- Possui BIOS com suporte a boot por pendrive ou unidade de armazenamento externo, conectado a uma porta USB 2.0 ou superior;
- Possui BIOS compatível com o padrão mínimo ACPI 6.0. E também compatível com os padrões: DMI, SNMP, WMI, SMBIOS;
- Possui BIOS em conformidade com a normativa NIST 800-147 e NIST 800-193 (HP Sure Start);

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- Possui a ferramenta HP Secure Erase integrada na BIOS, que possibilita apagar de forma definitiva e irrecuperável todos os dados da unidade de armazenamento, permitindo o descarte seguro de seus equipamentos (NIST 800-88);
- Possui BIOS com ferramenta de diagnóstico UEFI de componentes internos de hardware (processador, memória, unidade de armazenamento, áudio, teclado, rede, placa mae, portas USB e vídeo). Acessivel via BIOS ou teclas de atalho (F1...F12). A mensagem de erro é suficiente para abertura de chamado em garantia;
- Possui sistema de monitoramento de temperatura controlada pela BIOS, adequado ao processador, fonte e demais componentes internos ao gabinete;
- Possui recurso para realizar downgrade de BIOS e replicação de configurações de BIOS em escala utilizando um arquivo referencia ou via Powershell;
- Possui placa mãe fabricada e desenvolvida pela HP, exclusiva para o modelo, com o nome da HP identificado na mesma;
- Possui placa mãe com capacidade de desligamento do vídeo e da unidade de armazenamento após tempo determinado pelo usuário e reiniciar por acionamento de teclado ou pela movimentação do mouse e possui função de economia de energia;
- Possui chip TPM integrado, acompanhado de drivers e a ferramenta nativa do Windows (tpm.msc) para utilização do chip e possibilitando a utilização de todos os recursos de segurança e criptografia (A ferramenta tpm.msc é fornecida com os equipamentos adquiridos com o Sistema Operacional Windows 10 / 11 Pro);
- O chipset é do mesmo fabricante do processador, com tecnologia que permite que o sistema retome rapidamente do estado de hibernação tanto para unidades de armazenamento do tipo SATA e do tipo PCIe;
- Sempre que o equipamento for inicializado, será mostrado no monitor de vídeo o nome da HP;
- Possuem os mesmos padrões de cores, sendo a prata ou cinza escuro a cor predominante e com o logotipo da HP impresso;
- Possui acabamento interno composto de superfícies não cortantes;
- O gabinete possui tratamento anticorrosivo;
- O gabinete possui base/superfície antiderrapante;
- Possui gabinete feito em liga metálica de alumínio e dobradiças em liga metálica para maior resistência.
- Possui afixado no gabinete do equipamento, o Selo Certificado de Autenticidade (COA – Certificate of Authenticity) do software Windows na versão instalada e com serial de ativação do sistema operacional gravado no BIOS, quando adquirido com o sistema operacional Windows 11, conforme descrito na proposta comercial;
- O fluxo do ar interno segue as orientações do fabricante do microprocessador;
- Possui processador da geração mais recente fabricada pela HP no Brasil para este modelo de notebook de uso corporativo;
- Possui tecnologia implementada que controle o nível de desempenho do processador automaticamente, ajustando dinamicamente a frequência e a voltagem a cada a necessidade requerida pela atividade do momento para que seja otimizada a autonomia de bateria do equipamento;
- Possui suporte a implementação de tecnologia dual-channel para a memória RAM;
- As unidades de armazenamento disponíveis para fabricação do modelo, possuem suporte à tecnologia de segurança SMART e NCQ;
- Todos os conectores das portas de entrada/saída são identificados por cores ou símbolos, de acordo com o padrão PC'99 System Design Guide;
- Possui controladora de áudio onboard, com entrada e saída de áudio estéreo (combo jack), capaz de reproduzir os sons gerados pelo sistema (como musicas e beeps de alerta de diagnósticos), e está conectado diretamente a placa mãe sem uso de adaptadores, com suporte a 16bits;
- O sistema de áudio onboard possui a possibilidade de desativação por software ou automaticamente quando houver conexão com a caixa de som ou fone de ouvido;
- Possui controladora de vídeo integrada, com suporte a até 03 monitores simultaneamente (terceiro monitor através da porta USB tipo C), de forma estendida ou espelhada, com capacidade de alocar

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no mínimo 1.5GB de memória de vídeo, compartilhada de forma dinâmica com a memória RAM. Possui suporte para DirectX 12 e Open GL 4.5 e compatibilidade do driver com o padrão WDDM (Windows Display Driver Model);

- Possui controladora de rede Gigabit Ethernet 10/100/1000 Mbps com reconhecimento automático da velocidade da rede, com capacidade de operar no modo full-duplex, autosense, plug and play, com suporte ao protocolo SNMP, totalmente configurável por software, com suporte a VLAN, com suporte a PXE 2.1 e com função Wake-On-Lan instalada e em funcionamento. Com conector RJ-45 com LEDs de diagnostico;
- Possui interface de comunicação wireless integrada, com suporte aos padrões 802.11ax, 802.11ac, 802.11a, 802.11b, 802.11g e 802.11n, com suporte aos protocolos 802.11i (WLAN security, TKIP e AES), WPA, WPA2, WEP 64 e 128, IEEE 802.11 (Wired Equivalent Privacy), IEEE 802.1x. Com certificado de homologação válido da ANATEL, e no Wi-fi Certified Aliance. O ajuste da potência é de acordo com a recepção do sinal, de forma a proporcionar economia de bateria;
- Possui teclado da HP integrado, com todos os caracteres da língua portuguesa incluindo ç, com 83 teclas, com teclado numérico embutido na fileira superior, com teclas Windows Logo (acesso ao menu iniciar), com LEDs indicativos de “caps lock”. A impressão sobre as teclas é do tipo permanente, não apresentando desgaste por abrasão ou uso prolongado e com sistema de proteção contra derramamento acidental de líquidos;
- Possui dispositivo apontador integrado, do tipo “touchpad”, integrado no gabinete, com dois botões integrados e uma área para a função “scroll” (botão de rolagem), com suporte a múltiplos gestos tais como pinça e zoom;
- Fonte externo com ajuste automático 100~240v (bivolt), suficiente para suportar todas as configurações do equipamento conforme as especificações técnicas contidas no catálogo técnico do mesmo, permitindo o funcionamento por no mínimo 10 horas por dia e 5 dias por semana;
- Possui cabo de energia para a fonte de alimentação de acordo com o novo padrão ABNT (NBR 14136), com comprimento minimo de 1,5m (total fonte mais cabo de energia);
- Todos os componentes do produto são novos (sem uso, reforma ou recondicionamento) e estão em linha de fabricação;
- Pertence a linha corporativa da HP;
- A HP possui programas de Logística Reversa (https://www.hp.com/br-pt/hp-information/sustainable-impact/planet-product-recycling.html);
- São bens constituídos em parte, por material reciclado, atóxico, biodegradável e atendem a diretiva RoHS;
- Todos os itens e seus acessórios são novos, não recondicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, frisagens, furações, fitas adesivas, marcas, falhas de fabricação ou qualquer outro procedimento ou emprego de materiais inadequados que adaptem forçadamente o equipamento ou suas partes que sejam fisicamente ou logicamente incompatíveis;
- As unidades dos equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, utilizando sempre que possível de materiais recicláveis, de forma a garantir a máxima proteção durante o transporte e a armazenagem;
- Cada equipamento possui um número de série único, afixado em local visível em etiqueta de difícil remoção ou impresso a laser, constando a marca, o modelo e o número de série do equipamento e também na embalagem;
- A HP possui página na Internet no qual pelo número de série é possível verificar o início e fim do período de garantia do equipamento;
- Os drivers, softwares e sistema operacional fornecido com o equipamento da HP estão disponíveis para download no site da HP, permitindo a instalação e recuperação do sistema operacional ao padrão de fábrica.
- A HP disponibiliza a ferramenta HP Cloud Recovery que permite realizar o download dos Drivers e do Sistema Operacional de forma automatizada para gerar pendrive de reinstalaçao;
- É disponibilizada documentação técnica necessária à instalação e operação do equipamento em português;
- A HP Disponibiliza “Central de atendimento telefônico” com número de telefone 0800 ou Whatsapp para abertura de chamado, em dias úteis, (segunda-feira a sexta-feira), em horário

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comercial (das 8h às18h) e “Central de atendimento via sistema web” para abertura de chamado 24x07, (domingo a domingo), a qualquer horário (das 00:00h às 23:59h);

- A HP Mantém os registros dos chamados que foram abertos, mantendo as informações que foram registradas sobre o mesmo;
- A ferramenta Web de abertura de chamados da HP permite que o cliente a visualize e acompanhe os chamados abertos anteriormente;
- Possui garantia padrão de fábrica de 01 ano para reposição de peças, mão de obra, com atendimento "on-site", conforme descrito na proposta comercial emitida pela CONTRATADA;
- Permite a extensão de garantia para 03, 04 ou 05 anos para reposição de peças, mão de obra, com atendimento do tipo "on-site" através de aquisição da CONTRADA de carepack de extensão de garantia, devendo descrever em sua proposta comercial a descrição da extensão da garantia (HP Carepack);
- A assistência técnica “on-site” será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;
- Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa, salvo quando o defeito for provocado por uso inadequado dos equipamentos;
- Certificado de Garantia é válido em todo o território nacional;
- Abertura do equipamento para limpeza, adição de memória ou SSD pela CONTRATANTE não implicará em perca da garantia desde que não cause mau uso. A garantia da HP não cobrirá o suporte destas peças.

Declaramos ainda que, o produto **9A816AV#TMP** – ZBook Power 16 inch G11:

- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;
- Informações técnicas básicas como modelo do processador, capacidade de memória instalada, capacidade e tipo do dispositivo de armazenamento, versão do sistema operacional, tamanho e especificação da tela do notebook e garantia padrão de fábrica estarão descritas na proposta comercial emitida pela CONTRADA;
- Modelo de equipamento ofertado é a mais recente geração disponibilizada pela HP com comercialização no Brasil;
- A HP disponibiliza a ferramenta HP Support Assistant que permite a verificação e instalação das últimas atualizações de todas as ferramentas e drivers disponibilizadas pela HP para o equipamento. Sendo capaz de monitorar o sistema, realizar diagnósticos, emitir alertas e ajudar a reparar erros do sistema, ajudando assim a manter a saúde e segurança do sistema. Permite verificar o status da garantia pela ferramenta;
- Possui BIOS da HP, desenvolvida pela HP, em conformidade com a especificação mínima UEFI 2.7 (http://www.uefi.org/) e capturáveis pela aplicação de inventário como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com descrição do modelo, número de série e campo de registro de número de patrimônio com extensão mínima de 15 dígitos, todos gravados em memória não volátil e sendo estas capturáveis por aplicações de inventario como por exemplo Microsoft End Point manager, SCCM, Landesk, etc;
- Possui BIOS com interface gráfica com navegação utilizando mouse ou teclado, disponível em mais de 3 idiomas (por exemplo: português, espanhol, inglês etc.);
- Possui BIOS atualizável com opção de recuperação de falha, a partir de arquivo de recuperação no disco rígido ou USB externa;
- Possui BIOS com suporte à verificação de integridade, através do recurso HP Sure Start;
- As atualizações da BIOS, quando necessárias, são disponibilizadas no site da HP Inc., com atualização via download na internet diretamente na interface de configuração da BIOS também;

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- Possui BIOS implementada em “flash ROM” atualizável diretamente pelo microcomputador, utilizando memória não volátil e reprogramável, Plug and Play, entregue na versão mais atual disponibilizada pela HP. Podendo ser atualizada por software de gerenciamento remoto;
- Possui BIOS com capacidade de habilitar / desabilitar portas USB, webcam, microfone, WiFi;
- Possui BIOS com possibilidade de configuração de senhas para Power On, Administrador e unidade de armazenamento;
- Possui BIOS com suporte à tecnologia de previsão/contingenciamento de falhas de disco rígido S.M.A.R.T habilitada;
- Possui BIOS com suporte a boot por pendrive ou unidade de armazenamento externo, conectado a uma porta USB 2.0 ou superior;
- Possui BIOS compatível com o padrão ACPI 6.0. E também compatível com os padrões: DMI, SNMP, SMBIOS;
- Possui BIOS em conformidade com a normativa NIST 800-147 e NIST 800-193 (HP Sure Start);
- Possui a ferramenta HP Secure Erase integrada na BIOS, que possibilita apagar de forma definitiva e irrecuperável todos os dados da unidade de armazenamento, permitindo o descarte seguro de seus equipamentos (NIST 800-88);
- Possui BIOS com ferramenta de diagnóstico UEFI de componentes internos de hardware (processador, memória, unidade de armazenamento, áudio, teclado, rede, placa mãe, portas USB e vídeo). Acessível via BIOS ou teclas de atalho (F1...F12). A mensagem de erro é suficiente para abertura de chamado em garantia;
- Possui sistema de monitoramento de temperatura controlada pela BIOS, adequado ao processador, fonte e demais componentes internos ao gabinete;
- Possui recurso para realizar downgrade de BIOS e replicação de configurações de BIOS em escala utilizando um arquivo referência ou via Powershell;
- Possui placa mãe fabricada e desenvolvida pela HP, exclusiva para o modelo, com o nome da HP identificado na mesma;
- Possui placa mãe com capacidade de desligamento do vídeo e da unidade de armazenamento após tempo determinado pelo usuário e reiniciar por acionamento de teclado ou pela movimentação do mouse e possui função de economia de energia;
- Possui chip TPM integrado, acompanhado de drivers e a ferramenta nativa do Windows (tpm.msc) para utilização do chip e possibilitando a utilização de todos os recursos de segurança e criptografia (A ferramenta tpm.msc é fornecida com os equipamentos adquiridos com o Sistema Operacional Windows 10 / 11 Pro);
- O chipset é do mesmo fabricante do processador, com tecnologia que permite que o sistema retome rapidamente do estado de hibernação tanto para unidades de armazenamento do tipo SATA e do tipo PCIe;
- Sempre que o equipamento for inicializado, será mostrado no monitor de vídeo o nome da HP;
- Possuem os mesmos padrões de cores, sendo o prata ou cinza escuro a cor predominante e com o logotipo da HP impresso;
- Possui acabamento interno composto de superfícies não cortantes;
- O gabinete possui tratamento anticorrosivo;
- O gabinete possui base/superfície antiderrapante;
- Possui gabinete feito em liga metálica e dobradiças em liga metálica para maior resistência.
- Possui afixado no gabinete do equipamento, o Selo Certificado de Autenticidade (COA – Certificate of Authenticity) do software Windows na versão instalada e com serial de ativação do sistema operacional gravado no BIOS, quando adquirido com o sistema operacional Windows 11, conforme descrito na proposta comercial;
- O fluxo do ar interno segue as orientações do fabricante do microprocessador;
- Possui processador da geração mais recente fabricada pela HP no Brasil para este modelo de notebook de uso corporativo;
- Possui tecnologia implementada que controle o nível de desempenho do processador automaticamente, ajustando dinamicamente a frequência e a voltagem a cada a necessidade requerida pela atividade do momento para que seja otimizada a autonomia de bateria do equipamento;

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- Possui suporte a implementação de tecnologia dual-channel para a memória RAM;
- As unidades de armazenamento disponíveis para fabricação do modelo, possuem suporte à tecnologia de segurança SMART e NCQ;
- Todos os conectores das portas de entrada/saída são identificados por cores ou símbolos, de acordo com o padrão PC'99 System Design Guide;
- Possui controladora de áudio onboard, com entrada e saída de áudio estéreo (combo jack), capaz de reproduzir os sons gerados pelo sistema (como músicas e beeps de alerta de diagnósticos), e está conectado diretamente a placa mãe sem uso de adaptadores, com suporte a 16bits;
- O sistema de áudio onboard possui a possibilidade de desativação por software ou automaticamente quando houver conexão com a caixa de som ou fone de ouvido;
- Possui controladora de vídeo integrada ou dedicada conforme descrito na proposta comercial da CONTRATADA, com suporte a até 03 monitores simultaneamente (terceiro monitor através da porta USB tipo C), de forma estendida ou espelhada. Possui suporte para DirectX 12 e Open GL 4.5 e compatibilidade do driver com o padrão WDDM (Windows Display Driver Model);
- Possui interface de comunicação wireless integrada, com suporte aos padrões 802.11ax, 802.11ac, 802.11a, 802.11b, 802.11g e 802.11n, com suporte aos protocolos 802.11i (WLAN security, TKIP e AES), WPA, WPA2, WEP 64 e 128, IEEE 802.11 (Wired Equivalent Privacy), IEEE 802.1x. Com certificado de homologação válido da ANATEL, e no Wi-fi Certified Aliance. O ajuste da potência é de acordo com a recepção do sinal, de forma a proporcionar economia de bateria;
- Possui teclado da HP integrado, com todos os caracteres da língua portuguesa incluindo ç, com 83 teclas, com teclado numérico embutido na fileira superior, com teclas Windows Logo (acesso ao menu iniciar) e Aplicação (acesso ao menu de atalhos, equivalente ao botão direito do mouse), com LEDs indicativos de “caps lock”. A impressão sobre as teclas é do tipo permanente, não apresentando desgaste por abrasão ou uso prolongado e com sistema de proteção contra derramamento acidental de líquidos;
- Possui dispositivo apontador integrado, do tipo “touchpad”, integrado no gabinete, com dois botões integrados e uma área para a função “scroll” (botão de rolagem), com suporte a múltiplos gestos tais como pinça e zoom;
- Fonte externo com ajuste automático 100~240v / 50-60Hz (bivolt), suficiente para suportar todas as configurações do equipamento conforme as especificações técnicas contidas no catálogo técnico do mesmo, permitindo o funcionamento por no mínimo 10 horas por dia e 5 dias por semana;
- Possui cabo de energia para a fonte de alimentação de acordo com o novo padrão ABNT (NBR 14136), com comprimento minimo de 1,5m (total fonte mais cabo de energia);
- Todos os componentes do produto são novos (sem uso, reforma ou recondicionamento) e estão em linha de fabricação;
- Pertence a linha corporativa da HP;
- A HP possui programas de Logística Reversa (https://www.hp.com/br-pt/hp-information/sustainable-impact/planet-product-recycling.html);
- São bens constituídos em parte, por material reciclado, atóxico, biodegradável e atendem a diretiva RoHS;
- Todos os itens e seus acessórios são novos, não recondicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, frisagens, furações, fitas adesivas, marcas, falhas de fabricação ou qualquer outro procedimento ou emprego de materiais inadequados que adaptem forçadamente o equipamento ou suas partes que sejam fisicamente ou logicamente incompatíveis;
- As unidades dos equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, utilizando sempre que possível de materiais recicláveis, de forma a garantir a máxima proteção durante o transporte e a armazenagem;
- Cada equipamento possui um número de série único, afixado em local visível em etiqueta de difícil remoção ou impresso a laser, constando a marca, o modelo e o número de série do equipamento e também na embalagem;
- A HP possui página na Internet no qual pelo número de série é possível verificar o início e fim do período de garantia do equipamento;

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- Os drivers, softwares e sistema operacional fornecido com o equipamento da HP estão disponíveis para download no site da HP, permitindo a instalação e recuperação do sistema operacional ao padrão de fábrica.
- A HP disponibiliza a ferramenta HP Cloud Recovery que permite realizar o download dos Drivers e do Sistema Operacional de forma automatizada para gerar pendrive de reinstalação;
- É disponibilizada documentação técnica necessária à instalação e operação do equipamento em português;
- A HP Disponibiliza “Central de atendimento telefônico” com número de telefone 0800 ou Whatsapp para abertura de chamado, em dias úteis, (segunda-feira a sexta-feira), em horário comercial (das 8h às18h) e “Central de atendimento via sistema web” para abertura de chamado 24x07, (domingo a domingo), a qualquer horário (das 00:00h às 23:59h);
- A HP Mantém os registros dos chamados que foram abertos, mantendo as informações que foram registradas sobre o mesmo;
- A ferramenta Web de abertura de chamados da HP permite que o cliente a visualize e acompanhe os chamados abertos anteriormente;
- Possui garantia padrão de fábrica de 01 ano para reposição de peças, mão de obra, com atendimento "on-site", conforme descrito na proposta comercial emitida pela CONTRATADA;
- Permite a extensão de garantia para 03, 04 ou 05 anos para reposição de peças, mão de obra, com atendimento do tipo "on-site" através de aquisição da CONTRADA de carepack de extensão de garantia, devendo descrever em sua proposta comercial a descrição da extensão da garantia (HP Carepack);
- A assistência técnica “on-site” será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;
- Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa, salvo quando o defeito for provocado por uso inadequado dos equipamentos;
- Certificado de Garantia é válido em todo o território nacional;
- Abertura do equipamento para limpeza, adição de memória ou SSD pela CONTRATANTE não implicará em perca da garantia desde que não cause mau uso. A garantia da HP não cobrirá o suporte destas peças.

Durante o período de garantia do Produto HP, a Fabricante HP responsabiliza-se pela garantia no prazo e condições padrão HP, conforme especificado no termo de garantia que acompanha o Produto HP e no manual técnico do Produto HP.

Serviços adicionais ao especificado na garantia padrão da Fabricante HP poderá ser adquiridos pelo Parceiro HP, com prazos e condições customizados.

B20A5LS#AK4 – HP Elite Mini 800 G9 – Carepack adicional – **U7925E** - HP 5-year Next Business Day Onsite Desktop Hardware Support.

67V68AV#TMP – Z2 Tower G9 – Carepack adicional – **UA935E** - HP 5-year Next Business Day Response Onsite Workstation Hardware Support.

9Z0P1AV#TMP – EliteBook 640 G11 – Carepack adicional – **UA6A3E** - HP 5-year Next Business Day Response Onsite Notebook Hardware Support.

9A816AV#TMP – ZBook Power 16-inch G11 – Carepack adicional – **U85RBE** - HP 5y Onsite Mobile Workstation Support.

Declaramos que os equipamentos fabricados pela HP são novos, que não foram submetidos a uso, nem recondicionamento, ressalvados os testes de fábrica.

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Os Produtos da marca HP são de fabricação própria ou homologados por regime de O&M e estão em linha de produção atual.

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Declaramos, ainda, que a HP possui site na internet - www.hp.com.br – onde pode ser efetuado download de drivers para os Produtos HP e número de telefone para Grande São Paulo São Paulo (11) 3878-8338 / Demais Localidades: 0800-709-7751 / Whats app (11) +55 11 3230 4672 para informações e aberturas de chamados técnicos.

A Rede de Serviços Autorizados HP é amplamente distribuída em todo o território nacional, e conta com parceiros altamente qualificados relacionados abaixo. Trata-se de rede de parceiros com técnicos devidamente treinados e certificados pela HP, garantindo assim a excelência e a qualidade dos serviços prestados:

Unisys:	**Unisys:**	**Procedata:**
Acre	Paraíba	Minas Gerais
Alagoas	Paraná	
Amapá	Pernambuco	**Simpress:**
Amazonas	Piauí	Cidade: Vitoria
Bahia	Rio Grande do Norte	Cidade: Brasilia
Ceará	Rio Grande do Sul	Cidade: Recife
Espírito Santo	Rondônia	Cidade: Fortaleza
Goiás	Roraima	
Maranhão	Santa Catarina	**Técnicos HP:**
Mato Grosso	Sergipe	São Paulo (Capital)
Mato Grosso do Sul	Tocantins	Rio de Janeiro
Pará	Distrito Federal	Bahia (Salvador)
Paraíba	São Paulo (Interior)	Paraná (Curitiba)

Esta declaração é válida por 30 (trinta) dias corridos, a contar da data de sua emissão.

Atenciosamente,

JHENIFER CRISTINA ARAUJO DE JESUS:35253377875

Assinado de forma digital por JHENIFER CRISTINA ARAUJO DE JESUS:35253377875
Dados: 2025.06.10 16:16:32 -03'00'

Jhenifer Cristina Araujo de Jesus
Procuradora
HP Indústria e Comércio de Equipamentos Eletrônicos Ltda.

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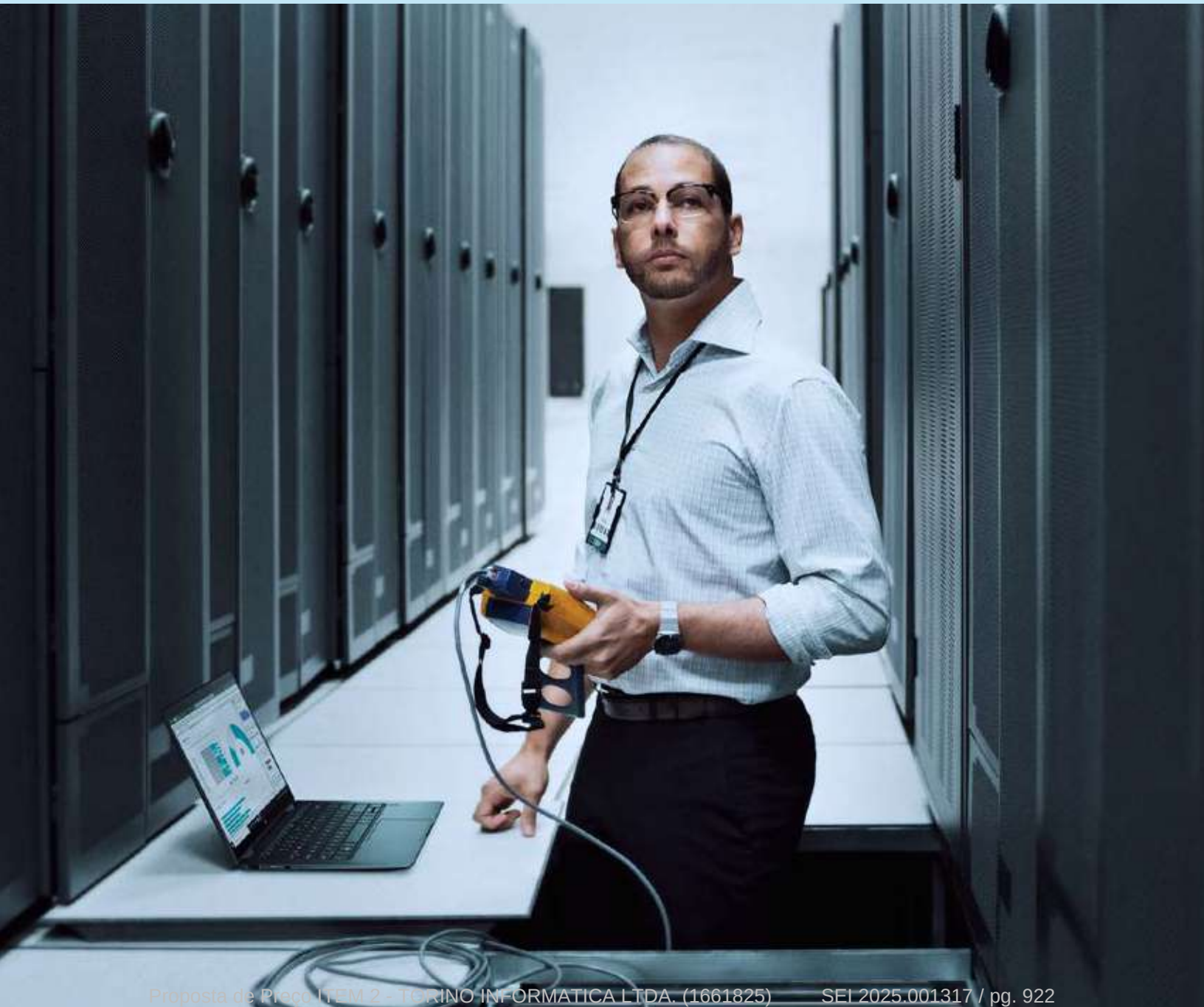
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TECHNICAL WHITEPAPER

HP WOLF SECURITY

HP Secure Erase for SSDs & HDDs

Safely and effectively erase sensitive data



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HP Secure Erase is a critical resource for IT

IT administrators are tasked with protecting sensitive data on business PCs, even after devices are recycled, disposed of, or reprovisioned. HP Secure Erase[1] makes it easy to sanitize local magnetic hard disk drives (HDDs) or solid-state drives (SSDs) to industry standards before disposal or recycling.

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Local storage sanitation—an important last step in the PC lifecycle

In an environment where sensitive user information is under attack at every stage of the system lifecycle, ensuring that data can be securely erased from a data storage device is paramount. Information can be vulnerable if left on a storage drive when a system is recycled, disposed of, or reprovisioned for another user. Properly sanitizing storage drives according to industry standards is a critical step in the PC lifecycle.

In addition to meeting industry standards for data erasure in standard magnetic hard disk drives (HDDs), HP has taken the additional step of extending HP Secure Erase to also support industry-standard Solid State Drives (SSDs). HP Secure Erase is a standard feature in all HP business notebooks, supporting the methods outlined in the National Institute of Standards and Technology Special Publication 800-88. Manufacturers of industry standard SSDs approved for use in HP business notebook products have verified that running HP Secure Erase on their SSDs fully removes all user data so that it cannot be recovered.

Erasing SSDs vs. HDDs

Using HP Secure Erase on standard HDDs, data is overwritten using a data-removal algorithm that writes multiple patterns on every sector, cluster, and bit of the hard drive. This process is documented in the Department of Defense (DOD) 5220.22-M Chapter 8 specification.[2] This overwrite-based process is only effective on standard HDDs. Writing a predetermined data pattern to a NAND flash-based SSD does not result in an empty drive. Instead it results in a drive full of data that must be erased before new user data can be written, which massively shortens the service life.

INDUSTRY-STANDARD DISK SANITATION

To securely erase all user data from an SSD and restore the drive to a fresh-out-of-box (FOB) performance state, the National Institute of Standards Technology (NIST) supports the following commands that meet the minimum guideline for media sanitization of SSDs (NIST SP800- 88 Rev.[1]).

Block Erase is a function enabled only in SATA SSDs, using the ATA command BLOCK ERASE EXT. Block Erase will instruct the SSD controller to apply an erase voltage to all NAND cells of the device (including any cells which form blocks that have been retired, re-allocated, involved in garbage collection or

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over-provisioning, or are part of a reserved pool of spare blocks). This functionality provides a very fast, complete and robust erasure of the SSD.

Crypto Erase is a function enabled only in SATA SSDs. Using the ATA command CRYPTO SCRAMBLE EXT, this function removes the encryption key effectively making it impossible to reconstruct any of the data on the storage device. Crypto Scramble is implemented on both HDD and SSD SED devices.

Block Erase and Crypto Erase Sanitize Operation is a function enabled only in PCIe NVMe SSDs. NVMe does not follow conventional ATA feature sets. Instead, NVMe devices support a sanitization function, inside their FORMAT NVM command structure that includes BLOCK ERASE SANITIZE and CRYPTO ERASE SANITIZE operation. So, by setting some specific bits in this command structure, a function similar to Secure Erase can be carried out.

WHAT DATA IS NOT ERASED?

After deploying HP Secure Erase on an SSD, all data in the user space is completely and irretrievably erased, and every block in the user space is ready to accept new host-written data, which moves the drive to its highest performance state (FOB).

However, some data must be left in place, including data required for normal drive operation: SSD firmware copies that reside in the NAND, all SMART data, and retired NAND block mapping tables.

CONCLUSION

Writing or overwriting data to drive is the accepted practice of securely eliminating data from an HDD. However, in the case of NAND flash-based SSDs, overwriting is redundant, unnecessary, and a potentially insecure method of eliminating data.

By using HP Secure Erase, users can ensure that SSDs are completely sanitized and meet the minimum industry standards. HP Secure Erase is easily enabled through the standard F10 BIOS setup process on most HP business PCs.

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HP WOLF SECURITY

[1] For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 “Clear” sanitation method. Secure Erase does not support platforms with Intel® Optane™. HP Secure Erase does not support platforms with Intel® Optane.

[2] Specification 5220.22-M no longer exists. The DoD has subsequently decided that secure information must be destroyed to remain secure. The NIST guidelines restate in clear terms that a two-person rule (read human verification) shall be implemented but did not establish guidelines on the method of sanitization (it could be a single wipe with dual human verification, or a single destruction with the same).

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WHITEPAPER

HP WOLF SECURITY

HP Sure Start



HP Sure Start

Going beyond system BIOS protection,

HP Sure Start Gen7 protects against firmware attacks and/or accidental corruption for the majority of boot-critical system firmware.

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Introduction

HP Sure Start is a comprehensive security and advanced resilience firmware solution. Going well beyond system BIOS protection, HP Sure Start protects against firmware attacks and/or accidental corruption for the majority of boot-critical system firmware.

With little or no interruption to user productivity, HP Sure Start can automatically detect, stop, and recover from attacks or corruption without IT intervention. Every time the PC powers on, HP Sure Start automatically validates the integrity of the firmware to help ensure that the PC is safeguarded from malicious attacks. Once the Operating System is running on the PC, runtime intrusion detection constantly monitors memory. In the case of an attack, the PC can self-heal using an isolated "golden copy" of the firmware in minutes.

Why is firmware protection important?

As our world becomes more connected, cyber-attacks are targeting client device firmware and hardware with increasing frequency and sophistication. Tools and techniques to attack firmware were once theoretical and thought only to be available to nation-states. Such tools and techniques have since been shown to not only exist, but to be readily available in the public domain.

The critical device firmware (HP BIOS, HP Endpoint Security Controller firmware, Intel Management Engine Firmware, AMD Security Processor Firmware, etc.) is an attractive target for attackers because of the potential advantages a successful breach could provide:

Persistence: Firmware resides in a nonvolatile memory on the circuit board and can't be removed simply by erasing the hard drive.

Control: Firmware executes at the highest privilege level—outside of the OS domain— which enables the possibility of OS-independent malware.

Stealth: Firmware occupies a region of memory that is completely inaccessible to the operating system and system software; since it can't be scanned by antivirus it may never be detected.

Difficulty of recovery: All these aspects make it extremely difficult to recover from this type of infection without resorting to a service event that includes a system board replacement.

The ideal solution to protect devices against this type of attack is designed from the hardware up, using “cyber resiliency” principles. These principles acknowledge that it is extremely difficult, if not impossible, to foresee and prevent every possible attack. The ideal solution not only provides enhanced protection of the firmware, but also includes a hardware rooted ability to both detect a successful attack and recover from it.

HP Sure Start provides superb firmware protection

HP Sure Start is HP’s unique and groundbreaking approach to provide advanced firmware protection and resiliency to HP PCs. It uses hardware enforcement via the HP Endpoint Security Controller (HP ESC) to provide protection of the BIOS and other critical platform firmware that reaches well beyond the industry standard and ensures that the system will only boot Genuine HP BIOS and other critical firmware. Additionally, if HP Sure Start detects tampering with BIOS, other critical firmware, or runtime System Management Mode (SMM) BIOS code, it can recover using a protected backup copy.

Summary of HP Sure Start features:

HP platform firmware authenticity enforcement and tamper protection
HP Endpoint Security Controller hardware enforcement of the system boot, so only authentic and unmodified critical firmware and HP BIOS are loaded.

Firmware health monitoring and compliance
Logging of firmware health-related events via isolated HP Endpoint Security Controller; presents the platform firmware state along with any anomalies that could indicate thwarted attacks.

Self-healing
Automatic repair of HP BIOS and other critical firmware corruption, using the HP Endpoint Security Controller isolated backup copy of HP BIOS and other critical firmware.

BIOS setting protection
Extension of the HP Endpoint Security Controller protection of the BIOS code to include HP ESC backup and integrity-checking of all user or admin- configured BIOS settings.

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Runtime Intrusion Detection
Ongoing monitoring of critical BIOS code in runtime memory (SMM) while the OS is running.

Secure boot keys protection
Significantly enhanced protection of databases and keys stored by the BIOS that are critical to the integrity of the OS secure boot feature versus standard UEFI BIOS implementation.

Protected storage
Strong cryptographic methods to store BIOS settings, user credentials, and other settings in the HP Endpoint Security Controller hardware to provide integrity protection, tamper detection, and confidentially protection for that data.

Intel® Management Engine firmware protection
Full backup, integrity monitoring, and recovery services for Intel Management Engine firmware and critical data. Fully compliant with all NIST 800-193 resilience requirements.

AMD Secure Processor firmware protection
Full backup, integrity monitoring, and recovery services for AMD Secure Processor firmware and critical data. Fully compliant with all NIST 800-193 resilience requirements.

Manageability
Administrator management of HP Sure Start capabilities with the Manageability Integration Kit (MIK) plug-in for Microsoft® System Center Configuration Manager (SCCM).

Direct Memory Access (DMA) Protection
Utilizes the I/O Memory Management Unit (IOMMU) to provide hardware protection against attacks to system memory via DMA capable thunderbolt devices. Also enables support for Microsoft. "Kernel DMA Protection for Thunderbolt™ 3" (Win10 RS4 and forward). HP Sure Start Gen6+ also extends support for protection against DMA attacks beyond external thunderbolt devices to include DMA attacks via internal slots.

For a summary of capabilities added in each generation of HP Sure Start, see Appendix A.

Third-party security certification

The HP Endpoint Security Controller hardware used in HP Sure Start has undergone third- party security assessment and has been certified to provide hardware enforcement so that only authorized firmware can start on the target PC.[1]

Assurance that a security solution works as stated is a critical piece of any purchase decision related to security products. And because a reputation for quality can only go so far, HP has exposed the HP Endpoint Security Controller inner workings for review and testing by an independent and accredited laboratory to validate that it works as claimed per publicly available criteria, methodology, and processes.

Cyber-resilient design

Not only does HP Sure Start provide enhanced BIOS protection beyond the industry standard approach, but it is designed from the hardware up to provide unmatched platform cyber-resilience to ensure critical device firmware recovery even in the event of a breach or destructive attack.

All HP Sure Start Gen6+ systems include the ability to recover from a completely erased system flash. The system flash contains the majority of the boot critical firmware elements that are required to boot the system and have reasonable functionality. Those boot critical elements include system BIOS, HP Endpoint Controller firmware, video BIOS, Intel Descriptor Region firmware, AMD Secure Processor firmware, and Intel Management Engine firmware. If any one of these firmware elements in the system flash becomes corrupted in a manner that renders that subsystem non-functional, the system will be unable to boot. With an HP Sure Start Gen5+ system, all these components are restored from the HP Sure Start private flash in order to ensure that the system does not become non-operational due to firmware attack or corruption.

HP business PCs with HP Sure Start exceed the National Institute of Standards and Technology (NIST) Platform Firmware Resiliency guidelines (Special Publication 800- 193) for host processor boot firmware and other critical platform device firmware, as discussed in Appendix C. NIST SP 800-193 is one of the leading public sector efforts to formalize requirements for cyber-resilient platforms. For more details about HP Sure Start and NIST 800-193, see Appendix C.

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HP Sure Start – Supported models

HP introduced Sure Start in 2013. Since that time, HP has enhanced Sure Start and expanded the number of products that include it. HP Sure Start is available on many HP business PCs, including Pro and Elite, platforms, Workstations, Thin Clients, and Point of Sale Systems (RPOS). HP Sure Start is available on both Intel and AMD platform in this lineup.

Architectural overview and capabilities

HP Sure Start consists of two major architectural components:

- HP Endpoint Security Controller running HP Sure Start firmware
- HP Sure Start BIOS working in conjunction with the HP Endpoint Security Controller hardware and firmware.

Firmware integrity verification - The core of HP Sure Start

The HP Endpoint Security Controller (HP ESC) is the first device in the system to execute firmware when the system powers on, active well before the system boots. The HP ESC activities include, but are not limited to, monitoring the system power button and power sequencing, then start of the host CPU execution when the user presses the power button.

When power is first applied to the platform (before the system is turned on), the HP ESC validates that its own firmware is authentic HP code before loading and executing the code. The HP ESC hardware uses industry-standard, strong cryptographic methods to perform the integrity verification. The method employs a 2048-bit HP RSA public key contained within internal permanent read-only memory. Therefore, the HP ESC is the built-in hardware-based Root of Trust (RoT) for the platform, used to validate its firmware and the HP BIOS before they are executed. This hardware Root of Trust protects against firmware replacement attacks regardless of their deployment method and serves as the foundation upon which HP platform security is built.

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Figure 1:
Firmware integrity verification process

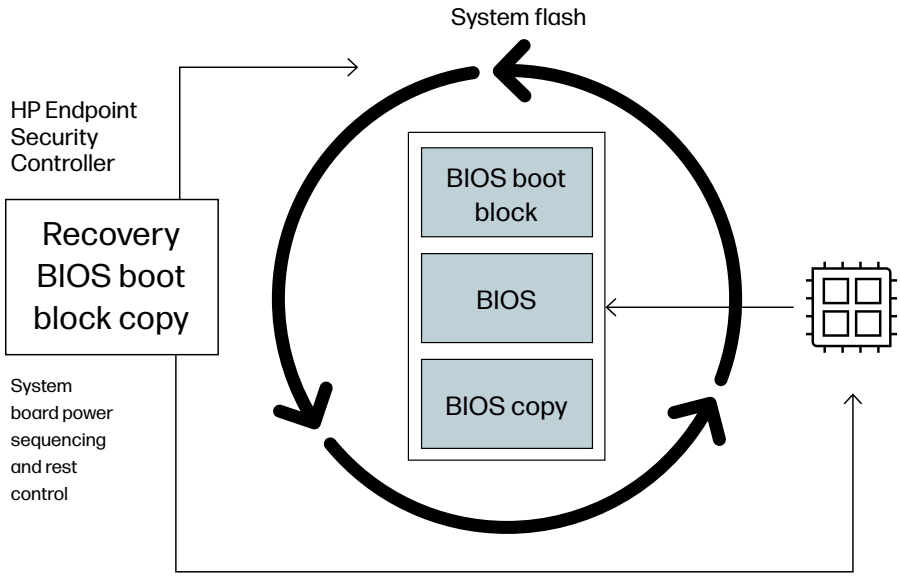


Figure 1 illustrates the firmware integrity verification process. Once the HP ESC authenticates and starts executing the HP Sure Start firmware, that firmware uses the same strong cryptographic operations to verify the integrity of the system flash BIOS boot block. If a single bit is invalid, the HP ESC replaces the system flash contents with its own copy of the HP BIOS boot block that is stored within an isolated nonvolatile memory (NVM) dedicated to the HP ESC.

The HP Sure Start design ensures that all the firmware and BIOS code running on both the HP ESC and the host CPU is the code HP intended to be on the device.*

The system flash BIOS boot block is the foundation of the HP BIOS. The HP ESC hardware ensures that the BIOS boot block is the first code that the CPU executes after a reset. Once the HP ESC determines that the BIOS boot block contains authentic HP code, it allows the CPU to begin executing code and the system to boot as it normally would.

The HP ESC also checks the integrity of the system flash boot block code each time the system is turned off or put into a hibernate or sleep mode. Since the CPU is powered off in each of these states and the CPU is therefore required to re-execute BIOS boot block code to resume, it is crucial to re-verify the integrity of the BIOS boot block each time before the CPU starts at power-on to check for tampering.

Additionally, for HP Intel models, HP Sure Start checks the integrity of the system flash BIOS boot block every 15 minutes while the system is running[2].

* Note:
The system flash boot block integrity checking, and any needed recovery performed by the HP ESC, take place while the host CPU is off. Therefore, from a user point of view, the entire operation takes place when the system is still off, in sleep mode, or hibernate mode.

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Machine-unique data integrity

The HP ESC and BIOS work together to provide advanced protection of factory-configured critical variables unique to each machine that are intended to be constant over the life of any specific platform. In the factory, a backup copy of this variable data is saved in the HP ESC nonvolatile memory store. The backup is made available to the HP Sure Start BIOS component on a read-only basis to perform integrity checking of the data on every boot. If any setting in the shared flash is different from the factory settings, the HP Sure Start BIOS components will automatically restore the data in the System Flash from the backup copy provided by the HP ESC.

Descriptor region

For HP Intel models, HP Sure Start protects the descriptor region of the system flash. Unique to Intel architecture, the descriptor region contains critical configuration parameters that are sampled by the Intel Core™ logic at reset and used thereafter to configure the Core logic. The descriptor region also includes partitioning information for the system flash that is used by the Intel Core logic to determine where the BIOS region resides within the flash and therefore where their CPU retrieves code for execution from reset. HP Sure Start monitors the integrity of this region and recovers it to the intended configuration in the event of tampering or corruption.

Network controller protection

In addition, for HP Intel models, HP Sure Start protects the network controller (NIC) settings contained with the system flash. Some HP customers have use cases that require legitimate changes to factory configured NIC settings. Therefore, HP Sure Start does not prevent changes to NIC settings by default. Instead, HP Sure Start provides a feature that, when enabled, warns the user that NIC settings have changed. In addition, HP Sure Start provides a method to restore the NIC settings to factory values. Protected settings include the MAC address, the Pre-boot Execution Environment (PXE) settings, and the remote initial program load (RPL). This restoration is possible via a read-only backup copy protected by the HP ESC.

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BIOS setting protection

As previously described, HP Sure Start verifies the integrity and authenticity of the HP BIOS code. Since this code is static after it is created by HP, digital signatures can be used to confirm both attributes of the code. The dynamic and user-configurable nature of BIOS settings, however, create additional challenges to protecting those settings. Digital signatures cannot be generated by HP and used by the HP Sure Start ESC hardware to verify those settings.

HP Sure Start BIOS setting protection provides the capability to configure the system so the HP ESC hardware is used to back up and check the integrity of all the BIOS settings preferred by the user.

When this feature is enabled on the platform, all policy settings used by BIOS are subsequently backed up and an integrity check is performed on each boot to ensure that none of the BIOS policy settings have been modified. If a change is detected, the system uses the backup from the HP Sure Start-protected storage to automatically revert to the user-defined setting.

The HP Sure Start BIOS setting protection feature generates events to the HP Sure Start ESC hardware when an attempt to modify the BIOS settings is detected. The event is logged in the HP Sure Start audit log, and the local user will receive a notification from BIOS during boot.

HP SureStart - Protected storage

Protected storage rooted in the HP Endpoint Security Controller hardware provides the highest level of protection for BIOS/firmware data and settings protected by HP Sure Start. HP Sure Start-protected storage is designed to provide confidentiality, integrity, and tamper detection even if an attacker disassembles the system and establishes a direct connection to the nonvolatile storage device on the circuit board.

Data integrity

The integrity of the dynamic data stored in nonvolatile memory by firmware and used to control the state of various capabilities is critical to the security posture of the overall platform. Dynamic data includes all BIOS settings that can be modified by the end user or administrator of the device. Examples include (but are not limited to) boot options such as the secure boot feature, BIOS administrator password and related policies, Trusted Platform Module–state control, and HP Sure Start policy settings.

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Any successful attack that bypasses the existing access restrictions designed to prevent unauthorized modifications to these settings could defeat the platform security. As an example, consider a scenario where an attacker makes an unauthorized modification to the secure boot state to disable it without being detected. In this scenario, the platform would boot the attacker's root kit before the OS starts, without the user's knowledge.

Industry-standard Unified Extensible Firmware Interface (UEFI) BIOS does implement access restrictions that should prevent unauthorized modifications to these variables, and HP implements these just like the rest of the PC industry. However, given the risks a breach of these mechanisms poses to the platform, HP Sure Start provides secondary defenses that are stronger than the baseline industry standard.

BIOS settings and other dynamic data used by firmware to control the state that is protected by HP Sure Start are stored in the isolated nonvolatile memory of the HP Endpoint Security Controller that is not directly accessible to software running on the host CPU.

Additionally, the HP ESC creates and appends unique integrity measurements each time a data element is stored in this nonvolatile memory store. The integrity measurements are based on a strong cryptographic algorithm (hashed-based message authentication code utilizing SHA-256 hashing) that is rooted to a secret contained within the HP ESC. The secret is unique to each HP ESC, such that each controller generates a unique integrity measurement given an identical element. When the data element is read back from the nonvolatile memory, the HP ESC recalculates the integrity measurement for that data element and compares it to the integrity measurement that is appended to the data. Any unauthorized changes to the data in the nonvolatile memory store result in a mis-compare. Using this approach, the HP ESC can detect tampering with data elements stored in the nonvolatile memory store.

Data confidentiality

For many of the data elements stored by the platform, maintaining confidentiality is critical. Examples include BIOS administrator password hashes, user credentials, and secrets optionally stored by firmware on behalf of the user for firmware-based features such as HP Sure Run and HP Sure Recovery.

Protection of these secrets is challenging when industry-standard UEFI BIOS approaches are used, since the nonvolatile storage is typically readable by software running on the host processor. HP Sure Start–protected storage is intended to provide much greater protection of this confidential data than a standard UEFI BIOS implementation.

In addition to a separate isolated storage, HP Sure Start leverages the Advanced Encryption Standard (AES) hardware block contained within the HP ESC to perform AES-256 encryption on all confidential data elements stored in the HP Sure Start nonvolatile memory, in addition to the data integrity measurements for those elements. The encryption key used is unique to each HP ESC and never leaves that controller, so data encrypted by any individual HP ESC component can only be decrypted by that same HP ESC.

Secure boot keys protection

Compared to the industry-standard UEFI secure boot implementation, HP Sure Start provides enhanced protection of the UEFI secure boot key databases that are stored by the firmware. These variables are critical to proper operation of the UEFI secure boot feature that verifies integrity and authenticity of the OS bootloader before allowing it to start at boot.

HP Sure Start protects UEFI secure boot key databases by maintaining a master copy in HP Sure Start–protected storage.

Any authorized modifications to the UEFI standard secure boot key databases by the OS during runtime are tracked by HP Sure Start and applied to the master copy by the HP ESC. HP Sure Start then uses the master copy in HP Sure Start– protected storage to identify and reject any unauthorized changes to the UEFI standard secure boot keys databases.

This capability, enabled by default, covers the following databases:

- Signature database (db)
- Revoked signatures database (dbx)
- Key Enrollment Key (KEK)
- Platform Key (PEK) updated dynamically at runtime by the OS

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Runtime Intrusion Detection (RTID)

On each boot, the BIOS code starts execution from flash memory at a fixed address. This is known as the BIOS boot code and provides capabilities needed before the OS starts. However, a portion of BIOS remains in DRAM that is needed to provide advanced power- management features, OS services, and other OS-independent functions while the OS is running. This BIOS code, referred to as System Management Mode (SMM) code, resides in a special area within the DRAM that is hidden from the OS. We also refer to this code as "runtime" BIOS code in the context of HP Sure Start's Runtime Intrusion Detection feature. (For more details on SMM and how it works, please see Appendix B.)

The integrity of SMM code is critical to the client device security posture. HP Sure Start checks to make sure HP SMM BIOS code is intact at OS start. By adding new protection capabilities and/or providing a means to detect any attack to that code, Runtime Intrusion Detection provides mechanisms to ensure that the SMM BIOS code remains intact while the OS is running.

Figure 2

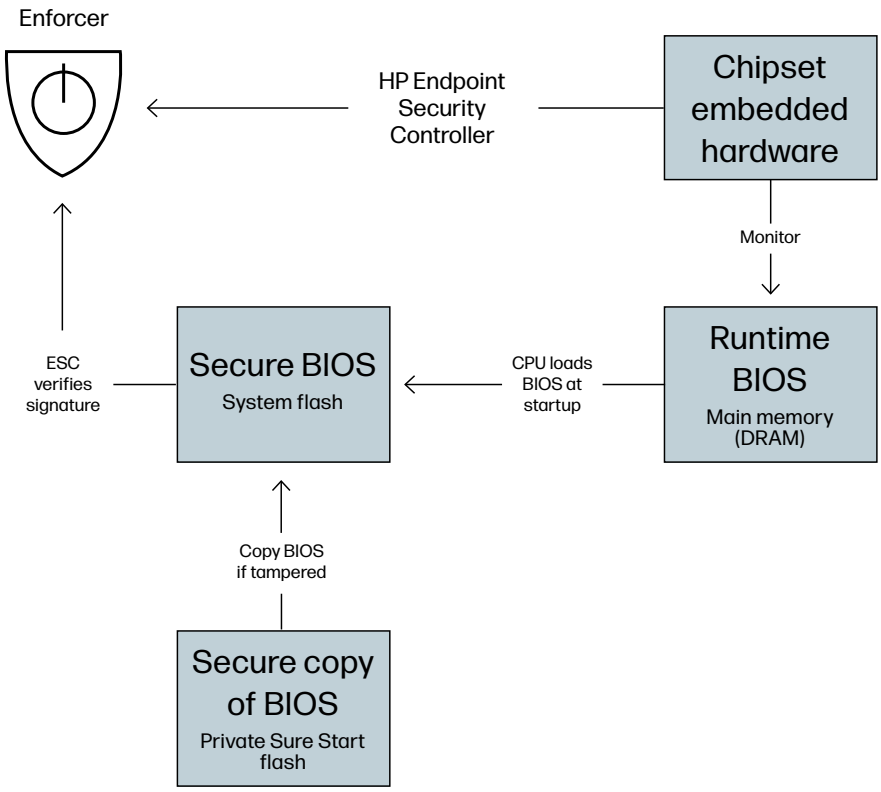


Figure 2:
Runtime Intrusion Detection uses specialized hardware embedded within the platform chipset to monitor SMM code for any changes.



Runtime Intrusion Detection architecture

The RTID feature utilizes specialized hardware in the platform chipset to detect anomalies in the Runtime HP SMM BIOS. Detection of any anomalies results in a notification to the HP Endpoint Security Controller, which can take the configured policy action independent of the CPU.

Intel® Management Engine firmware protection

All HP Sure Start Gen6+ systems include the ability to fully recover from corrupted Intel Management Engine firmware and/or critical data associated with the Intel Management Engine subsystem.

In those systems that include support for HP Sure Recover with Embedded Reimaging, HP Sure Start Gen6+ is able to recover the entire Intel Management Firmware using a copy of Intel Management engine firmware stored on the Embedded Reimaging device on the system board with no additional dependencies.

On HP Sure Start Gen6+ systems that do not support Embedded Reimaging, HP Sure Start uses a copy of the Intel Management firmware that is included on the system EFI partition on the primary mass storage device for full recovery.

In the event that the Intel Management Engine firmware update has been removed from the EFI partition, HP Sure Start Gen6+ will only perform a partial recovery of the Intel Management Engine firmware and/or critical data from the HP Sure Start private flash that will enable the system to operate with reasonable functionality. In order to fully restore all functionality provided the Intel Management Engine Firmware, it will be necessary to apply an update to the intel Management Firmware Engine firmware which will restore the full recovery image to the EFI partition.

Customers that deploy their own OS images need to take some additional steps to ensure that HP Sure Start Gen6+ can fully recover the Intel Management Engine Firmware with complete autonomy. Those steps include creating a system EFI partition that is at least 360MB, and applying an HP Intel Management Engine firmware update package.

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AMD® Secure Processor protection

All HP Sure Start Gen6+ systems include the ability to fully recover from corrupted AMD Secure Processor firmware and/or critical data associated with the AMD Secure Processor subsystem.

HP Sure Start Gen6+ is able to recover the entire AMD Secure Processor subsystem using a copy of AMD Secure Processor firmware stored within the HP Endpoint Security Controller isolated non-volatile memory with no additional dependencies.

Smart Flash

HP Sure Start Gen6+ adds Smart Flash technology which can dramatically reduce the time required for firmware updates and Sure Start firmware recovery operations. With Smart Flash, the HP Endpoint Security Controller will only modify those portions of the flash are corrupted (recovery) or changed (update) for both the HP Endpoint Security Controller backup copies of firmware and the primary copies of firmware in the primary flash.update package.

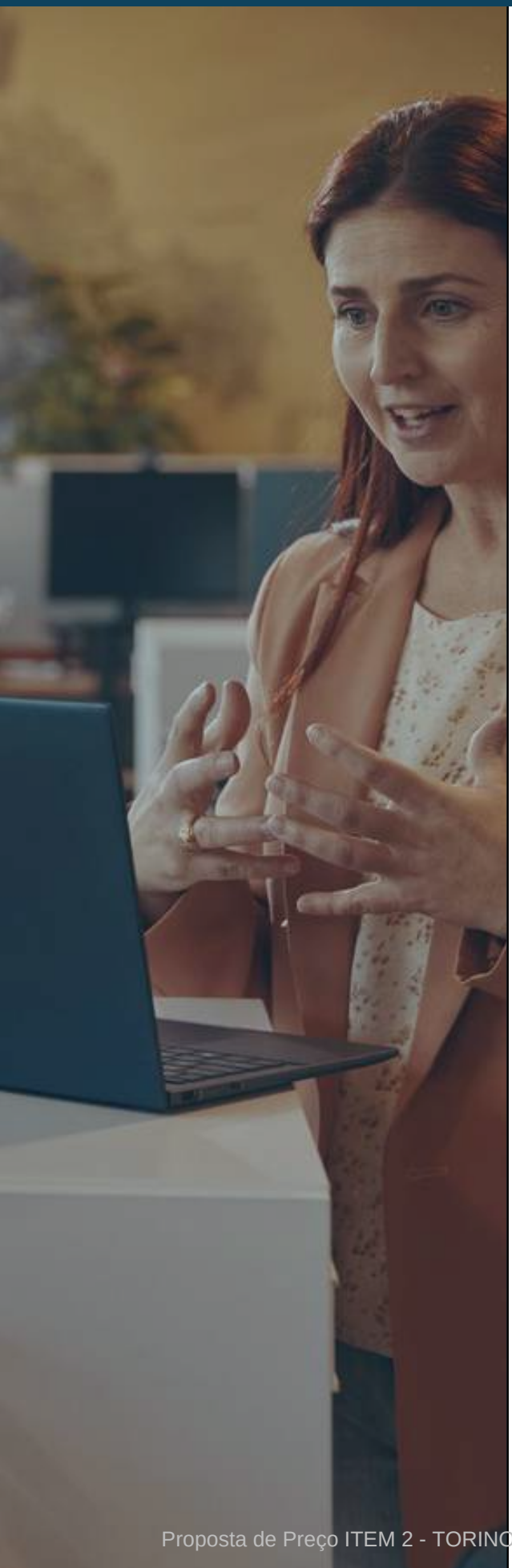
HP Endpoint Security Controller runtime intrusion detection

Starting from HP Sure Start Gen6+, the HP Endpoint Security Controller firmware utilizes a hardware Memory Protection Unit within the HP Endpoint Security Controller to detect, block, and log an event in the event of any unauthorized attempt to modify the run-time HP Endpoint Security Controller run-time code or critical data.

FIPS 140-3 Certification

FIPS (Federal Information Processing Standards Publication 140-3, is a standard developed by the National Institute of Standards and Technology (NIST) and defines the security requirements for cryptographic modules used in various IT products. HP's ESC, beginning with Sure Start Gen 7, has received level 1 certification (FIPS 140-3 Certificate), which ensures that the cryptography used in these modules provides a secure environment for the processing of sensitive information.

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SPI Host Interface Monitoring

The HP ESC now integrates SPI (Serial Peripheral Interface) Protocol Analyzer hardware, which enables HP Sure Start Gen7 to protect the system against malicious/unauthorized activity on the SPI bus. The SPI bus is the interface between the CPU and system flash memory holding the system firmware and settings (such as HP UEFI BIOS, Intel CSME firmware, AMD Security Processor firmware, and more). The HP ESC SPI protocol analyzer is also connected to this SPI bus and configured by HP Sure Start to monitor and analyze the SPI bus traffic in real time to identify and block malicious transactions to the SPI flash.

User notifications, event logging, and policy management

HP Sure Start end user notifications

Under normal operating conditions, HP Sure Start is invisible to the user. When HP Sure Start identifies a problem, recovery operations are automatic, using the default settings with no end user or IT interaction usually required.

Users may see runtime notifications in the event of a BIOS integrity problem detected via the HP Sure Start Dynamic Protection or the Runtime Intrusion Detection features while the OS is running[2]. If any significant event is detected or action is taken, HP Sure Start displays a warning message via Windows® notifications on the next boot. HP Notifications Software is required to enable the viewing of these Windows notifications.

HP Sure Start event logging

The HP Endpoint Security Controller records critical events related to the firmware/BIOS code and data monitored by HP Sure Start. These events are stored within the Sure Start nonvolatile memory store. When HP Notifications software is installed, the events are copied from the HP ESC to the Windows Event Viewer[3] to facilitate access to these events by the local user as well as the customer's preferred manageability agent.

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The following events trigger the HP Notifications Software to gather all events from the HP Sure Start subsystem and ensure that the Windows Event Viewer is updated with any events that are not already recorded there:

- Windows Boot
- Windows Resume from Sleep/Hibernate
- HP Sure Start with dynamic protection runtime event notifications
- HP Sure Start Runtime Intrusion Detection (RTID)

HP Notifications Software populates HP Sure Start events into a unique "HP Sure Start" application event log. Only HP Sure Start events will be included in this log. The Windows Event Viewer path to the HP Sure Start events is the following: System Tools/Event Viewer/ Applications and Services Logs/HP Sure Start.

The Windows Event Viewer level categories related to HP Sure Start events are defined in Table 1. The events are populated into Windows Event Viewer in the order that they were generated by HP Sure Start. The oldest event in the HP Sure Start subsystem is added to the Windows Event Viewer first and the most recent event is added last.

The timestamp for each Windows Event Viewer entry is the time it was added to that log, NOT the time the event occurred. Each Sure Start Windows Event Viewer entry includes detailed data within the event details, which includes the timestamp of the actual occurrence.

Note: Events are persistent in the HP Endpoint Security Controller even after being copied to the Windows Event Viewer. If the Windows Event Viewer is cleared, the HP Notifications Software application will replace all HP Sure Start entries on the next event that triggers it to check for HP Sure Start event logs.

Table 1:
Types of HP Sure Start Windows Event Viewer events protection and resiliency

Event Level	Definition
Info	Events that are expected to occur during the normal course of operation (e.g., updating the BIOS).
Warning	Unexpected events that have occurred but were fully recovered from by HP Sure Start and no user/admin action is required for the platform to be fully operational. These events are anomalous operations that the user/admin may want to investigate further, especially if there is a trend of these events across multiple machines.
Error	Events that require the admin/HP service to act on the platforms to fully recover.

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HP Sure Start provides superb firmware protection

Out of the box, the HP system BIOS enables and optimizes HP Sure Start policies for the typical user. Since HP Sure Start is enabled by default, the typical user is protected by HP Sure Start without having to modify the settings. For advanced users, the system BIOS provides some control of HP Sure Start behavior, using policy settings in the (F10) BIOS Setup. Unless otherwise noted, these settings and functions are located under Security/BIOS Sure Start.

Note: Policies are stored within the HP ESC nonvolatile memory that is not directly accessible by the host CPU; therefore, a reboot is required before any Sure Start settings take effect.

The following HP Sure Start settings and functions are available:

- Verify Boot Block on Every Boot
- BIOS Data Recovery Policy
- Network Controller Configuration Restore (Intel only)
- Prompt on Network Controller Configuration Change (Intel only)
- Dynamic Runtime Scanning of Boot Block (Intel only)
- HP Sure Start BIOS Setting Protection
- HP Sure Start Secure Boot Keys Protection
- Enhanced HP Firmware Runtime Intrusion Prevention and Detection (Intel only)
- HP Firmware Runtime Intrusion Detection (AMD only)
- HP Sure Start Security Event Policy
- HP Sure Start Security Event Boot Notification
- Lock BIOS Version
- Save/Restore MBR of System Hard Drive
- Save/Restore GPT of System Hard Drive
- Boot Sector (MBR/GPT) Recovery Policy
- DMA Protection
- DMA Pre-boot Protection

Verify Boot Block on Every Boot

HP Sure Start always verifies the integrity of the system flash BIOS boot block before resuming from sleep, hibernate, or power-off. When set to enable, HP Sure Start will also verify the integrity of the boot block on each warm boot (Windows restart). The trade-off to consider is faster restart time versus more security. The default setting of this feature is set to “Disable”.

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BIOS Data Recovery Policy

When set to Automatic, HP Sure Start automatically repairs the BIOS or the Machine Unique Data when necessary. When set to Manual, HP Sure Start requires a special key sequence to proceed with the repair. In the case of an issue with the boot block code, the system will refuse to boot, and a unique blink sequence will flash on the system LED. The system LED that lights may vary by platform and by instance. In the case of an issue with the Machine Unique Data, the system will display a message on the screen. The key sequence required, and the blink sequence displayed, vary depending whether the system is a notebook, a desktop, or a tablet. Manual mode is useful to users who can perform forensics on the system flash contents before repair. Typical users are not encouraged to use manual mode. The default setting of this feature is set to “Automatic”.

Network Controller Configuration Restore (Intel only)

When selected, HP Sure Start immediately restores the network controller configuration to factory defaults.

Prompt on Network Controller Configuration Change (Intel only)

HP provides a factory-defined network controller configuration which includes the MAC address. When this setting is set to enable, the system monitors the state of the network controller configuration and prompts the user in the event of a change from the factory-configured state. The default setting of this feature is set to “Disable”.

Dynamic Runtime Scanning of Boot Block (Intel only)

When in the default setting of enable, HP Sure Start periodically checks the integrity of the BIOS boot block while the OS is running. When in the disable setting, HP Sure Start only checks the integrity before a boot or resume from sleep or hibernate.

HP Sure Start BIOS Setting Protection

The BIOS setting protection policy is disabled by default. To enable the feature, the owner/administrator of the client device should first configure all BIOS policies to the preferred setting. The owner/ administrator also must configure a BIOS setup administrator password.

Once that is completed, the BIOS setting protection policy should be changed to “Enable.” At this point, a backup copy of all BIOS settings is created in the HP Sure Start–protected storage. Going forward, none of the BIOS settings can be modified locally or remotely. On each boot, the BIOS policy settings are verified to be in the desired state, and if there is any discrepancy, the BIOS settings are restored from the HP Sure Start–protected storage.

To modify a BIOS setting, the BIOS administrator password must be provided and BIOS setting protection subsequently disabled, at which point changes can be made to the BIOS settings.

HP Sure Start Secure Boot Keys Protection

With this setting at the factory default of enable, HP Sure Start provides enhanced protection of the secure boot databases and keys used by BIOS to verify the integrity and authenticity of the OS bootloader before launching it at boot. When set to “Disable”, only standard UEFI secure boot variable protection is used, and no backup copy is kept by the HP Sure Start subsystem.

HP Firmware Runtime Intrusion Prevention and Detection (RTID)

The RTID feature is enabled by default for all platforms shipped from the HP factory. There is no need for the end customer/administrator to enable or otherwise deploy the feature to take advantage of HP Sure Start RTID. The RTID feature can be optionally be set to “Disable” by the platform owner/ administrator.

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HP Sure Start Security Event Policy

This BIOS policy setting controls what action is taken when HP Sure Start detects an attack or attempted attack while the OS is running. There are three possible configurations for this policy:

- Log event only: When this setting is selected, the HP ESC logs detection events, which can be viewed in the Applications and Services Logs/HP Sure Start path of the Microsoft Windows Event Viewer[4].
- Log event and notify user: This is the default setting. When this setting is selected, the HP ESC logs detection events, which can be viewed in the Applications and Services Logs/HP Sure Start path of the Microsoft Windows Event Viewer. Additionally, the user is notified within Windows that the event occurred[5].
- Log event and power off system: When this setting is selected, the HP ESC logs detection events, which can be viewed in the Applications and Services Logs/HP Sure Start path of the Microsoft Windows Event Viewer. Additionally, the user is notified within Windows that the event occurred, and that system shutdown is imminent.

HP Sure Start Security Event Boot Notification

This BIOS policy setting controls whether HP Sure Start warnings and error messages that are displayed when the system is booted require the local user to acknowledge the error before the boot continues. With the default Require Acknowledgement setting, the system halts with the error message displayed. The local user must press a key to continue the boot. If changed to Time out after 15 seconds, the message is displayed, but the boot process continues automatically after the message is displayed for 15 seconds.

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Lock BIOS Version

In the (F10) BIOS setup, this feature is located in Main/Update System BIOS.

When set to “Disable”, you can update the BIOS using any supported process. When the HP ESC detects a valid boot block update in the system flash, it updates the backup copy of the boot block.

When set to “Enable”, all HP BIOS update tools refuse to update the BIOS. In addition, HP Sure Start protects the BIOS from attempts to change the BIOS version by removing the system flash via an unauthorized method. The HP ESC records the locked-down version of BIOS. When the HP ESC detects that the BIOS in the system flash changed, the HP ESC overwrites the BIOS boot block with the HP ESC copy of the boot block. The HP ESC copy of the boot block executes and recovers the remainder of the correct version of the BIOS. The default setting of this feature is “Disabled”.

Save/Restore MBR of System Hard Drive and Save/Restore GPT of System Hard Drive

In the (F10) BIOS setup, this feature is located in Security/Hard Drive Utilities. Only one of these capabilities is available, depending on the partition type of the primary drive (GPT or MBR), as detected by HP Sure Start.

When set to “Enable”, HP Sure Start maintains a protected backup copy of the MBR/GPT partition table from the primary drive and compares the backup copy to the primary on each boot. If a difference is detected, the user is prompted and can choose to recover from the backup to the original state, or to update the protected backup copy with the changes. The Boot Sector (MBR/GPT) Recovery Policy can optionally be used to remove the user decision for the action taken in the event of a discrepancy found by HP Sure Start.

When set to “Disable” (default), no MBR/GPT protection is provided by HP Sure Start.

Boot Sector (MBR/GPT) Recovery Policy

When set to Local User Control (default) the user is prompted for the action to take when HP Sure Start detects a change in the MBR/GPT partition table. When set to Recover in the event of corruption, HP Sure Start automatically restores the MBR/GPT to the saved state any time differences are encountered.

DMA Protection

When set to "Enable" (default), HP firmware configures the IO Memory Management Unit (IOMMU) to block DMA (Direct Memory Access) by peripheral devices per the Pre- Boot DMA Protection setting while in the BIOS pre-boot environment. The BIOS will also configure the system appropriately to enable Microsoft Kernel DMA protection for Thunderbolt 3 which takes over management of the IOMMU at OS start time to provide the same protections from DMA attacks in the OS environment.

Pre-boot DMA Protection

When set to "All PCI-e Devices", HP firmware configures the IO Memory Management Unit (IOMMU) to block DMA (Direct Memory Access) by peripheral devices per the Pre-Boot DMA Protection setting while in the BIOS pre-boot environment. Available options and defaults vary as shown in the table below.

Table 2:
Pre-boot DMA protection options and defaults

Notebook with Thunderbolt support	Notebook without Thunderbolt support	Desktop with Thunderbolt support	Desktop without Thunderbolt support
Thunderbolt Only	Disabled	Thunderbolt Only	Disabled
All PCI-e devices (Default) (Recommended)	All PCI-e devices (Default) (Recommended)	All PCI-e devices (Recommended)	All PCI-e devices (Recommended)
-	-	All PCI-e devices (Default)	All PCI-e devices (Default)

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Remote management of HP Sure Start policy controls

Out of the box, HP Sure Start policies are optimized for the typical user. Since HP Sure Start is enabled by default, there is no need for the remote administrator to take any action to enable ("deploy") HP Sure Start. If a remote administrator wants to modify HP Sure Start policy settings, the same Windows Management Instrumentation (WMI) APIs or HP BIOS Configuration Utility scripts that are used to manage other platform BIOS policies can be used to manage HP Sure Start policies. In addition, administrators can remotely manage HP Sure Start capabilities with the Manageability Integration Kit (MIK) plug-in for Microsoft System Center Configuration Manager (SCCM).

Also, administrators can remotely manage HP Sure Start capabilities and view HP Sure Start events with the Manageability Integration Kit (MIK) plug-in for Microsoft System Center Configuration Manager (SCCM).

Conclusion

HP Sure Start delivers these key benefits:

- Uninterrupted productivity: HP Sure Start maintains business continuity in the event of an attack or accidental corruption by eliminating downtime waiting for an IT/Service event.
- Lower cost: HP Sure Start's ability to recover automatically reduces calls to the IT Help Desk and enhances productivity, which ultimately helps lower the maintenance cost for the platform.
- Peace of mind: HP Sure Start has multiple security features that run across a wide variety of software and hardware platforms.

Protect critical BIOS firmware from malware with the industry-leading firmware intrusion detection and automatic repair offered by HP Sure Start, available on many HP business PCs, including Pro and Elite platforms, Workstations, Thin Clients, and Retail Point of Sale (RPOS) PCs.

Learn more hp.com/go/computersecurity
Links to technical content support.hp.com/us-en/topic/goIT

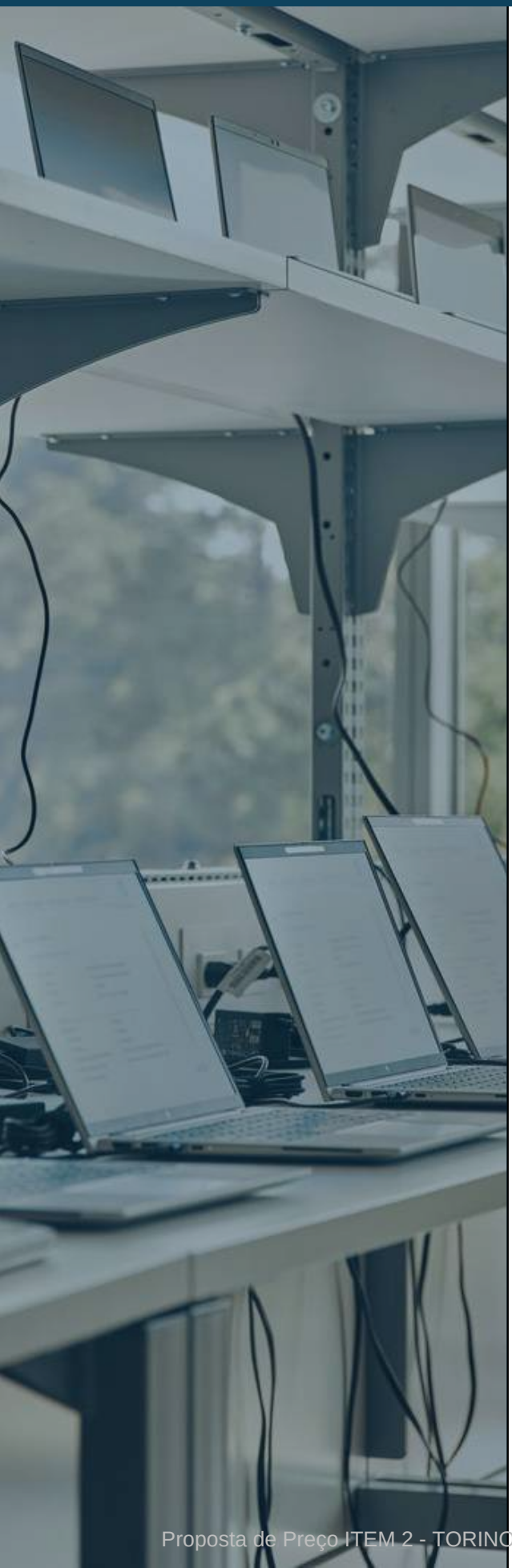
Appendix A - Sure Start, Gen by Gen

HP introduced Sure Start in 2014. Since that time, HP has enhanced Sure Start and expanded the number of products that use it. The table below provides a summary of the capabilities that were added with each generation.

Table 3:
Sure Start, Gen by Gen

Generation	Release Date	Capabilities Added
HP Sure Start	2013	▪ Firmware and BIOS authenticity enforcement, with the ability to self-heal ▪ Firmware monitoring and compliance
HP Sure Start with Dynamic Protection	2015	▪ Windows Event Viewer support ▪ Dynamic Protection (for select Intel products)
HP Sure Start Gen3 (select intel products)[6]	2017	▪ Runtime Intrusion Detection ▪ BIOS setting protection ▪ Manageability Integration Kit (MIK) plug-in for Microsoft SCCM
HP Sure Start Gen4[7]	2018	▪ Protected storage—strong cryptographic methods to store BIOS settings, user credentials, and other settings in the HP Endpoint Security Controller hardware to provide integrity protection, tamper detection, and confidentiality protection for that data ▪ Secure boot database protection—enhanced protection of databases and keys stored by BIOS that are critical to the integrity of the OS secure boot feature versus standard UEFI BIOS implementation ▪ On Intel platforms, enhanced protection and recovery of the Intel Management Engine Firmware for any failures that occur across updates or failure of main Intel ME firmware ▪ Third-party security certification of HP Endpoint Security Controller—testing by an independent and accredited laboratory to validate that the HP ESC hardware core functionality works as claimed per publicly available criteria, methodology, and processes[1] ▪ HP business PCs with HP Sure Start exceed the NIST Platform Firmware Resiliency guidelines (Special Publication 800-193) for host processor boot firmware and other critical platform device firmware, as discussed in Appendix C.
HP Sure Start Gen5[8]	2019	▪ Full back-up, integrity monitoring, and recovery services for of Intel Manageability Engine firmware including main firmware and boot critical portions of code and data. ▪ DMA Protection for attacks via Thunderbolt devices
HP Sure Start Gen6[9]	2020	▪ Smart flash ▪ Enhanced DMA protection for attacks via internal devices slots ▪ HP Endpoint Security Controller run-time Intrusion detection ▪ AMD Secure Processor firmware protection
HP Sure Start Gen7[10]	2023	▪ FIPS 140-3 Certification ▪ SPI Host Interface monitoring

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Appendix B

System Management Mode (SMM) Overview

System Management Mode (SMM) is an industry-standard approach used for PC advanced power-management features and other OS-independent functions while the OS is running. While the SMM term and implementation is specific to x86 architectures, many modern computing architectures use a similar architectural concept.

SMM is configured by the BIOS at boot time. The SMM code is populated into the main (DRAM) memory. Then BIOS uses special (lockable) configuration registers within the chipset to block access to this area when the microprocessor is not executing in an SMM context. At runtime, entry into SMM mode is event-driven. The chipset is programmed to recognize many types of events and timeouts. When such an event occurs, the chipset hardware asserts the System Management Interrupt (SMI) input pin. At the next instruction boundary, the microprocessor saves its entire state and enters SMM.

As the microprocessor enters SMM, it asserts a hardware output pin, SMI Active (SMIACT). This pin serves notice to the chipset hardware that the microprocessor is entering SMM. An SMI can be asserted at any time, during any process operating mode, except from within SMM itself. The chipset hardware recognizes the SMIACT signal and redirects all subsequent memory cycles to a protected area of memory (sometimes referred to as the SMRAM area), reserved specifically for SMM. Immediately after receiving the SMI input and asserting the SMIACT output, the microprocessor begins to save its entire internal state to this protected memory area.

After the microprocessor state has been stored to SMRAM memory, the special SMM handler code that also resides in SMRAM (placed there by system BIOS at boot time) begins to execute in a special SMM operation mode. While operating in this mode, most hardware and memory isolation mechanisms are suspended, and the microprocessor can access virtually all resources in the platform to enable it to perform required tasks. The SMM code completes the required task, and then it's time to return the microprocessor to the previous operating mode. At that point, the SMM code executes the Return from System Management Mode (RSM) instruction to exit SMM. The RSM instruction causes the microprocessor to restore its previous internal state data from the copy saved in SMRAM upon SMM entry. Upon completion of RSM, the entire microprocessor state has been restored to the state just prior to the SMI event, and the previous program (OS, applications, hypervisor, etc.) resumes execution right where it left off.

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Appendix C

NIST SP 800-193: Platform Firmware Resiliency Guidelines

Released in May 2018, the NIST SP 800-193: Platform Firmware Resiliency Guidelines describe guidelines for security mechanisms to protect platform firmware against unauthorized changes, detect unauthorized changes that occur, and recover from these unauthorized changes.

These guidelines outline three different resiliency properties:

1. Protected: meets all Protection and Secure Update requirements
2. Recoverable: meets all Detection and Recovery requirements
3. Resilient: meets all Protection, Detection, and Recovery requirements

Of these three properties, Resilient is the strongest, providing the most benefit to HP Customers.

HP Sure Start Gen3+ meet and exceed all Resilient guidelines in NIST SP 800-193 for host processor boot firmware, also known as the UEFI BIOS. Further, HP Sure Start Gen3 and subsequent generations progressively expand the number of other firmware based Critical Platform Device Firmware that are protected per NIST 800-193 requirements, as shown in Table 3.

Prior NIST guidelines for BIOS security

NIST SP 800-193 goes beyond NIST SP 800-147, which only addressed protection and the secure update of the platform's UEFI BIOS. All generations of HP Sure Start along with all generations of HP BIOSphere support NIST SP 800-147.

NIST SP 800-193 also goes beyond NIST SP 800-155, which outlined security components and guidelines to establish a secure BIOS integrity measurement and reporting chain. Likewise, all generations of HP Sure Start along with all generations of HP BIOSphere support NIST SP 800-155.

NIST SP 800-193 Critical Platform Devices in HP Commercial PCs

NIST SP 800-193 acknowledges that the definition of Critical Platform Devices can vary. Critical Platform Devices are defined in section 3.2 (Resiliency Properties):

"For a platform as a whole to claim resiliency to destructive attacks, the set of platform devices necessary to minimally restore operation of the system, and sufficient to restore reasonable functionality, should themselves be resilient. We call this set of devices critical platform devices. The particular resiliency properties may vary from platform-to-platform."

For that reason, it is important to define this set of devices and applicable firmware for HP Commercial PCs. NIST SP 800-193 provides a reference platform architecture in Section 2 along with a list of devices which are "often critical to the normal and secure operation of a platform." The table below provides a mapping to each of those devices/subsystems to the applicable firmware components in the HP Commercial Notebook PCs.

Note that each customer environment should be evaluated to determine whether there are additional peripheral devices that are critical to restore reasonable functionality specific to the customer's deployment.

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Table 4:
Critical Platform Device Firmware Protected by HP Sure Start or other technology.

NIST SP 800-193 Platform Architecture Reference	HP Commercial PC critical platform device firmware	Protected by
1. Embedded Controller (EC)/ Super I/O (SIO) 4. Host Processor 6. Graphics Processing Unit (GPU) when implemented as Unified Memory Architecture (UMA) 8A. Host Controller (HC) for mass storage device 10. Host Processor Boot Firmware 11. Platform Runtime Firmware 12. Power Supply 14. Fans	HP ESC firmware HP UEFI BIOS firmware	HP Sure Start Gen3+
2. Trusted Platform Module (TPM)	Discrete TPM component firmware[1]	TPM
3. Baseboard Management Controller (BMC)/ Management Engine (ME)	Intel Management Engine firmware or AMD Secure Processor firmware	HP Sure Start Gen5+ HP Sure Start Gen6+
5. Network Interface Controller (NIC)	Intel integrated GbE NIC firmware[2]	HP Sure Start Gen3+
7. Serial Peripheral Interface (SPI) Flash	Intel Descriptor firmware	HP Sure Start Gen3+
8A. Hard Disk Drive (HDD)/Solid State Drive (SSD)	HDD/SSD firmware[3]	N/A[4]
9. Embedded MultiMediaCard (eMMC) / Universal Flash Storage (UFS)	N/A[4]	N/A[4]
13. Glue Logic (CPLD's, FPGA's)	N/A[4]	N/A[4]

1. This component is not critical to boot of the platform.
2. This component is not critical to minimally restore operation of the system but is required to establish Ethernet connectivity in environments where that connectivity is deemed critical to platform resiliency.
3. Mass storage devices are outside the scope of this document. Resiliency capabilities vary by storage supplier and by storage device. Not all suppliers or devices currently meet all Resiliency requirements in 800-193.
4. No devices of this type are included.

Acronyms

- BIOS
  Basic Input/Output System (aka host processor boot firmware)
- CPU
  Central processing unit
- ESC
  HP Endpoint Security Controller
- Gen3+
  Applies to HP Sure Start Gen3, Gen4, Gen5, Gen6, and Gen7
- Gen4+
  Applies HP Sure Start Gen4, Gen5, Gen6, and Gen7
- Gen5+
  Applies HP Sure Start Gen5, Gen6, and Gen7
- Gen6+
  Applies only to HP Sure Start Gen6, and Gen7
- HMAC
  Hash-based message authentication code
- HW
  Hardware
- OS
  Operating system
- POST
  Power-On Self-Test
- RoT
  Root of Trust (defined in NIST SP 800-193)
- RTD
  Root of Trust for Detection (defined in NIST SP 800-193)
- RTRec
  Root of Trust for Recovery (defined in NIST SP 800-193)
- SMM
  System Management Mode
- UEFI
  Unified Extensible Firmware Interface

Table 5:
Required functions for Host Processor Boot Firmware.

The table below provides a summary of each function described by NIST SP 800-193.

NIST SP 800-193	HP Sure Start	
Roots of Trust (Section 4.1)	Meets all Resiliency Requirements	▪ Gen3+ uses a hardware-based RoT (the HP ESC) with immutable boot firmware, which cryptographically verifies subsequent firmware before launching it, creating a Chain of Trust. ▪ Gen3+ includes a key store and approved digital signing algorithms based on FIPS 186-4 to verify the digital signature of firmware update images. ▪ Gen3+ uses authenticated update, detection, and recovery mechanisms, which are anchored in Gen3+'s HW-based RoT.
Protection and Update of Mutable Code (Section 4.2.1)	Meets all Resiliency Requirements	▪ Gen3+ uses an authenticated update mechanism anchored in Gen3+'s ▪ HW-based RoT. ▪ Firmware update images are digitally signed by HP's code signing service (HP Secure Sign) and verified by Gen3+ prior to updating. ▪ Gen3+ integrity protects the HP ESC and UEFI flash regions, so that only its authenticated update mechanism or a secure local update through physical presence can modify those flash regions. ▪ Gen3+ has no known authenticated update bypass mechanisms and contains the ability to prevent rollback to earlier authentic firmware images with known security vulnerabilities.
Protection of Immutable Code (Section 4.2.2)	Meets all Resiliency Requirements	▪ Gen3+ uses a hardware-based RoT (the HP ESC) with immutable boot firmware.
Runtime Protection of Critical Platform FW (Section 4.2.3)	Meets all Resiliency Requirements	Critical Platform Firmware executing in volatile storage (RAM) runs and: ▪ Ceases its operation prior to the loading of system software. That is, it runs during POST and stops before the OS is loaded. ▪ is protected from system software using SMM protections enforced by the CPU.
Protection of Critical Data (Section 4.2.4)	Meets all Resiliency Requirements	▪ Gen4+ Critical Data, such as Secure Boot authenticated variables, are only modifiable through defined APIs provided by device firmware. These APIs employ a mechanism to authenticate that the data is originating from an authorized source before applying the change. ▪ Gen4+ Critical Data, such as per-platform unique factory configuration settings, are only modifiable through defined APIs provided by device firmware. These APIs employ a mechanism to authenticate that the request is originating from an authorized HP service provider before they allow the change. ▪ Gen4+ Critical Data, such as BIOS settings that can be configured in the field, are only modifiable through defined APIs. These APIs are accessed only via a system administrator who has configured the BIOS administrator password. ▪ Gen3+ factory default settings, which are not per- platform-specific, employ the same protection as the code. This includes integrity and authenticity verification via digital signature. These setting updates are controlled and protected in the same manner as the firmware.

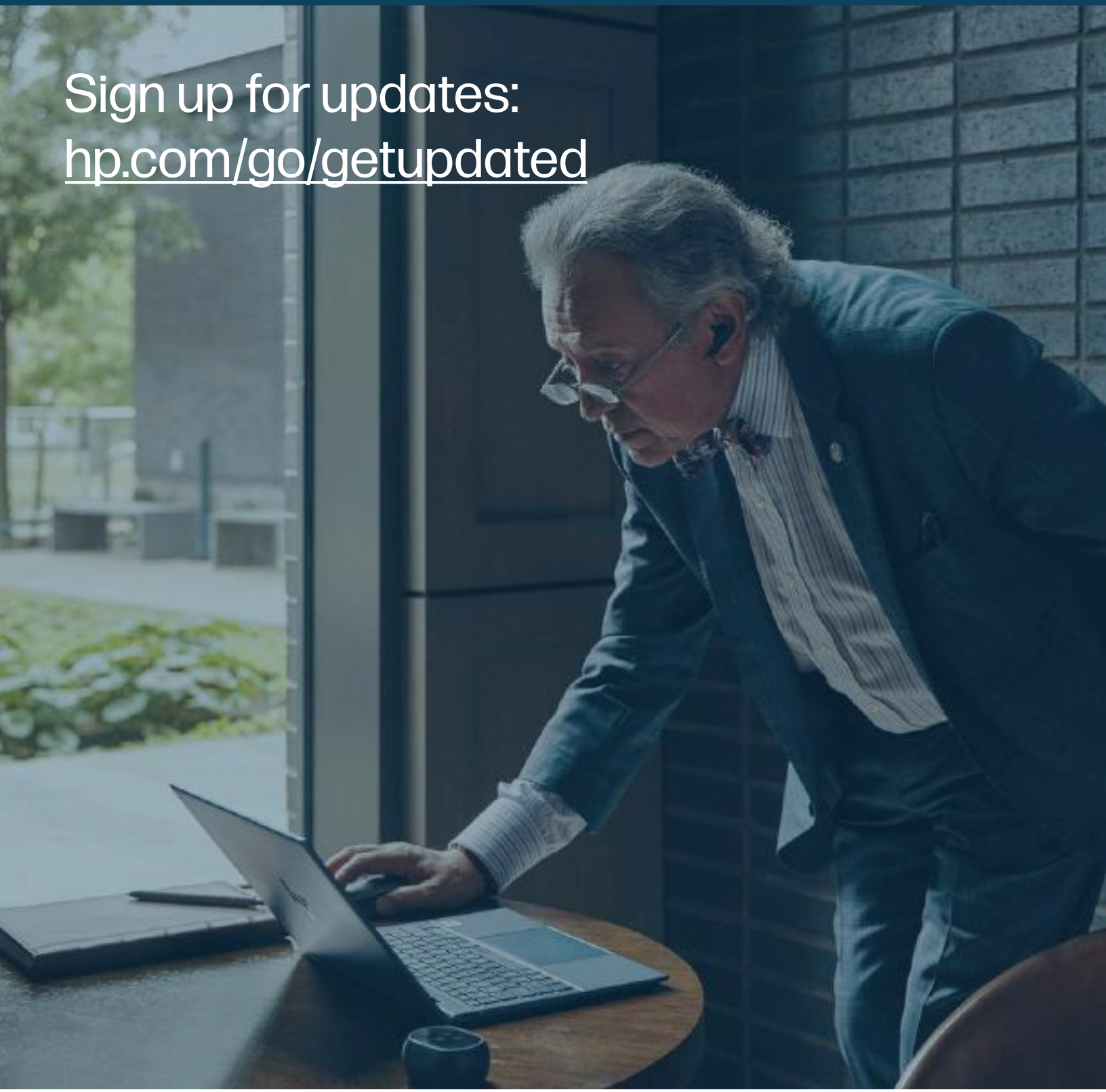
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NIST SP 800-193	HP Sure Start	
Detection of Corrupted Code (Section 4.3.1)	Meets all Resiliency Requirements	▪ A successful attack on the platform firmware will not impact Gen3+'s RTD. The RTD is maintained in a private flash area inaccessible to the system software that might compromise the platform firmware. ▪ Firmware code is validated by Gen3+'s RTD using approved digital signature algorithms and cryptographic hashes.
Detection of Corrupted Critical Data (Section 4.3.2)	Meets all Resiliency Requirements	▪ A successful attack on the Active Critical Data will not impact Gen3+'s RTD. The RTD is maintained in a private flash area inaccessible to the system software that might compromise Active Critical Data. ▪ Gen3+ can save and validate critical data through use of digest hashes prior to using that critical data, and Gen3+ can initiate a recovery of the critical data if corruption is detected.
Recovery of Mutable Code (Section 4.4.1)	Meets all Resiliency Requirements	▪ Gen3+'s ESC implements the recovery capability. ▪ A successful attack on the platform firmware will not impact Gen3+'s RTRec. The RTRec is maintained in a private flash area inaccessible to the system software that might compromise the platform firmware. ▪ Gen3+'s RTRec has access to a locally stored copy of the platform's UEFI image in its private flash area, which is inaccessible to (protected from) system software. ▪ Gen3+ can update the locally stored authentic UEFI image in its private flash area through an Authenticated Update mechanism.
Recovery of Critial Data (Section 4.4.2)	Meets all Resiliency Requirements	▪ Gen3+'s ESC implements the recovery capability. ▪ A successful attack on Active Critical Data will not impact Gen3+'s RTRec. The RTRec is maintained in a private flash area inaccessible to the system software that might compromise Active Critical Data. ▪ Gen3+ can recover critical data back to factory defaults including per-platform-specific data that is backed up in isolated & protected storage. ▪ Gen3+ can recover non-per-platform-specific defaults from the backup BIOS image stored in isolated and protected storage. ▪ Gen3+ does not use policies included as part of Critical Data to restore critical data.
Logging and notification	Exceeds all Resiliency Requirements	▪ Gen3+ will notify user of corruption and log the event. ▪ Gen3+'s detection mechanism is capable of logging events when corruption ▪ is detected Gen3+ will notify user of a recovery event and log the event. ▪ Gen3+'s detection mechanism is capable of logging events when a recovery action has taken place.
Policy-based controls	Exceeds all Resiliency Requirements	▪ Gen3+'s detection mechanism has policies which control the action taken by the Runtime Detection.



NIST SP 800-193	HP Sure Start	
Automatic or manual recovery options	Exceeds all Resiliency Requirements	▪ Gen3+ Runtime Detection can initiate a recovery process automatically or after notification of detection corruptions to the user. ▪ Gen3+ can automatically perform its recovery operations without user interaction or it may require user approval, dependent on policy setting. ▪ Gen3+ gains approval from the user before replacing the current Critical Data, based on recovery policy setting. ▪ Gen3+ can recover Critical Data back to a last-known good state. ▪ Gen3+ gains approval from the user before replacing the current Critical Data, based on recovery policy setting.
Local or remote IT Recovery	Exceeds all Resiliency Requirements	▪ Gen3+ can automatically perform its recovery operations without user interaction or may require user approval, dependent on policy setting.
Rollback pre-vention	Exceeds all Resiliency Requirements	▪ Gen3+ and the UEFI boot block both have controls in place to protect against recovery to an earlier firmware version with security weaknesses.
Runtime intru-sion detection	Exceeds all Resiliency Requirements	▪ NIST SP 800-193 is silent on what happens to firmware once it is loaded from nonvolatile storage (flash) into volatile storage (RAM) for execution. Gen3+ provides runtime intrusion detection of UEFI SMM code loaded into SMM RAM.
Physical attack detection	Additional Functionality not required in NISTSP800-193	▪ Gen4+ provides protection against physical attacks to the protected backup copy of dynamic critical data. ▪ AES encryption is used on a per-component unique key to provide confidentiality of private data. In addition, HMAC integrity measurements provide tamper prevention/detection of those keys.

1. The HP Sure Start controller hardware has been certified per the CSPN certification framework.
2. HP Sure Start with Dynamic Protection is available on HP Elite products equipped with 6th generation Intel Core processors and higher.
3. HP Sure Start end user notifications and pushing of HP Sure Start events to OS event viewer support is limited to Windows Operating system. These features are not supported in Linux.
4. HP Notification Software must be installed to view HP Sure Start events in the Windows Event Viewer.
5. HP Notification Software must be installed to receive notifications.
6. HP Sure Start Gen3 is available on HP Elite products equipped with Intel 7th generation processors.
7. HP Sure Start Gen4 is available on HP Elite and HP Pro 600 products equipped with 8th generation Intel or AMD processors.
8. HP Sure Start Gen5 is available on select HP PCs with Intel processors. See product specifications for availability.
9. HP Sure Start Gen6 is available on select HP PCs.
10. HP Sure Start Gen7 is available on select HP PCs.



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4AA7-6645ENW, January 2024

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ENERGY STAR CERTIFIED
Computers

HP - HP Z2 Tower G9 Workstation Desktop PC ENERGY STAR : Z2 Tower G9 Workstation Desktop PC

Specifications

ENERGY STAR Unique ID:	2390561
Brand Name:	HP
Model Name:	HP Z2 Tower G9 Workstation Desktop PC ENERGY STAR
Model Number:	Z2 Tower G9 Workstation Desktop PC
Type:	Workstation
Workstations: Processor Brand:	Intel
Workstations: Processor Name:	i9-12900K
Workstations: Operating System Name:	Windows 11
Workstations: Base Processor Speed Per Core (GHz):	3.2
Workstations: System Memory (GB):	128
Workstations: Hard Drives (count):	1
Workstations: Off Mode (watts):	0.7
Workstations: Sleep Mode (watts):	2.6
Workstations: Long Idle (watts):	32.8
Workstations: Short Idle (watts):	34.2
Workstations: Weighted Power of Model (watts):	19.4
Sleep Mode Default Time Upon Shipment (min.):	20
Display Sleep Mode Default Time Upon Shipment (min.):	10
WOL (Wake on LAN) From Sleep:	Shipped Enabled Under All Conditions
Will the Speed of Any Active 1 GB/s or Higher Ethernet Network Links be Reduced to Less Than 1 GB/s When Transitioning to Sleep or Off Mode?:	Yes
Ethernet Capability:	Yes
Date Available On Market:	2022-02-28
Date Certified:	2022-01-17
Markets:	United States, Switzerland, Taiwan, Japan, Canada
ENERGY STAR Certified:	Yes

Captured On:
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Broadband Forum (BBF) (https://www.broadband-forum.org/)

China Communications Standards Association (http://www.ccsa.org/cn/english)

China Electronics Standardization Institute (CESI) (http://www.en.cesi.cn/)

CXL Consortium (https://www.computeexpresslink.org/)

ETSI-NFV (http://portal.etsi.org/portal/server.pt/community/NFV/367)

HDBaseT (https://hdbaset.org/)

MIPI Alliance (https://www.mipi.org/)

NVM Express (http://nvmexpress.org/)

OMG-Cloud Working Group (http://www.cloud-council.org)

Open Compute Project (OCP) (http://www.opencompute.org/)

Open Data Center Committee (ODCC) (http://www.opendatacenter.cn/)

Open Fabrics Alliance (OFA) (https://www.openfabrics.org/)

Open Grid Forum (http://ogf.org)

OpenInfra Foundation (https://openinfra.dev/)

PCI Industrial Computer Manufacturer Group (PICMG) (https://www.picmg.org/)

PCI-SIG (https://pcisig.com/)

SNIA (http://www.snia.org/)

TeleManagement Forum (http://www.tmforum.org/)

The Green Grid (http://www.thegreengrid.org)

The Open Group (http://www.opengroup.org)

Unified Extensible Firmware Interface (http://www.uefi.org/)

Universal Chiplet Interconnect Express (UCIe) (https://www.uciexpress.org/)

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Microsoft

Hardware certification report **Approved**

Private product ID:	**14583652101653309**
Shared product ID:	**401304713**
Submission ID:	**1152921505696194241**
Submission date:	**4/18/2023**
Completion date:	**4/18/2023**
Company:	**HP Inc.**
Product name:	**HP Z2 Tower G9 Workstation Desktop PC**
Category:	**System**
Product type:	**Desktop**
Qualification level:	**Certified for Microsoft Windows 11 Client family version 22H2, x64**
Marketing name:	**HP Z2 Tower G9 Workstation Desktop PC**

Microsoft Certified

Your submission was sent successfully!

HP Z2 G9 Tower Workstation (Core i7-12700K)

Desktop system certified with Ubuntu

Release

- ### Ubuntu 20.04 LTS 64 Bit

  Pre-installed in some regions with a custom Ubuntu image that takes advantage of the system's hardware features and may include additional software. Standard images of Ubuntu may not work well, or at all.

  #### Kernel

  This system was tested with 20.04 LTS, running the 5.14.0-1018-oem kernel.

  #### BIOS

  HP: U50 Ver. 01.01.00 (UEFI)

  #### Hardware

Network	Intel Corp. I210 Gigabit Network Connection Ethernet Server Adapter I210-T1 pci (8086:1533 103c:0003) Intel Corp. Ethernet Connection (17) I219-LM pci (8086:1a1c 103c:895c)
Processor	Intel Corp. 12th Gen Intel(R) Core(TM) i7-12700K
Video	nVidia GA102GL [RTX A5000] pci (10de:2231 103c:147e)
Wireless	Intel Corp. Alder Lake-S PCH CNVi WiFi Wi-Fi 6 AX201 160MHz pci (8086:7af0 8086:0094)

Hardware details ›

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Components certified with this system

Component	14.04 ESM	16.04 LTS	18.04 LTS	20.04 LTS	Comments
HP RTX A4000					
HP RTX A4500					

- Supported
- [3] May require 3rd-party driver
- In progress

Issues? Let us know

If there is an issue with the information for this system, please let us know <https://answers.launchpad.net/ubuntu-certification/+addquestion?field.title=Feedback on the HP Z2 G9 Tower Workstation (Core i7-12700K) (202112-29792)> .

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HP's Compliance with Restriction of Hazardous Substances (RoHS) Legislation in the EU and other jurisdictions

(Rev 14c September 2019)

HP Inc
1501 Page Mill Road
Palo Alto, CA 94304-1112
www.hp.com

HP is committed to compliance with all applicable laws and regulations, including material restriction requirements under the European Union Recast RoHS Directive 2011/65/EU, otherwise known as EU RoHS 2, as amended by Directive 2015/863/EU and RoHS legislation in other jurisdictions such as China's Management Methods for Restricted Use of Hazardous Substances in Electrical and Electronic Products, otherwise known as China RoHS, and the materials restriction requirements of India's E-Waste Management Rules, 2016.

HP believes that legislation, like EU RoHS 2, plays an important role in promoting industry-wide transition to restrict substances of concern. In general, the restriction of any substance should take into account the following key items:

- Global harmonization of the legislation content and implementation requirements
- Substance risk assessment, including a clear understanding of the environmental impacts of alternative substances
- Clear identification of what substances (vs. broad classes or categories) are to be restricted
- Clear identification of when alternative technologies are proven and readily available
- Appropriate lead time to allow the industry to transition
- Substances that are not used or found in final products should not be included in the restrictions
- Material application exemptions should be allowed for the use of restricted substances in applications where current substitution is not technically feasible
- Inclusion of maximum concentration values setting de minimis levels below which the relevant substances may be present

HP believes other substances should be considered for inclusion in future RoHS legislation. This includes the restriction of polyvinyl chloride (PVC) and brominated flame retardants (BFRs) from electrical and electronic products (EEE). HP believes PVC and BFRs should be the focus for the restriction of chlorine (Cl) and bromine (Br) from electrical and electronic products, where technically feasible. HP's reasons for focusing on PVC and BFRs are:

- PVC and BFRs cover 99% of the uses for Cl and Br in electronics;
- Given the high percentage usage, these substances have the highest impact;
- Restriction of these substances where technically feasible would substantially accomplish the goal to eliminate Cl and Br from electronic products

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In order to make these material transitions in all the many types of products in the industry, HP believes restriction under RoHS legislation is possible. However, some critical issues would need to be overcome or addressed by specific exemptions, including technical issues for certain applications, availability of environmentally preferable alternatives, and ability to maintain high recycled content as substances are restricted.

Our continued voluntary goal is to apply the EU RoHS 2 substance and exemption requirements outside the EEA (and other countries that are tracking EU compliance dates) on a worldwide basis within 6 months of each of the EU's various legal compliance dates for virtually all HP branded new products in the scope of EU RoHS 2, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the EU RoHS Directive).

HP began proactively eliminating substances of concern in the early 1990s. The HP Materials and Chemical Management Policy guides how we specify materials and chemicals for use in products, packaging, and manufacturing processes. For key milestones see our Green Chemistry Timeline.

In early 2003, a company-wide RoHS team was formed to manage all aspects of HP's global response to RoHS legislation around the world. HP's initiative to address RoHS legislation is part of the company's Design for Sustainability program, which includes advancing materials innovation to improve environmental and human health impacts. For more information, see the materials innovation section of HP's Sustainable Impact Report.

HP continues to plan for further "RoHS like" legislations in other jurisdictions and will meet any additional requirements that arise. HP complies with the requirements of all the RoHS legislations currently in effect (including those specifically listed under Compliance Status below). HP's Compliance Verification is based on our risk analysis of restricted substances entering the supply chain and includes technical documentation outlined in the European Union's EN 50581:2012 standard and the International IEC 63000:2018 standard.

More detailed information can be found at: Sustainable Impact at HP

Sustainability Impact Report
Sustainable Design
Compliance Verification
General Specifications for the Environment
Eco Declarations

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HP's Compliance Status to EXISTING RoHS Legislation:

Europe, Middle East and Africa

European Union and European Economic Area

- HP products [1] comply with EU Directive 2011/65/EU of 8 June 2011 as amended by EU Directive 2015/863 of 31 March 2015 and including amendments to the exemptions in Annex III.

Switzerland

- HP products [1] comply with the Swiss Ordinance on the Reduction of Risks relating to the Use of Certain Particularly Dangerous Substances, Preparations and Articles, otherwise known as the Swiss Chemical Risk Reduction Ordinance, ORRChem, as of May 18, 2005 (as amended)

Ukraine

- HP products [1] comply with the substance restrictions in Ukraine's "Technical Regulation on Restriction of the use of certain hazardous substances in electrical and electronic equipment, approved by Decree of the Cabinet of Ministers of Ukraine dated 10 March, 2017 No. 139", otherwise known as Ukraine RoHS which came into effect on 22 September 2017 and repealed Technical Regulation on the restriction of the use of certain hazardous substances in electrical and electronic equipment, approved by Decree of the Cabinet of Ministers of Ukraine dated December 3, 2008 No. 1057.

Serbia

- HP products [1] comply with Serbia's WEEE and RoHS "Regulations on the List of Electrical and Electronic Products, Measures Banning and Restricting the Recovery of Electrical and Electronic Equipment Containing Hazardous Materials, and the Methods and Procedures for Managing Waste from Electrical and Electronic Products" that entered into force on January 4, 2011. RoHS restrictions apply to equipment placed on the market on or after July 1, 2011.

Turkey

- HP products [1] comply with Turkey's "Regulation on Waste Electronic and Electrical Equipment" (WEEE) which came into effect on May 22, 2012 and incorporates the rules for the Restriction of Certain Hazardous Substances in Electrical and Electronic Equipment", otherwise known as Turkey RoHS.

Bosnia-Herzegovina

- HP products [1] comply with Bosnia-Herzegovina's "Regulation of Restrictions of Use of Certain Dangerous Substances in Electrical and Electronic Equipment (RoHS Regulation 50/15) was published in Official Gazette of Republic of Srpska 50/15", otherwise known as Bosnia-Herzegovina RoHS which came into effect on June 1, 2016.

UAE

- HP products [1] comply with UAE's "Cabinet Decision No. 10/2017 to control hazardous materials in electrical and electronic devices (RoHS) OG No. 614 of 27.04.2017 (officially published and came to power on 16.05.2017)", otherwise known as UAE RoHS which came into effect on January 1, 2018.

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Asia

China

- HP products [1] comply with China's, "Management Methods for Restricted Use of Hazardous Substances in Electrical and Electronic Products", otherwise known as China RoHS which came into effect on July 1, 2016. And comply with "Catalog of Electrical and Electronic Products that have met the standard in Limited Use of Hazardous Substances (Batch one) which comes into effect on Nov 1, 2019.

India

- HP products [1] comply with the material restrictions of India's legislation "E-waste Management Rules, 2016", otherwise known as India RoHS which came into effect on October 1, 2016.

Korea

- HP products [1] comply with Korea's legislation "The Act on Resource Circulation of Electrical and Electronic Equipment and Vehicles", otherwise known as Korea's RoHS which came into effect on January 1, 2008. You can find HP's Korean RoHS declarations at: http://www8.hp.com/us/en/hp-information/environment/msds-specs-more.html.

Vietnam

- HP products [1] comply with Vietnam's legislation "Circular 30/2011/TT-BCT: Temporarily regulating the permitted limits for a number of hazardous substances in electric and electronic products", otherwise known as Vietnam RoHS which came into effect on December 1, 2012. You can find HP's Vietnam RoHS declarations at: http://www8.hp.com/us/en/hp-information/environment/msds-specs-more.html

Japan

- HP products [1] comply with the labeling requirements set out in Japan's "The Marking of Presence of the Specific Chemical Substances for Electrical and Electronic Equipment" (JIS-C-0950), otherwise known as J-MOSS which came into effect on July 1, 2006. You can find HP's J-MOSS declarations at http://www8.hp.com/us/en/hp-information/environment/msds-specs-more.html

Singapore

- HP products [1] comply with Singapore's "Environment Protection and Management Act (Chapter 94A) Environmental Protection and Management Act (Amendment of Second Schedule) Order 2016", otherwise known as Singapore RoHS which came into effect on June 1, 2017.

Taiwan BSMI

- HP products [1] comply with Taiwan's "CNS 15663 Guidance to reduction of the restricted chemical substances in electrical and electronic equipment released by Bureau of Standards, Metrology and Inspection (BSMI), MOEA through notification dated 29 December 2015 added the requirement for RoHS labelling to BSMI certification requirement." Otherwise known as Taiwan BSMI RoHS which came into effect as of July 1, 2017.

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Americas

California

- HP products [1] comply with California's, "Electronic Waste Recycling Act of 2003 (Senate Bill 20) substance restrictions", otherwise known as California RoHS which came into effect on January 1, 2007.

New Jersey

- HP products [1] comply with New Jersey's "Electronic Waste Recycling Act" (Senate Bill 2144), otherwise known as New Jersey RoHS which came into effect on 1 January 2011.

Worldwide

- HP continues to achieve its internal voluntary goal to meet the substance restrictions of the EU RoHS legislation on a worldwide basis, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the EU RoHS Directive), for virtually all HP branded products in scope of EU Directive 2011/65/EU as amended.

Notes:
[1] HP products that are both in scope and put on the market in the given jurisdiction.

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Annex B2 - Product environmental attributes
Computers and computer monitors

The declaration may be published only when all rows and/or fields marked with * are filled-in (n.a. for not applicable). Additional information regarding each item may be found under P15.

Brand *	***HP***	Logo
Company name *	***HP***	
Contact information * e-mail address	***HP Sustainability and Compliance Center*** ***sustainability@hp.com***	
Internet site *	***http://www.hp.com/hpinfo/globalcitizenship/environment/***	
Additional information		

The company declares (based on product specification or test results based obtained from sample testing), that the product conforms to the statements given in this declaration.	
Type of product *	***Workstation***
Commercial name *	***HP Z2 Tower G9 Workstation Desktop PC***
Model number *	***Z2 Tower G9***
Issue date *	***2/21/2022***
Intended market *	☒ **Global** ☒ **Europe** ☐ **Asia, Pacific & Japan** ☐ **Americas** ☐ **Other**
Additional information	

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

About Annex B2
Annex B2 reflects Product environmental attributes relevant for Computers and Computer Monitors. The following items from the ECMA-370 Main body are not shown in the template:
P4.1 – P4.3 Consumable materials
P9.1 TEC and Print speed
P10.2 - P10.3 Chemical emissions from printing products
P11.1 - P11.3 Consumable materials for printing products.

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Model number *	***Z2 Tower G9***	**Logo**	
Issue date *	***2/21/2022***		

Product environmental attributes - Legal requirements		**Requirement met**		
Item		Yes	No	n.a.
P1	**Hazardous substances and preparations**			
P1.1*	Products do comply with current European RoHS Directive. (See legal reference and NOTE B1)	☒	☐	
P1.2*	Products do not contain Asbestos (see legal reference). Comment: Legal reference has no maximum concentration value.	☒	☐	
P1.3*	Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	
P1.4*	Products do not contain more than; 0,005% polychlorinated biphenyl (PCB), 0,005% polychlorinated terphenyl (PCT) in preparations (see legal reference).	☒	☐	
P1.5*	Products do not contain more than 0,1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP (see legal reference).	☒	☐	
P1.6*	Parts with direct and prolonged skin contact do not release nickel in concentrations above 0,5 μg/cm²/week (see legal reference). Comment: Max limit in legal reference when tested according to EN1811:2011-5.	☒	☐	☐
P1.7*	REACH Article 33 information about substances in articles is available at (add URL or mail contact): REACH Article 33 Declarations (hp.com)	☒	☐	☐
P2	**Batteries**			
P2.1*	If the product contains a battery or an accumulator, the battery/accumulator is labeled with the disposal symbol. Information on proper disposal is provided in user manual. (See legal reference)	☒	☐	☐
P2.2*	Batteries or accumulators do not contain more than 0,0005% of mercury or 0,002% of cadmium. (See legal reference)	☒	☐	☐
P2.3*	Batteries and accumulators are readily removable. (See legal reference)	☐	☐	☒
P2.4*	Documentation includes the number of cycles the (secondary) battery can withstand. (See legal reference)	☒	☐	☐
P2.5*	When internal batteries of a notebook computer cannot be “accessed and replaced by a nonprofessional user”, the related text is present and legible on the external packaging (see legal reference)	☒	☐	☐
P3	**Conformity verification & Eco design (ErP)**			
P3.1*	The product is CE-marked to show conformance with applicable legal requirements (see legal reference). The Declaration of Conformity can be requested at (add link or e-mail address): http://www8.hp.com/uk/en/certifications/technical/regulations-certificates.html sustainability@hp.com	☒	☐	☐
P3.2*	The product complies with the applicable Eco design requirements for energy-related products, (see legal reference). Required information is; ☐ given in item P15 or added to this document, ☒ available at (add URL): https://h22235.www2.hp.com/hpinfo/globalcitizenship/environment/productdata/europeErPLot3desktop-pc.html	☒ ☒	☐ ☐	☐ ☐
P5	**Product packaging**			
P5.1*	Packaging and packaging components do not contain more than 0,01% lead, mercury, cadmium and hexavalent chromium by weight of these together.	☒	☐	
P5.2*	The packaging materials are marked with abbreviations and numbers indicating the nature of the material(s) used (see legal reference).	☒	☐	☐
P5.3*	The product packaging material is free from ozone depleting substances as specified in the Montreal Protocol (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	☐
P6	**Treatment information**			
P6.1*	Information for recyclers/treatment facilities is available (see legal reference).	☒	☐	☐

NOTE B1 Restriction applies to the homogeneous material, unless other specified and expressed in weight %. Stating “Yes” means that the product is compliant with the mandatory requirements.

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Model number *	*Z2 Tower G9*	**Logo**	
Issue date *	*2/21/2022*		

Product environmental attributes - Market requirements (See General NOTE GN below) **- Environmental conscious design**		**Requirement met**		
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.	Yes	No	n.a.
P7	**Design** **Disassembly, recycling**			
P7.1*	Parts that have to be treated separately are easily separable	☒	☐	☐
P7.2*	Plastic materials in covers/housing have no surface coating.	☒	☐	☐
P7.3*	Plastic parts > 100 g consist of one material or of easily separable materials.	☒	☐	☐
P7.4*	Plastic parts > 25 g have material codes according to ISO 11469 referring ISO 1043-4.	☒	☐	☐
P7.5	Plastic parts are free from metal inlays or have inlays that can be removed with commonly available tools.	☒	☐	☐
P7.6*	Labels are easily separable. (This requirement does not apply to safety/regulatory labels).	☒	☐	☐
	Product lifetime			
P7.7*	Upgrading can be done e.g. with processor, memory, cards or drives	☒	☐	☐
P7.8*	Upgrading can be done using commonly available tools	☒	☐	☐
P7.9	Spare parts are available after end of production for: **5** years			☐
P7.10	Service is available after end of production for: **5** years			☐
	Material and substance requirements			
P7.11*	Product cover/housing material type (e.g. plastics, metal, aluminum): Material type: ***steel*** Material type: Material type:			
P7.12	Insulation materials of external electrical cables are PVC free.	☐	☒	☐
P7.13	Insulation materials of internal electrical cables are PVC free.	☒	☐	☐
P7.14	External plastic casing/cover parts > 25 g contain no more than 0,1% weight (1000 ppm) bromine and 0,1% weight (1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame retardants, and polyvinyl chloride or 0,3% weight (3000 ppm) bromine and 0,3% weight (3000 ppm) chlorine in parts containing more than 25% post-consumer recycled content.	☒	☐	☐
P7.15	Printed circuit boards, PCBs (without components) are low halogen: all ☐ PCBs > 25 g ☒ are low halogen as defined in IEC 61249-2-21. (See [5]NOTE B2)	☒	☐	☐
P7.16	Flame retarded plastic parts > 25 g in covers / housings are marked according ISO 1043-4: Marking: ***>PBT+PET-GF30FR(40)<***	☒	☐	☐
P7.17	Alt. 1: Chemical specifications of flame retardants in printed circuit boards > 25 g (without components): TBBPA (additive) ☐, TBBPA (reactive) ☐ (See NOTE B3), Other; chemical name: , CAS #: Alt. 2: Chemical specifications of flame retardants in printed circuit boards (without components) > 25 g according ISO 1043-4: ***>PBT+PET-GF30FR(40)<***	☐ ☒	☐ ☐	☐ ☐
P7.18	Alt. 1: Flame retarded plastic parts > 25 g contain the following flame retardant substances/preparations in concentrations above 0,1%: 1. Chemical name: , CAS #: (See NOTE B4) 2. Chemical name: , CAS #: " 3. Chemical name: , CAS #: " Alt. 2: Chemical specifications of flame retardants in plastic parts > 25 g according ISO 1043-4: ***>PBT+PET-GF30FR(40)<***	☐ ☒	☐ ☐	☐ ☐
P7.19	In plastic parts > 25 g, flame retardant substances/preparations above 0,1% are used which have been assigned the following Risk phrases; and Hazard statements: The source(s) for these classifications is/are found at (add URL(s)): ***http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database*** (See note B5)	☐	☐	☒

GENERAL NOTE Standard references should direct to the latest version of a standard. If an older version of a standard is used, section P15 shall be used for explanation.

NOTE B2 IEC 61249-2-21 defines maximum limits of 900 ppm for each of the substances chlorine and bromine and a maximum limit of 1500ppm of these substances combined. The standard does not address fluorine, iodine and astatine which are included in the group of halogens.

NOTE B3 and B4 A Guidance document on Chemical substances is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm.

NOTE B5 If a certain substance has been assigned a certain risk phrases / hazard statement in the referenced source, this does not necessarily mean the substance has been tested for all of the hazards referred to by a certain customer.

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Model number *	***Z2 Tower G9***	**Logo**
Issue date *	***2/21/2022***	

Product environmental attributes - Market requirements (continued)		**Requirement met** Yes	No	n.a.
Item				
	Material and substance requirements (continued)			
P7.20*	Postconsumer recycled plastic material content is used in the product (See NOTE B6): ☐ If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the postconsumer recycled plastic material content (calculated as a percentage of total plastic by weight) is ***49.66*****%**. or b) The weight of recycled material is g.	☐	☐	☐
P7.21*	Biobased plastic material content is used in the product (See NOTE B7): ☐ If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the biobased plastic material content (calculated as a percentage of total plastic by weight) is %. or b) The weight of the biobased plastic material is g.	☐	☒	☐
P7.22*	Light sources are free from mercury, i.e. less than 0,1 mg/lamp. ☐ If mercury is used specify: Number of lamps: and maximum mercury content per lamp: mg	☐	☐	☒
P7.23*	If product includes an integral display, the total mercury content in the integrated display: mg ☐	☐	☐	☒
P8	**Batteries**			
P8.1*	Battery chemical composition: ***lithium/manganese dioxide***			☐
P9	**Energy consumption (See NOTE B8)**			
P9.1	For the product the following power levels or energy consumptions are reported:			

Energy mode *	Power level at **100** V AC	Power level at **115** V AC	Power level at **230** V AC	Reference/Standard for energy modes and test method * ☐
EPS No-load (External power supply / charger plugged in the wall outlet but disconnected from the product.)				***EPS Energy Test Report***
PTEC * Typical Energy Consumption	***19.63*** W	***19.48*** W	***19.41*** W	***EnergyStar@ Program Requirements for Computer*** ☐
ETEC * Annual Energy Consumption	kWh/year	kWh/year	kWh/year	***EnergyStar@ Program Requirements for Computer*** ☒
External Power Supply Efficiency Level (International Efficiency Marking Protocol) * :				***EnergyStar@ Program Requirements for Computer*** ☒
Display resolution * : megapixels				***EnergyStar@ Program Requirements for Computer*** ☒
Default time to enter energy save mode: minutes				***EnergyStar@ Program Requirements for Computer*** ☒

P9.2*	Information about the energy save function is provided with the product.	☒	☐	☐
P9.3	Energy efficiency class (monitors only):			☒

NOTE B6 Applies to a product containing plastic parts whose combined weight exceeds 100 g with the exception of printed circuit boards, cables, connectors and electronic components and bio-based plastic material.

NOTE B7 The following is to be excluded from the calculation of percentage: printed circuit boards, labels, cables, connectors and electronic components and postconsumer recycled plastic

NOTE B8 A Guidance document on Energy Efficiency is available;

see http://www.ecma-international.org/publications/standards/Ecma-370.htm.

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Model number *	***Z2 Tower G9***	**Logo**	
Issue date *	***2/21/2022***		

Product environmental attributes - Market requirements (continued)				**Requirement met**		
Item				Yes	No	n.a.
P10	**Emissions**					
	Noise emission – Declared according to ISO 9296 (See NOTE **B9**)					
P10.1	Mode	Mode description	Statistical upper limit A-weighted sound power level, $L_{WA,c}$ (B)			
	Idle	* ***Fans on***	* ***3.6***			☐
	Operation	* ***Fans on, HDD spinning***	* ***4.1***			☐
	Other mode					
	Measured according to: ☒ ISO 7779 ☒ ECMA-74 ☐ Other (only if not covered by ECMA-74)					
	Electromagnetic emissions					
P10.4	Computer display meets the requirement for low frequency electromagnetic fields of the following voluntary program(s):			☐	☐	☐
P12	**Ergonomics for computing products**					
P12.1*	The display meets the ergonomic requirements of ISO 9241-307 for visual display technologies.			☐	☐	☒
P12.2*	The physical input device meets the requirements of ISO 9995 and ISO 9241-410.			☒	☐	☐
P13	**Packaging and documentation**					
P13.1*	Product packaging material type(s): ***PAPER/Corrugated*** weight (kg): ***1.214*** Product packaging material type(s): ***PAPER/Molded Pulp*** weight (kg): ***0.890*** Product packaging material type(s): ***PLASTIC/Polyethylene low density - LDPE*** weight (kg): ***0.040***					
P13.2*	Product plastic primary packaging is free from PVC.			☒	☐	☐
P13.3*	For product primary corrugated fiberboard packaging, specify the contained percentage of minimum post-consumer recovered fiber content: ***63*** %					☐
P13.4*	Specify media for user and product documentation (tick box): Electronic ☐, Paper ☐, Other ☒ "available on hp.com"					☐
P13.5	(Please only complete this item if paper documentation used) User and product documentation on paper media is chlorine-free: If Yes, please specify: Totally chlorine-free Elemental chlorine-free Processed chlorine-free			☒ ☒ ☐ ☐	☐	
P14	**Voluntary programs**					
P14.1	The product meets the requirements of the following voluntary program(s): ENERGY STAR® Criteria version: ***8.0*** Date: ***02/21/2022*** Product category: ***Workstation*** Eco-label: ***TCO*** Criteria version: ***9.0*** Date: ***02/21/2022*** Product category: ***Workstation*** Eco-label: ***EPEAT*** Criteria version: ***IEEE 1680.1*** Date: ***02/21/2022*** Product category: ***Workstation***					
P15	**Additional information (See NOTE B10)**					
P9	***Energy consumption of computer products; description of the tested product configuration:***					
All Sections	***1. Product environmental information contained in this declaration is valid as of the date the declaration is published. Changes to external standards referenced in the IT Eco-Declaration may invalidate some information contained in this declaration over***					
P1	***1. This product does not include DEHP, BBP, DIBP, or DBP.***					

NOTE B9 A Guidance document on Acoustic Noise is available;
see http://www.ecma-international.org/publications/standards/Ecma-370.htm.

NOTE B10 Additional lines may be inserted to declare further items, by positioning the cursor at the far right of the row and hitting the <Enter> key.

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P7 ***Product Upgradability and Reparability***

The following table is provided in accordance with IEEE 1680.1-2018[6] criterion 4.4.2.5.

feature	Available [1]	Repairable [2]	Replaceable [3]	Upgradeable [4]
processor	Y	Y	Y	Y
main memory	Y	Y	Y	Y
mass storage (internal)	Y	Y	Y	Y
wireless networking	Y	Y	Y	Y
integrated graphics	Y	Y	N	N
discrete graphics	Y	Y	Y	Y
display panel	N	N/A	N/A	N/A
integrated keyboard	N	N/A	N/A	N/A
batteries	Y	Y	Y	Y
power supply	Y	Y	Y	Y
fan assemblies	Y	Y	Y	Y
speaker(s) (internal)	Y	Y	Y	Y
camera	N	N/A	N/A	N/A
touchpad	N	N/A	N/A	N/A
I/O connectors and external power connector	Y	Y	Y	Y
readers [5]	Y	Y	Y	Y

Table notes:
[1] Y* = feature is available, but may not be included in every configuration
[2] Product can be repaired (returned to fully functional state) if feature fails.
[3] Feature can be replaced using only commonly available tools without soldering or de-soldering. Y* = replacement may require replacing an assembly to which the feature is attached.
[4] Base feature may be upgraded by replacing it with a higher performance module or by expanding capacity through use of expansion slots. NOTE: This evaluation does not
account for situations in which the initial configuration purchased is already maximized. Contact HP Sales or an HP authorized reseller to determine the availability of upgrade parts and method to obtain them in your geography.
[5] This feature category includes readers such as fingerprint readers, smart card readers, and other read-only devices, but excludes read/write devices.

P9 ***1. European Union Commission Regulation 1275/2008- Energy Efficiency Information:***

Mode / Condition	Power Consumption in Watts at 230 VAC Input Voltage	Default Time to Mode / Conditi (if applicable)
Off Mode (if applicable)	***0.273***	Not Applicable
Standby Mode (if applicable)	Not Applicable	Not Applicable
Network Standby / Sleep / Long Idle Mode if all wired network ports are connected and all wireless network ports are activated (if applicable)	***N/A***	***N/A***
Network Standby / Sleep / Long Idle Mode (if applicable)	***N/A***	***N/A***

2.European Union Commission Regulation 1275/2008- Wireless Network Instructions:

Where applicable, activate and deactivate a wireless network using the instructions provided in the product user guide or the operating system. Information is also available at www.hp.com/support.

P10 Sound Pressure Level

Noise emission – Declared according to ISO 9296 (See NOTE [B9])

P10.1	Mode	Mode description	Statistical upper limit A-weighted sound pressure level, $L_{pA,m}$ (dB)
	Idle	* ***Fans on***	* ***18.2***
	Operation	* ***Fans on, HDD spinning***	* ***20.9***
	Other mode		
	Measured according to: ☒ ISO 7779 ☒ ECMA-74 ☐ ***Other*** ***(only if not covered by ECMA-74)***		

6 IEEE Standard for Environmental and Social Responsibility Assessment of Computers and Displays

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Legal references Europe Annex B2

Reference	Declaration item
Directive 2011/65/EU (RoHS Directive)* * Specific exemptions apply for certain products and applications.	P1.1, P3.1
Regulation (EC) 1907/2006 (REACH Regulation), annex XVII	P1.2, P1.4, P1.6, P1.7
Regulation (EC) 2037/2000, 2038/2000, 2039/2000 (Marketing and use of Ozone layer depleting substances)	P1.3, P5.3
Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002	P1.5
Directive 2006/66/EC (Battery and accumulators Directive), as amended.* * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	P2.1, P2.2, P2,3, P8.1
Directive 2014/35/EU (Low Voltage Directive)	P3.1
Directive 2014/30/EU (EMC Directive)	P3.1
Directive 2014/53/EU (RE Directive)	P3.1
Regulation (EC) 801/2013 amending Regulation (EC) No 1275/2008 with regard to ecodesign requirements for standby, off mode electric power consumption of electrical and electronic household and office equipment, and amending Regulation (EC) No 642/2009 with regard to ecodesign requirements for televisions	P3.1, P3.2
Commission Regulation (EC) No 278/2009 of 6 April 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for no-load condition electric power demand and average active efficiency of external power supplies	P3.1, P3.2, P9.1
COMMISSION REGULATION (EU) No 617/2013 of 26 June 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for computers and computer servers	P2.4, P2.5, P3.1, P3.2, P7.23, P9.1
Regulation（EC）No 1272/2008 (CLP Regulation)	P7.19
Directive 2004/12/EC (Packaging Directive)	P5.1
Decision 97/129/EC (Secondary packaging legislation)	P5.2
Directive 2012/19/EU (WEEE directive) Implementing Regulation (EU) 2019/290 establishing the format for registration and reporting of producers of electrical and electronic equipment to the register. Commission Implementing Regulation 2017/699 establishing a common methodology for the calculation of the weight of electrical and electronic equipment (EEE) placed on the national market in each Member State and a common methodology for the calculation of the quantity of waste electrical and electronic equipment (WEEE) generated by weight in each Member State.	P6.1

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DECLARATION OF CONFORMITY
according to ISO/IEC 17050-1 and EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350- R3 Original/en

Manufacturer's Name: **HP Inc.**

Manufacturer's Address: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

declare, under its sole responsibility that the product

Product Name and Model:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Regulatory Model Number:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Product Options: **Please See ANNEX I**

conforms to the following Product Specifications and Regulations:

Safety
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Spectrum
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Ecodesign
Regulation (EU) No. 617/2013
EN 62623:2013
Regulation (EC) No. 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

The product herewith complies with the requirements of the Radio Equipment Directive 2014/53/EU, the Ecodesign Directive 2009/125/EC, the RoHS Directive 2011/65/EU and carries the CE-marking accordingly.

US ONLY: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Additional Information:

1) **This product is assigned a Regulatory Model Number which stays with the regulatory aspects of the design. The Regulatory Model Number is the main product identifier in the regulatory documentation and test reports, this number should not be confused with the marketing name or the product numbers.**
2) **The Notified Body TIMCO Engineering, Inc. with number 1177 issued the EU-type examination certificate with ID: E1177-211569 according to Annex III, for the essential requirement of article 3.2 of the RED Directive**
3) **This product was tested in a typical HP environment.**

Palo Alto, CA
23-08-2022

Gilles Soulard
HP Inc.
1501 Page Mill Road, Palo Alto, CA
Gilles Soulard, Manager
Product Compliance Center

Gilles Soulard, Manager
Product Compliance Center

Local contact for regulatory topics only:

EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**
http://www.hp.eu/certificates

Click here to go to the translation(s)

DECLARATION OF CONFORMITY
according to ISO/IEC 17050-1 and EN 17050-1

ANNEX I

Regulatory Model Number: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPTIONS

DESCRIPTION:*	OPTION RMN:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Where X represents any alpha numeric character.**

KONFORMITÄTSERKLÄRUNG
nach ISO / IEC 17050-1 und EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Übersetzung/de

Herstellername: HP Inc.
Adresse des Herstellers: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

erklärt, dass das Produkt

Produktname und Modell:[2] HP Z2 Tower G9 Workstation Desktop PC
Regulatorische Model Nummer:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Produktoptionen: Siehe Anhang I

entspricht den folgenden Produktspezifikationen und Vorschriften:

Sicherheit:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMV
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Frequenzspektrum
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Öko-Design
Verordnung (EG) Nr. 617/2013
EN 62623:2013
Verordnung (EG) Nr. 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Das Produkt erfüllt die Anforderungen der RED-Richtlinie 2014/53/UE, die Ökodesign-Richtlinie 2009/125/EG, die RoHS-Richtlinie 2011/65/EU und trägt das CE-Kennzeichnung entsprechend.

NUR FÜR USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Zusätzliche Information:

1) **Für die regulatorischen Aspekte zum Design wurde diesem Produkt eine Regulatorische Model Nummer zugeordnet. Zur Produktidentifizierung in der regulatorischen Dokumentation und den Prüfberichten wird diese Regulatorische Model Nummer verwendet und sollte nicht zu Verwechslungen von Marketingnamen oder Produktnummern führen.**
2) **Die notifizierte Stelle TIMCO Engineering, Inc. mit Kennnummer 1177 hat eine Konformitätsprüfung (nach Anhang III, wegen fehlender harmonisierter Normen) durchgeführt und die folgende EU-Baumusterprüfbescheinigung ausgestellt: E1177-211569**
3) **Dieses Produkt wurde in einer typischen HP Konfiguration getestet.**

Palo Alto, CA
23-08-2022

überprüfen Sie die Unterschrift auf der ursprünglichen Erklärung beigefügt
Gilles Soulard, Manager
Product Compliance Center

Lokale Ansprechpartner für Richtlinien und Bestimmungen:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany

KONFORMITÄTSERKLÄRUNG

nach ISO / IEC 17050-1 und EN 17050-1

U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

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KONFORMITÄTSERKLÄRUNG
nach ISO / IEC 17050-1 und EN 17050-1

ANHANG I

Regulatorische Model Nummer (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPTIONEN

BESCHREIBUNG:*	RMN OPTION:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Wo X steht für eine beliebige alphanumerische Zeichen.**

DÉCLARATION DE CONFORMITÉ

selon la norme ISO / IEC 17050-1 et EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Traduction/fr

Nom du fabricant: HP Inc.
Adresse du fabricant: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

déclare que le produit

Nom du produit et le modèle:[2] HP Z2 Tower G9 Workstation Desktop PC
Numéro de modèle réglementaire:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Options du produit: Voir l'annexe I

est conforme aux normes et règlements de produit suivantes:

Sécurité:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Spectre radioélectrique
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

écoconception
Règlement (CE) n ° 617/2013
EN 62623:2013
Règlement (UE) n ° 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Ce produit est conforme aux exigences de la directive RED 2014/53/UE, la directive sur l'écoconception 2009/125/CE, la directive RoHS 2011/65/UE et porte la marque CE.

SEULEMENT POUR LES ETATS-UNIS: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informations complémentaires:

1) **A ce produit est assigné un numéro de modèle réglementaire qui reste avec les aspects réglementaires de la conception. Le numéro de modèle réglementaire est le principal identificateur de produit dans la documentation réglementaire et les rapports d'essais, ce nombre ne doit pas être confondu avec le nom commercial ou les numéros de produit.**
2) **L'organisme notifié TIMCO Engineering, Inc. avec numéro 1177 a réalisé une évaluation de la conformité (conformément à l'Annexe III, à cause de manque de normes harmonisées) et a délivré le certificat d'examen UE de type: E1177-211569**
3) **Ce produit a été testé dans un environnement typique HP en conjonction avec un système hôte HP.**

Palo Alto, CA
23-08-2022

vérifier la signature sur la déclaration d'origine annexé
Gilles Soulard, Manager
Product Compliance Center

Contact local pour les réglementations uniquement:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

DÉCLARATION DE CONFORMITÉ

selon la norme ISO / IEC 17050-1 et EN 17050-1

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DÉCLARATION DE CONFORMITÉ
selon la norme ISO / IEC 17050-1 et EN 17050-1

ANNEXE I

Numéro de modèle réglementaire (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPTIONS

DESCRIPTION:*	RMN OPTION:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Où X représente n'importe quel caractère alphanumérique.**

DICHIARAZIONE DI CONFORMITA'

secondo la norma ISO / IEC 17050-1 e EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Traduzione/it

Nome del Fornitore: **HP Inc.**

Indirizzo del Fornitore: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

dichiara che il prodotto

Nome del prodotto e modello:[2)] **HP Z2 Tower G9 Workstation Desktop PC**

Numero di modello normativo:[1)] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**

Opzioni del prodotto: **Vedere Allegato I**

è conforme alle seguenti specifiche e regolamenti di prodotto:

Sicurezza

- EN 62479:2010
- EN 62311:2008
- IEC 60950-1:2005 +A1:2009 +A2:2013
- IEC 62368-1:2018
- EN IEC 62368-1:2020 +A11:2020
- EN 50663:2017
- EN 50665:2017

EMC

- EN 55032:2015+A11:2020 Class B
- EN 55035:2017+A11:2020
- EN IEC 61000-3-2:2019
- EN 61000-3-3:2013 +A1:2019
- EN 301 489-1 V2.2.3
- EN 301 489-17 V3.2.4
- ICES-003, Issue 7
- FCC CFR 47 Part 15

Spettro Radio

- EN 300 328 V2.2.2
- EN 301 893 V2.1.1
- EN 300 440 V2.1.1
- EN 303 417 V1.1.1
- EN 303 687 V0.0.13

Ecodesign

- Regolamento (UE) No. 617/2013
  - EN 62623:2013
- Regolamento (CE) No. 1275/2008
  - EN 50564:2011
  - IEC 62301:2011

RoHS

- EN IEC 63000:2018

Questo prodotto è conforme ai requisiti della direttiva RED 2014/53/UE, la direttiva sulla Progettazione Ecocompatibile 2009/125/CE, la direttiva RoHS 2011/65/UE e porta il marchio CE.

SOLO PER GLI USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informazioni aggiuntive:

1) **A questo prodotto è assegnato un Numero di modello normativo (RMN) che rimane con gli aspetti normativi della progettazione. Il numero di modello normativo è l'identificativo principale del prodotto nella documentazione normativa e rapporti di prova, questo numero non deve essere confuso con il nome commerciale o il numero di prodotto.**
2) **L'organismo notificato TIMCO Engineering, Inc. con numero 1177 ha effettuato una valutazione di conformità (secondo l'Allegato III, because of missing harmonized standards) e rilasciato il certificato di esame UE del tipo: E1177-211569**
3) **Questo prodotto è stato testato in un tipico ambiente HP.**

Palo Alto, CA
23-08-2022

controllare la firma sulla dichiarazione originale allegata
Gilles Soulard, Manager
Product Compliance Center

Contatto locale solo per informazioni sulla conformità al marchio CE:

EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**

DICHIARAZIONE DI CONFORMITA'

secondo la norma ISO / IEC 17050-1 e EN 17050-1

U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

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DICHIARAZIONE DI CONFORMITA'
secondo la norma ISO / IEC 17050-1 e EN 17050-1

ALLEGATO I

Numero di modello normativo (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPZIONI

DESCRIZIONE:*	RMN OPZIONE:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Dove X rappresenta qualsiasi carattere alfanumerico.**

DECLARACIÓN DE CONFORMIDAD

según la norma ISO / IEC 17050-1 y EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Traducción/es

Nombre del fabricante: HP Inc.
Dirección del fabricante: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

declara que el producto

Nombre del producto y modelo:[2] HP Z2 Tower G9 Workstation Desktop PC
Número de modelo reglamentario:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Opciones del producto: Ver Anexo I

cumple con las siguientes especificaciones y normas de productos:

Seguridad:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Espectro radioeléctrico
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Diseño ecológico
Reglamento (CE) n º 617/2013
EN 62623:2013
Reglamento (CE) No. 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Este producto cumple con los requisitos de la directiva RED 2014/53/UE, la Directiva sobre diseño ecológico 2009/125/CE, la Directiva RoHS 2011/65/UE y lleva la marca CE.

SÓLO PARA EE.UU.: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Información Adicional:

1) **A este producto se asigna un número de modelo regulatorio que cumple con los aspectos regulatorios del diseño. El número de modelo normativo es el identificador principal del producto en la documentación reglamentaria e informes de ensayo, este número no se debe confundir con el nombre comercial o los números del producto.**
2) **El organismo notificado TIMCO Engineering, Inc. con número 1177 ha efectuado una evaluación de la conformidad (de acuerdo con el anexo III, debido a que faltan normas armonizadas) y expedido el certificado de examen UE de tipo: E1177-211569**
3) **Este producto se ha probado en un entorno típico de HP.**

Palo Alto, CA
23-08-2022

comprobar la firma de la primera declaración anexa
Gilles Soulard, Manager
Product Compliance Center

Contacto local únicamente para temas de normativa:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

DECLARACIÓN DE CONFORMIDAD

según la norma ISO / IEC 17050-1 y EN 17050-1

www.hp.eu/certificates

DECLARACIÓN DE CONFORMIDAD
según la norma ISO / IEC 17050-1 y EN 17050-1

ANEXO I

Número de modelo reglamentario (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPCIONES

DESCRIPCIÓN:*	RMN OPCIÓN:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Donde X representa cualquier carácter alfanumérico.**

DEKLARACJA ZGODNOŚCI
zgodnie z normą ISO / IEC 17050-1 i EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Tłumaczenie/pl

Nazwa producenta: HP Inc.
Adres producenta: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

oświadcza, że produkt

Nazwa produktu i modelu:[2] HP Z2 Tower G9 Workstation Desktop PC
Numer modelu:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Opcje produktu: Patrz załącznik I

jest zgodny z następującymi specyfikacjami produktu i rozporządzeń:

Bezpieczeństwo:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Widmo radiowe
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Ekoprojektu
Rozporządzenie (WE) nr 617/2013
EN 62623:2013
Rozporządzenie (WE) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Niniejszy produkt jest zgodny z wymaganiami Dyrektywa RED 2014/53/WE, Dyrektywa w sprawie ekoprojektu 2009/125/WE, Dyrektywa RoHS 2011/65/WE i posiada odpowiednio oznakowanie CE.

TYLKO DLA USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Dodatkowe informacje:

1) **Produkt ten został przypisany numer modelu z aspektów regulacyjnych projekt. Numer modelu jest głównym identyfikatorem produktu w dokumentacji normatywnej i raporty z badań, liczba ta nie powinna być mylona z nazwą handlową lub też liczby produktów.**
2) **Jednostka notyfikowana TIMCO Engineering, Inc. z numer 1177 przeprowadziła ewaluacja zgodności (zgodnie z załącznikiem III, ze względu na brak norm zharmonizowanych) i wydała certyfikat badania typu UE: E1177-211569**
3) **Produkt był testowany w typowym środowisku HP, w połączeniu z systemem gospodarza HP.**

Palo Alto, CA
23-08-2022

sprawdzić podpis na oryginale deklaracji załączonej
Gilles Soulard, Manager
Product Compliance Center

Lokalny kontakt na temat przepisów:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

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DEKLARACJA ZGODNOŚCI

zgodnie z normą ISO / IEC 17050-1 i EN 17050-1

DEKLARACJA ZGODNOŚCI
zgodnie z normą ISO / IEC 17050-1 i EN 17050-1

ZAŁĄCZNIK I

Numer modelu (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPCJE

OPIS:*	RMN OPCJA:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** W przypadku, gdy X oznacza dowolny alfa cyfrę.**

DECLARATIE DE CONFORMITATE

în conformitate cu ISO / IEC 17050-1 și EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Traducere/ro

producătorului Nume: HP Inc.

Adresa producătorului: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

declară că produsul

Nume produs și model:[2)] HP Z2 Tower G9 Workstation Desktop PC

Numărul de model de reglementare:[1)] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

Opțiuni de produse: A se vedea anexa I

în conformitate cu următoarele specificații și regulamentelor de produse:

Siguranță:
- EN 62479:2010
- EN 62311:2008
- IEC 60950-1:2005 +A1:2009 +A2:2013
- IEC 62368-1:2018
- EN IEC 62368-1:2020 +A11:2020
- EN 50663:2017
- EN 50665:2017

EMC
- EN 55032:2015+A11:2020 Class B
- EN 55035:2017+A11:2020
- EN IEC 61000-3-2:2019
- EN 61000-3-3:2013 +A1:2019
- EN 301 489-1 V2.2.3
- EN 301 489-17 V3.2.4
- ICES-003, Issue 7
- FCC CFR 47 Part 15

Spectrului de frecvențe radio
- EN 300 328 V2.2.2
- EN 301 893 V2.1.1
- EN 300 440 V2.1.1
- EN 303 417 V1.1.1
- EN 303 687 V0.0.13

ecodesign
- Regulamentul (CE) nr 617/2013
  - EN 62623:2013
- Regulamentul (CE) nr 1275/2008
  - EN 50564:2011
  - IEC 62301:2011

RoHS
- EN IEC 63000:2018

Produsul prezentat aici, corespunde cu cerintele Directiva RED 2014/53/UE, Directiva privind proiectarea ecologică 2009/125/CE, la Directiva RoHS 2011/65/UE și poartă marcajul CE în consecință.

NUMAI PENTRU STATELE UNITE ALE AMERICII: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informații suplimentare:

1) **Acest produs este atribuit un număr de model de reglementare care rămâne cu aspectele de reglementare ale proiectare. Numărul de model de reglementare este identificatorul principal produs în documentația de reglementare și rapoarte de încercare, acest număr nu trebuie confundat cu numele de marketing sau umerele de produs.**
2) **Organismul notificat TIMCO Engineering, Inc. cu număr 1177 a efectuat o evaluare a conformității (în conformitate cu anexa III, din cauza lipsei de standarde armonizate) și a emis certificatul de examinare UE de tip: E1177-211569**
3) **Acest produs a fost testat într-un mediu tipic HP împreună cu un sistem gazdă HP.**

Palo Alto, CA
23-08-2022

verifica semnătura de pe declarația inițială anexat
Gilles Soulard, Manager
Product Compliance Center

Local de contact pentru subiecte de reglementare numai:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany

U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

DECLARATIE DE CONFORMITATE

în conformitate cu ISO / IEC 17050-1 și EN 17050-1

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DECLARATIE DE CONFORMITATE
în conformitate cu ISO / IEC 17050-1 și EN 17050-1

ANEXA I

Numărul de model de reglementare (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPȚIUNI

DESCRIERE:*	RMN OPȚIUNE:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** În cazul în care X reprezintă orice caracter alfanumeric.**

CONFORMITEITSVERKLARING
volgens ISO / IEC 17050-1 en EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Vertaling/nl

Naam van de fabrikant: **HP Inc.**
Adres van de fabrikant: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

verklaart, dat het product

Naam van het product en model:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Regulatory Model Number:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Product opties: **Zie bijlage I**

voldoet aan de volgende productspecificaties en wetgeving:

Veiligheid:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Radiospectrum
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

ecodesign
Verordening (EG) nr. 617/2013
EN 62623:2013
Verordening (EG) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Het product voldoet aan de eisen van de RED-Richtlijn 2014/53/EU, de Ökodesign-Richtlijn 2009/125/EG, de RoHS-Richtlijn 2011/65/EU en draagt het kCE-keurmer.

ALLEEN VOOR DE VS: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Extra informatie:

1) **Dit product is voorzien van een wettelijk modelnummer die blijft bij de regelgevende aspecten van de ontwerp. Het voorgeschreven modelnummer is het belangrijkste product-id in de regelgeving documentatie en testrapporten, moet dit nummer niet verwarren met de merknaam of de productnummers.**
2) **De aangemelde instantie TIMCO Engineering, Inc. met nummer 1177 heeft een compliance assessment (overeenkomstig Bijlage III, vanwege het ontbreken van geharmoniseerde normen) uitgevoerd en het certificaat van EU-typeonderzoek E1177-211569 afgegeven.**
3) **Dit product werd getest in het HP-omgeving in combinatie met een HP hostsysteem.**

Palo Alto, CA
23-08-2022

controleren van een handtekening op het oorspronkelijke verklaring gehecht
Gilles Soulard, Manager
Product Compliance Center

Lokale contactpersoon voor mbtvoorschriften:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

CONFORMITEITSVERKLARING

volgens ISO / IEC 17050-1 en EN 17050-1

www.hp.eu/certificates

CONFORMITEITSVERKLARING
volgens ISO / IEC 17050-1 en EN 17050-1

BIJLAGE I

Regulatory Model Number (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPTIES

BESCHRIJVING:*	RMN OPTIE:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Waar X staat voor elke alfanumerieke tekens.**

MEGFELELŐSÉGI NYILATKOZAT
az ISO / IEC 17050-1 és EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Fordítás/hu

A gyártó neve: **HP Inc.**
Gyártó címe: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

kijelenti, hogy a termék

A termék neve és a modell:[2)] **HP Z2 Tower G9 Workstation Desktop PC**
Szabályozási Modell száma:[1)] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Termék opciók: **Lásd az I. melléklet**

megfelel az alábbi termék dokumentáció és rendeletek:

Biztonság:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Rádióspektrumügyek
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Környezetbarát tervezési
Regulation (EC) No. 617/2013
EN 62623:2013
Rendelet (EC) No. 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

A termék eleget tesz az RED 2014/53/EU irányelv, a környezetbarát tervezésről szóló 2009/125/EK irányelv, az RoHS 2011/65/EU irányelv viseli a CE jelzést viseli.

CSAK AZ EGYESÜLT ÁLLAMOK: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

További információ:

1) **Ez a termék tartozik egy hatósági azonosítási típusszám ami marad szabályozási szempontból a design. A szabályozási modellszámmal a fő termék azonosítóját a szabályozási dokumentációban és vizsgálati jelentések, ez a szám nem keverendő össze a kereskedelmi névvel vagy a termék számokat.**
2) **A(z) TIMCO Engineering, Inc. bejelentett szervezet, számmal 1177 adott esetben elvégezte a megfelelőség értékelésére (melléklet szerinti III, hiánya miatt a harmonizált szabványok) hiánya miatt a harmonizált szabványok E1177-211569**
3) **Ez a termék tesztelése egy tipikus HP környezetben együtt egy HP gazda rendszert.**

Palo Alto, CA
23-08-2022

ellenőrzi az aláírást az eredeti nyilatkozatot mellékelt
Gilles Soulard, Manager
Product Compliance Center

Helyi kapcsolattartó a jogi tudnivalókkal:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

www.hp.eu/certificates

MEGFELELŐSÉGI NYILATKOZAT

az ISO / IEC 17050-1 és EN 17050-1

MEGFELELŐSÉGI NYILATKOZAT
az ISO / IEC 17050-1 és EN 17050-1

I. MELLÉKLET

Szabályozási Modell száma (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPCIÓK

LEÍRÁS:*	RMN OPCIÓ:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Ha X jelentése bármilyen alfanumerikus karaktert.**

DECLARAÇÃO DE CONFORMIDADE
de acordo com a ISO / IEC 17050-1 e EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Tradução/pt

Nome do fabricante: **HP Inc.**
Endereço do fabricante: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

declara, que o produto

Nome do produto e modelo:[2)] **HP Z2 Tower G9 Workstation Desktop PC**
Número de Modelo de Regulamentação:[1)]FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Opções do produto: **Ver anexo I**

está em conformidade com as seguintes especificações e regulamentos do produto:

Segurança:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Espectro de radiofrequências
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

ecodesign
Regulamento (CE) n º 617/2013
EN 62623:2013
Regulamento (CE) n º 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

O produto está em conformidade com os requisitos da a Directiva RED 2014/53/UE, a Directiva Ecodesign 2009/125/CE, a Directiva RoHS 2011/65/UE e leva a marca CE de acordo.

SOMENTE PARA OS EUA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informações adicionais:

1) **Este produto recebeu um Número de modelo de regulamentação que fica com os aspectos regulatórios do design. O Número de Modelo de Regulamentação é o identificador principal do produto na documentação regulamentar e relatórios de ensaio, este número não deve ser confundido com o nome comercial ou os números dos produtos.**
2) **O organismo notificado: TIMCO Engineering, Inc. com número 1177 efetuou uma avaliação de conformidade (de acordo com o anexo III, por falta de normas harmonizadas) e emitiu o certificado de exame UE de tipo: E1177-211569**
3) **Este produto foi testado em um ambiente típico de HP.**

Palo Alto, CA
23-08-2022

verificar a assinatura na declaração original anexado
Gilles Soulard, Manager
Product Compliance Center

O contato local para tópicos regulamentares apenas:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**

DECLARAÇÃO DE CONFORMIDADE

de acordo com a ISO / IEC 17050-1 e EN 17050-1

U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

www.hp.eu/certificates

DECLARAÇÃO DE CONFORMIDADE
de acordo com a ISO / IEC 17050-1 e EN 17050-1

ANEXO I

Número de Modelo de Regulamentação (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPÇÕES

DESCRIÇÃO:*	RMN OPÇÃO:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Onde X representa qualquer caractere alfanumérico.**

ΔΉΛΩΣΗ ΣΥΜΜΌΡΦΩΣΗΣ

σύμφωνα με το πρότυπο ISO / IEC 17050-1 και EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Μετάφραση/el

Όνομα κατασκευαστή: **HP Inc.**
Διεύθυνση του κατασκευαστή: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

δηλώνει ότι το προϊόν

Όνομα προϊόντος και μοντέλου:[2)] HP Z2 Tower G9 Workstation Desktop PC
Αριθμός Μοντέλο κατά τους κανονισμούς:[1)]FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Επιλογές Προϊόντος: **Βλέπε παράρτημα I**

συμμορφώνεται προς τις εξής προδιαγραφές και κανονισμοί:

Ασφάλεια:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

ραδιοφάσματος
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

οικολογικού σχεδιασμού
Ο κανονισμός (ΕΚ) αριθ. 617/2013
EN 62623:2013
Κανονισμός (ΕΚ) αριθ 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Το παρόν προϊόν συμμορφώνεται με τις απαιτήσεις του η Οδηγία RED 2014/53/ΕΕ, η Οδηγία για τον οικολογικό σχεδιασμό 2009/125/ΕΚ, η Οδηγία RoHS 2011/65/ΕΕ και φέρει τη σήμανση CE.

Μόνο για τις ΗΠΑ: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Πρόσθετες πληροφορίες:

1) **Αυτό το προϊόν έχει εκχωρηθεί ένας ρυθμιστικός αριθμός μοντέλου που μένει με τις ρυθμιστικές πτυχές των σχεδιασμό. Ο αριθμός Ρυθμιστική μοντέλου είναι το κύριο αναγνωριστικό του προϊόντος με την κανονιστική τεκμηρίωση και εκθέσεις δοκιμών, ο αριθμός αυτός δεν πρέπει να συγχέεται με την εμπορική ονομασία ή τους αριθμούς προϊόντος.**
2) **Ο κοινοποιημένος οργανισμός TIMCO Engineering, Inc. με αριθμός 1177 πραγματοποίησε αξιολόγηση της συμμόρφωσης (σύμφωνα με το παράρτημα III, λόγω της λείπουν εναρμονισμένων προτύπων) και εξέδωσε το πιστοποιητικό εξέτασης τύπου ΕΕ: E1177-211569**
3) **Αυτό το προϊόν έχει δοκιμαστεί σε ένα τυπικό περιβάλλον HP.**

Palo Alto, CA
23-08-2022

ελέγξτε την υπογραφή για την αρχική δήλωση που προσαρτάται
Gilles Soulard, Manager
Product Compliance Center

Τοπική επαφής για θέματα κανονισμών μόνο:

ΔΉΛΩΣΗ ΣΥΜΜΌΡΦΩΣΗΣ

σύμφωνα με το πρότυπο ISO / IEC 17050-1 και EN 17050-1

EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**

U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

www.hp.eu/certificates

ΔΉΛΩΣΗ ΣΥΜΜΌΡΦΩΣΗΣ
σύμφωνα με το πρότυπο ISO / IEC 17050-1 και EN 17050-1

ΤΟ ΠΑΡΆΡΤΗΜΑ I

Αριθμός Μοντέλο κατά τους κανονισμούς (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

ΕΠΙΛΟΓΕΣ

ΠΕΡΙΓΡΑΦΗ:*	RMN ΕΠΙΛΟΓΉ:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Σε περίπτωση που το X αντιπροσωπεύει οποιοδήποτε αλφαριθμητικό χαρακτήρα.**

FÖRKLARING OM ÖVERENSSTÄMMELSE

i enlighet med ISO / IEC 17050-1 och EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Översättning/sv

Tillverkarens namn: **HP Inc.**

Tillverkarens adress: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

förklarar att produkten

Namn och modell:[2] **HP Z2 Tower G9 Workstation Desktop PC**

Regleringsmodellnummer:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**

Produktalternativ: **Se bilaga I**

överensstämmer med följande produktspecifikationer och förordningar:

Säkerhet:

- EN 62479:2010
- EN 62311:2008
- IEC 60950-1:2005 +A1:2009 +A2:2013
- IEC 62368-1:2018
- EN IEC 62368-1:2020 +A11:2020
- EN 50663:2017
- EN 50665:2017

EMC

- EN 55032:2015+A11:2020 Class B
- EN 55035:2017+A11:2020
- EN IEC 61000-3-2:2019
- EN 61000-3-3:2013 +A1:2019
- EN 301 489-1 V2.2.3
- EN 301 489-17 V3.2.4
- ICES-003, Issue 7
- FCC CFR 47 Part 15

Rádiového spektra

- EN 300 328 V2.2.2
- EN 301 893 V2.1.1
- EN 300 440 V2.1.1
- EN 303 417 V1.1.1
- EN 303 687 V0.0.13

ekodesign

Förordning (EG) nr 617/2013
- EN 62623:2013

Förordning (EG) nr 1275/2008
- EN 50564:2011
- IEC 62301:2011

RoHS

- EN IEC 63000:2018

Produkten uppfyller därmed kraven i Direktivet RED 2014/53/UE, Ekodesigndirektivet 2009/125/CE, RoHS-direktivet 2011/65/UE och är CE-märkning i enlighet därmed.

ENDAST FÖR USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ytterligare information:

1) **Den här produkten har tilldelats ett kontrollmodellnummer som stannar med de regulatoriska aspekterna av design. Kontrollmodellnumret är den viktigaste produktbeteckning i lagstiftnings dokumentation och provningsrapporter, detta nummer ska inte förväxlas med produktnamn eller produktnummer.**
2) **Det anmälda organet TIMCO Engineering, Inc. med nummer 1177 har utfört en bedömning av överensstämmelse (enligt bilaga III, på grund av saknade harmoniserade standarder) och utfärdat EU-typprovningsintyg: E1177-211569**
3) **Produkten testades i en typisk HP-miljö tillsammans med en HP-värdsystem.**

Palo Alto, CA
23-08-2022

kontrollera signaturen på den ursprungliga deklarationen som bifogas
Gilles Soulard, Manager
Product Compliance Center

Lokal kontakt bara för regleringsärenden:

EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

FÖRKLARING OM ÖVERENSSTÄMMELSE

i enlighet med ISO / IEC 17050-1 och EN 17050-1

www.hp.eu/certificates

FÖRKLARING OM ÖVERENSSTÄMMELSE
i enlighet med ISO / IEC 17050-1 och EN 17050-1

BILAGA I

Regleringsmodellnummer (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

ALTERNATIV

BESKRIVNING:*	RMN ALTERNATIV:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Där X representerar någon alfanumeriska tecken.**

PROHLÁŠENÍ O SHODĚ

podle normy ISO / IEC 17050-1 a ČSN EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Překlad/cs

Jméno výrobce: **HP Inc.**

Adresa výrobce: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

prohlašuje, že výrobek

Název produktu a model:[2] **HP Z2 Tower G9 Workstation Desktop PC**

Regulační číslo modelu:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**

Možnosti výrobku: **Viz příloha I**

vyhovuje následujícím specifikacím a nařízení produktu:

Bezpečnost:
- EN 62479:2010
- EN 62311:2008
- IEC 60950-1:2005 +A1:2009 +A2:2013
- IEC 62368-1:2018
- EN IEC 62368-1:2020 +A11:2020
- EN 50663:2017
- EN 50665:2017

EMC
- EN 55032:2015+A11:2020 Class B
- EN 55035:2017+A11:2020
- EN IEC 61000-3-2:2019
- EN 61000-3-3:2013 +A1:2019
- EN 301 489-1 V2.2.3
- EN 301 489-17 V3.2.4
- ICES-003, Issue 7
- FCC CFR 47 Part 15

Rádiové spektrum
- EN 300 328 V2.2.2
- EN 301 893 V2.1.1
- EN 300 440 V2.1.1
- EN 303 417 V1.1.1
- EN 303 687 V0.0.13

ekodesignu
- Nařízení (ES) č. 617/2013
  - EN 62623:2013
- Nařízení Rady (ES) č 1275/2008
  - EN 50564:2011
  - IEC 62301:2011

RoHS
- EN IEC 63000:2018

Tento výrobek splňuje požadavky Směrnice RED 2014/53/UE, Směrnice o ekodesignu 2009/125/CE, Směrnice RoHS 2011/65/UE a nese označení CE v souladu s CE.

POUZE PRO USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Další informace:

1) **Tento produkt je přiděleno regulatorní číslo modelu, který zůstává s regulačními aspekty konstrukce. Počet Regulační model je hlavním identifikátorem produktu v regulační dokumentaci a protokoly o zkouškách, toto číslo by nemělo být zaměňováno s marketingovým názvem nebo čísla produktu.**
2) **Oznámený subjekt TIMCO Engineering, Inc. s číslo 1177 provedl posouzení shody (Podle přílohy III, z důvodu chybějící harmonizované normy) a vydal certifikát EU přezkoušení typu: E1177-211569**
3) **Tento výrobek byl testován v typické prostředí HP ve spolupráci s hostitelským systémem HP.**

Palo Alto, CA
23-08-2022

zkontrolovat podpis na původní prohlášení připojeném
Gilles Soulard, Manager
Product Compliance Center

Lokální kontakt pro informace pouze o směrnicích:

EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**

U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

www.hp.eu/certificates

PROHLÁŠENÍ O SHODĚ

podle normy ISO / IEC 17050-1 a ČSN EN 17050-1

PROHLÁŠENÍ O SHODĚ
podle normy ISO / IEC 17050-1 a ČSN EN 17050-1

PŘÍLOHA I

Regulační číslo modelu (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

VOLBY

POPIS:*	RMN VOLBA:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Tam, kde X představuje libovolný alfanumerický znak.**

ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ

в съответствие с ISO / IEC 17050-1 и EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Превод/bg

Наименование на производителя: HP Inc.
Производителя Адрес: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

заявява, че продуктът

Име на продукта и модел:[2] HP Z2 Tower G9 Workstation Desktop PC
Нормативен номер на модела:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Опции на продукта: Виж приложение I

съответства на следните спецификации на продукта и регламенти:

Безопасност:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Радиочестотният спектър
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

екодизайна
Регламент (ЕО) No 617/2013
EN 62623:2013
Регламент (ЕС) № 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Този апарат в съответствие с изискванията на Директивата RED 2014/53/ЕС, Директивата за екодизайна 2009/125/ОТ, Директивата RoHS 2011/65/ЕС и носи маркировката съответно CE.

САМО ЗА САЩ: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Допълнителна информация:

1) **Този продукт има нормативен номер на модела, който остава с регулаторните аспекти на дизайн. Номер на Нормативен модел е идентификатора основен продукт в нормативната документация и протоколи от изпитвания, този брой не трябва да се бърка с пазарното име или номера на продукта.**
2) **Нотифицираният орган TIMCO Engineering, Inc. с номер 1177 е извършена оценка на съответствието (съгласно приложение III, поради липсващи хармонизирани стандарти) и издаде сертификата за ЕС изследване на типа: E1177-211569**
3) **Този продукт е изпробван в типична HP среда във връзка с хост система HP.**

Palo Alto, CA
23-08-2022

проверка на подписа върху оригинала на декларацията, приложена
Gilles Soulard, Manager
Product Compliance Center

Local контакт за регулаторни теми само:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501

ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ

в съответствие с ISO / IEC 17050-1 и EN 17050-1

www.hp.eu/certificates

ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ
в съответствие с ISO / IEC 17050-1 и EN 17050-1

ПРИЛОЖЕНИЕ I

Нормативен номер на модела (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPTIONS

ОПИСАНИЕ:*	RMN ОПЦИЯ:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Когато X представлява всяка алфа цифров знак.**

VYHLÁSENIE O ZHODE

podľa normy ISO / IEC 17050-1 a STN EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Preklad/sk

Meno výrobcu: HP Inc.
adresa výrobcu: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

prehlasuje, že výrobok

Názov produktu a model:[2] HP Z2 Tower G9 Workstation Desktop PC
Regulačné číslo modelu:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Možnosti výrobku: Pozri prílohu I

spĺňa nasledujúce špecifikácie a nariadenia produktu:

Bezpečnosť:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Rádiové spektrum
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

ekodizajne
Nariadenie (ES) č 617/2013
EN 62623:2013
Nariadenie Rady (ES) č 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Tento výrobok spĺňa požiadavky Smernice RED 2014/53/UE, Smernice o ekodizajne 2009/125/CE, Smernice RoHS 2011/65/UE a nesie označenie CE v súlade s CE.

LEN PRE USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ďalšie informácie:

1) **Tento produkt je pridelené regulačné číslo modelu, ktorý zostáva s regulačnými aspektmi konštrukcie. Počet Regulačný model je hlavným identifikátorom produktu v regulačnej dokumentácii a protokoly o skúškach, toto číslo by sa nemalo zamieňať s marketingovým názvom alebo s výrobnými číslami.**
2) **Notifikovaný orgán TIMCO Engineering, Inc. s číslo 1177 vykonal posúdenie zhody (Podľa prílohy III, z dôvodu chýbajúcej harmonizované normy) a vydal certifikát EÚ skúšky typu: E1177-211569**
3) **Tento výrobok bol testovaný v typickej prostredí HP v spolupráci s hostiteľským systémom HP .**

Palo Alto, CA
23-08-2022

skontrolovať podpis na pôvodnú vyhlásení pripojenom
Gilles Soulard, Manager
Product Compliance Center

Lokálne kontakt pre informácie iba o smerniciach:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501
www.hp.eu/certificates

VYHLÁSENIE O ZHODE

podľa normy ISO / IEC 17050-1 a STN EN 17050-1

VYHLÁSENIE O ZHODE
podľa normy ISO / IEC 17050-1 a STN EN 17050-1

PRÍLOHA I

Regulačné číslo modelu (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

VOĽBY

OPIS:*	RMN VOĽBA:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Tam, kde X predstavuje ľubovoľný alfanumerický znak.**

OVERENSSTEMMELSESERKLÆRING
i henhold til ISO / IEC 17050-1 og EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Oversættelse/da

Producentens navn: **HP Inc.**
Producentens adresse: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

erklærer, at produktet

Produktnavn og Model:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Lovpligtigt modelnummer:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Produkt Valg: **Se bilag I**

opfylder følgende produktspecifikationer og forordninger:

Sikkerhed:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Radiofrekvenser
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

miljøvenligt design
Forordning (EF) nr. 617/2013
EN 62623:2013
Forordning (EF) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Produktet overholder kravene iRED-direktivet 2014/53/EU, direktivet om miljøvenligt design 2009/125/EC, RoHS-direktivet 2011/65/EU og bærer CE-mærket i overensstemmelse hermed.

KUN FOR USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Yderligere information:

1) **Dette produkt er tildelt et lovpligtigt modelnummer, som forbliver de lovgivningsmæssige aspekter af den design. Det lovpligtige modelnummer er det vigtigste produkt-id i den lovgivningsmæssige dokumentation og testrapporter, bør dette antal ikke forveksles med navn markedsføringen eller varenumre.**
2) **Det bemyndigede organ TIMCO Engineering, Inc. med nummer 1177 har foretaget en vurdering af overholdelsen (i henhold til bilag III, på grund af manglende harmoniserede standarder) og udstedt EU-typeafprøvningsattest: E1177-211569**
3) **Dette produkt blev testet i en typisk HP-miljø i forbindelse med en HP host system.**

Palo Alto, CA
23-08-2022

kontrollere signaturen på den oprindelige erklæring, der er knyttet
Gilles Soulard, Manager
Product Compliance Center

Lokal kontaktperson for regulative emner:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

OVERENSSTEMMELSESERKLÆRING

i henhold til ISO / IEC 17050-1 og EN 17050-1

www.hp.eu/certificates

OVERENSSTEMMELSESERKLÆRING
i henhold til ISO / IEC 17050-1 og EN 17050-1

BILAG I

Lovpligtigt modelnummer (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

MULIGHEDER

BESKRIVELSE:*	RMN OPTION:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Hvor X betegner en hvilken som helst alfanumerisk tegn.**

VAATIMUSTENMUKAISUUSVAKUUTUS
ISO / IEC 17050-1: n ja EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Käännös/fi

Valmistajan nimi: **HP Inc.**
Valmistajan osoite: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

ilmoittaa, että tuote

Tuotteen nimi ja malli:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Säädösmallinumero:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Tuotevaihtoehdot: **Katso liite I**

täyttää seuraavat tuotevaatimukset ja asetukset:

Turvallisuus:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Radiotaajuuksien
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Ecodesign
Asetuksen (EY) N: o 617/2013
EN 62623:2013
Asetuksen (EY) N: o 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Tuote täyttää vaatimukset RED-direktiivin 2014/53/EU, Ekologista suunnittelua koskevan direktiivin 2009/125/EY, RoHS-direktiivin 2011/65/EU ja siinä on vastaava CE-merkintä.

VAIN USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Lisätiedot:

1) **Tämä tuote on annettu virallinen numero, joka pysyy hallinnolliset näkökohdat suunnittelu. Säädöksiä koskeva mallinumero on tärkein tuotteen tunniste sääntely asiakirjat ja testausselosteet, tätä numeroa ei pidä sekoittaa tuotteen nimeen tai tuotteen numeroita.**
2) **Ilmoitettu laitos TIMCO Engineering, Inc. numero 1177 suoritti vaatimustenmukaisuuden arviointia (mukaan liitteen III, johtua puuttuvista yhdenmukaistetut standardit) ja antoi EU-tyyppitarkastustodistuksen: E1177-211569**
3) **Tämä tuote testattu tyypillisessä HP ympäristöministeriö yhdessä HP isäntä järjestelmä.**

Palo Alto, CA
23-08-2022

Tarkista allekirjoitus alkuperäisen ilmoituksen liitteenä
Gilles Soulard, Manager
Product Compliance Center

Paikallinen yhteyshenkilö säännöksistä antavat:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**
www.hp.eu/certificates

VAATIMUSTENMUKAISUUSVAKUUTUS

ISO / IEC 17050-1: n ja EN 17050-1

VAATIMUSTENMUKAISUUSVAKUUTUS
ISO / IEC 17050-1: n ja EN 17050-1

LIITE I

Säädösmallinumero (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPTIONS

KUVAUS:*	RMN VAIHTOEHTO:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Jos X on mikä tahansa aakkosnumeerinen merkki.**

ATITIKTIES DEKLARACIJA
pagal ISO / IEC 17050-1 ir EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Vertimas/lt

Gamintojo pavadinimas: **HP Inc.**
Gamintojo adresas: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

pareiškia, kad produktas

Produkto pavadinimas ir modelis:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Normatyvinis modelio numeris:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Prekės pasirinkimai: **Žiūrėti I priedą**

atitinka šias produkto specifikacijas ir reglamentų:

Sauga:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMS
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Radijo dažnių spektras
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Ekologinio
Reglamentas (EB) Nr 617/2013
EN 62623:2013
Reglamentas (EB) Nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Šis gaminys atitinka reikalavimus, RED direktyva 2014/53/ES, Ekologinio projektavimo direktyva 2009/125/EB, RoHS direktyva 2011/65/ES ir yra pažymėtas CE ženklu atitinkamai.

TIK JAV: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Papildoma informacija:

1) **Šis produktas pažymėtas normatyviniu modelio numeriu, kuris lieka su reglamentavimo aspektų dizainas. Normatyvinis modelio numeris yra pagrindinė produkto identifikatorius reguliavimo dokumentus ir bandymų ataskaitos, šis skaičius neturėtų būti painiojamas su prekės pavadinimu arba gaminio numeriais.**
2) **Notifikuotoji įstaiga TIMCO Engineering, Inc. numeris 1177 atlikti atitikties įvertinimas (pagal III priedą, nes trūksta darniuosius standartus) ir išdavė ES tipo tyrimo sertifikatą: E1177-211569**
3) **Ši prekė buvo išbandytas standartinės HP aplinkoje kartu su HP priimančioji sistema.**

Palo Alto, CA
23-08-2022

patikrinti parašą, pridėto pradinio deklaracijos
Gilles Soulard, Manager
Product Compliance Center

Vietinis kontaktas normatyviniais klausimais tik:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**
www.hp.eu/certificates

ATITIKTIES DEKLARACIJA
pagal ISO / IEC 17050-1 ir EN 17050-1

I PRIEDAS

Normatyvinis modelio numeris (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

GALIMYBĖS

APRAŠYMAS:*	RMN PASIRINKIMAS:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Jeigu X žymi bet alfa skaitinė charakterį.**

SAMSVARSERKLÆRING

i henhold til ISO / IEC 17050-1 og EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Oversettelse/no

Produsentens navn: **HP Inc.**

Produsentens adresse: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

erklærer at dette produktet

Produktnavn og modell:[2] **HP Z2 Tower G9 Workstation Desktop PC**

Forskriftsmessig modellnummer:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**

Produktvalg: **Se vedlegg I**

er i samsvar med følgende produktspesifikasjoner og forskrift:

Sikkerhet:

- EN 62479:2010
- EN 62311:2008
- IEC 60950-1:2005 +A1:2009 +A2:2013
- IEC 62368-1:2018
- EN IEC 62368-1:2020 +A11:2020
- EN 50663:2017
- EN 50665:2017

EMC

- EN 55032:2015+A11:2020 Class B
- EN 55035:2017+A11:2020
- EN IEC 61000-3-2:2019
- EN 61000-3-3:2013 +A1:2019
- EN 301 489-1 V2.2.3
- EN 301 489-17 V3.2.4
- ICES-003, Issue 7
- FCC CFR 47 Part 15

Radio spektrum

- EN 300 328 V2.2.2
- EN 301 893 V2.1.1
- EN 300 440 V2.1.1
- EN 303 417 V1.1.1
- EN 303 687 V0.0.13

økodesign

- Forordning (EF) nr.. 617/2013
  - EN 62623:2013
- Forordning (EF) nr 1275/2008
  - EN 50564:2011
  - IEC 62301:2011

RoHS

- EN IEC 63000:2018

Produktet er i samsvar med kravene i RED-direktiv 2014/53/EU, den økodesign direktiv 2009/125/EF, RoHS-direktiv 2011/65/EU og bærer derfor CE-merket.

BARE FOR USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Tilleggsinformasjon:

1) **Dette produktet er tildelt et modellnummer som holder med de regulatoriske aspekter av design. Forskriftsmodellnummeret er den viktigste produkt-ID i regulatoriske dokumentasjon og testrapporter, bør dette nummeret ikke forveksles med markedsføringsnavnet eller produktnumrene.**
2) **Det tekniske kontrollorganet TIMCO Engineering, Inc. med nummer 1177 har foretatt en vurdering av etterlevelse (i samsvar med vedlegg III, på grunn av mangel av harmoniserte standarder) og utstedte EU-typeprøvingssertifikatet: E1177-211569**
3) **Produktet ble testet i et typisk miljø HP i forbindelse med en HP-vertssystemet.**

Palo Alto, CA
23-08-2022

sjekk signaturen på originalerklæringen annektert
Gilles Soulard, Manager
Product Compliance Center

Lokal kontakt for spørsmål om forskrifter:

EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

www.hp.eu/certificates

SAMSVARSERKLÆRING

i henhold til ISO / IEC 17050-1 og EN 17050-1

SAMSVARSERKLÆRING
i henhold til ISO / IEC 17050-1 og EN 17050-1

VEDLEGG I

Forskriftsmessig modellnummer (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

ALTERNATIVER

BESKRIVELSE:*	RMN OPSJON:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Hvor X representerer en hvilken som helst alfa-numeriske karakteren.**

IZJAVA O SKLADNOSTI

v skladu z ISO / IEC 17050-1 in EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Prevajanje/sl

Ime proizvajalca: HP Inc.
Naslov proizvajalca: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

izjavlja, da izdelek

Ime izdelka in model:[2] HP Z2 Tower G9 Workstation Desktop PC
Upravna številka modela:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Možnosti izdelka: Glej Prilogo I

v skladu z naslednjimi specifikacijami in predpisi o izdelku:

Siguranţă:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Radijski spekter
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

okoljsko primerni zasnovi
Regulamentul (CE) nr 617/2013
EN 62623:2013
Regulamentul (CE) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Izdelek je skladen z zahtevami Direktiva RED 2014/53/EU, Direktiva o okoljsko primerni zasnovi 2009/125/ES, Direktiva RoHS 2011/65/EU in nosi oznako CE v skladu s tem.

SAMO ZA ZDA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Dodatne informacije:

1) **Ta izdelek je dodeljena upravna številka modela, ki ostane pri regulativnih vidikih zasnova. Število Regulativni model je glavni identifikator izdelka v regulativnem dokumentacije in poročila o preskusih, to število ne sme zamenjevati s tržnim imenom ali številkami izdelka.**
2) **Priglašeni organ TIMCO Engineering, Inc. s številko 1177 izvedel oceno skladnosti (v skladu s Prilogo III, zaradi manjkajočih usklajenih standardov) in izdal certifikat o EU-pregledu tipa: E1177-211569**
3) **Acest produs fost testat intr-un Mediu tipic HP împreună cu un sistem Gazda HP.**

Palo Alto, CA
23-08-2022

verifica semnătura de pe declaraţia iniţială anexat
Gilles Soulard, Manager
Product Compliance Center

Lokalni kontakt za upravnimi temami:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501
www.hp.eu/certificates

IZJAVA O SKLADNOSTI

v skladu z ISO / IEC 17050-1 in EN 17050-1

IZJAVA O SKLADNOSTI
v skladu z ISO / IEC 17050-1 in EN 17050-1

PRILOGA I

Upravna številka modela (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

MOŽNOSTI

OPIS:*	RMN MOŽNOST:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Če je X predstavlja nobene alfa numerični znak.**

VASTAVUSDEKLARATSIOON
vastavalt ISO / IEC 17050-1 ja EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Tõlkimine/et

Tootja nimi: **HP Inc.**
Tootja aadress: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

kinnitab, et toode

Toote nimi ja mudel:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Normatiivne mudelinumber:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Toote lisaseadmed: **Vt lisa I**

vastab järgmistele tootespetsifikatsioonidele ja määrused:

Ohutus:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Raadiospektri
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

ökodisaini
Määruse (EÜ) nr 617/2013
EN 62623:2013
Määruse (EÜ) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Käesolev toode vastab nõuetele RED direktiivi 2014/53/EL, Ökodisaini direktiivi 2009/125/EÜ, RoHS direktiivi 2011/65/EL ning kannab CE-märgistusega.

AINULT USA: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Lisainfo:

1) **See toode on määratud normatiivne mudelinumber mis jääb regulatiivsed aspektid disain. Normatiivne mudelinumber on peamine toode tunnuse reguleerivad dokumendid ja katseprotokollid, see number ei tohiks segamini ajada toote nime või toode numbrid.**
2) **Teavitatud asutus TIMCO Engineering, Inc. tag number 1177 teostatud vastavushindamise (III lisa kohaselt, sest puuduvad harmoneeritud standardid) ja andis välja ELi tüübihindamistõendi: E1177-211569**
3) **See toode on testitud tüüpiliste HP keskkonnas koos HP vastuvõtva süsteemi .**

Palo Alto, CA
23-08-2022

kontrollida allkirja esialgse deklaratsiooni lisatud
Gilles Soulard, Manager
Product Compliance Center

Kohalik kontakt Ainult normatiivsete küsimuste korral:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**
www.hp.eu/certificates

VASTAVUSDEKLARATSIOON

vastavalt ISO / IEC 17050-1 ja EN 17050-1

VASTAVUSDEKLARATSIOON
vastavalt ISO / IEC 17050-1 ja EN 17050-1

I LISA

Normatiivne mudelinumber (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPTIONS

KIRJELDUS:*	RMN VALIK:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Kui X on ükskõik tähtnumbriline märk.**

IZJAVA O SUKLADNOSTI
u skladu s ISO / IEC 17050-1 i EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Prijevod/hr

Naziv proizvođača: **HP Inc.**
Proizvođača adresa: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

izjavljuje da je proizvod

Naziv proizvoda i Model:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Broj modela prema propisima:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Mogućnosti proizvoda: **Vidi Prilog I**

sukladan sljedećim specifikacijama proizvoda i propisa:

Sigurnost:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Radio spektar
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Ekološki dizajn
Uredba (EZ) br 617/2013
EN 62623:2013
Uredba (EZ) br 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Navedeni proizvod sukladan sa zahtjevima RED Direktivom 2014/53/EU, Ekološki dizajn Direktivom 2009/125/EC, RoHS Direktivom 2011/65/EU i nosi CE oznaka u skladu s tim.

SAMO ZA SAD: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Dodatne informacije:

1) **Ovaj proizvod je dodijeljen broj modela prema propisima koji ostaje s regulatornim aspektima Dizajn. Broj modela prema propisima je glavni identifikator proizvod u regulatornom dokumentacije i izvješća o ispitivanju, ovaj broj ne treba brkati s marketinškim nazivom ili brojeve proizvoda.**
2) **Prijavljeno tijelo TIMCO Engineering, Inc. s brojem 1177 provelo je procjeni usklađenosti (prema Prilog III, jer nedostaje usklađene standarde) i izdalo potvrdu o EU ispitivanju tipa: E1177-211569**
3) **Ovaj proizvod je ispitan u tipičnoj HP okoliš u suradnji s HP-host sustava.**

Palo Alto, CA
23-08-2022

provjeriti potpis na izvorne izjave priložen
Gilles Soulard, Manager
Product Compliance Center

Lokalno kontakt za pravna pitanja samo:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**
www.hp.eu/certificates

IZJAVA O SUKLADNOSTI

u skladu s ISO / IEC 17050-1 i EN 17050-1

IZJAVA O SUKLADNOSTI
u skladu s ISO / IEC 17050-1 i EN 17050-1

PRILOG I.

Broj modela prema propisima (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPCIJE

OPIS:*	RMN OPCIJA:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Gdje X predstavlja nikakvu alfa numeričku karakter.**

ATBILSTĪBAS DEKLARĀCIJA
saskaņā ar ISO / IEC 17050-1 un EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Tulkojums/lv

Ražotāja nosaukums: HP Inc.
Ražotāja adrese: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

paziņo, ka produkts

Produkta nosaukums un modelis:[2] HP Z2 Tower G9 Workstation Desktop PC
Regulējošais modeļa numurs:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Izstrādājuma iespējas: Féach pielikums I

atbilst šādām iekārtas specifikācijām un regulām:

Sábháilteacht:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Radiofrekvenču spektrs
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

ekodizains
Rialachán (CE) Uimh 617/2013
EN 62623:2013
Rialachán (CE) Uimh 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Produkts ar šo atbilst prasībām RED direktīva 2014/53/ES, Ekodizaina direktīva 2009/125/EK, RoHS direktīva 2011/65/ES un veic CE marķējums atbilstoši.

TIKAI ASV: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Papildus informācija:

1) **Šis produkts ir piešķirts regulējošais modeļa numurs, kas paliek ar normatīvajiem aspektiem dizainu. Regulējošais modeļa numurs ir galvenais produkts identifikators pārvaldes dokumentācijā un testēšanas pārskati, šis skaits nedrīkst sajaukt ar mārketinga nosaukumu vai produktu numuriem.**
2) **Paziņotā struktūra TIMCO Engineering, Inc. ar numurs 1177 ir veikusi atbilstības novērtēšana (saskaņā ar III pielikumu, jo trūkst saskaņotus standartus) un izdevusi ES tipa pārbaudes sertifikātu: E1177-211569**
3) **Rinneadh tástáil ar táirge SEO i dtimpeallacht HP tipiciúil i gcomhar le CORAS óstach HP.**

Palo Alto, CA
23-08-2022

seiceáil par síniú ar dearbhú bunaidh i gceangal
Gilles Soulard, Manager
Product Compliance Center

Vietējā kontaktpersona jautājumos par reglamentāciju tikai:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501
www.hp.eu/certificates

ATBILSTĪBAS DEKLARĀCIJA
saskaņā ar ISO / IEC 17050-1 un EN 17050-1

I PIELIKUMS

Regulējošais modeļa numurs (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

RISINĀJUMI

APRAKSTS:*	RMN IZVĒLE:*
2.4, 5 GHz WLAN + BT Transceiver	**AX211NGW**

*** Kur X apzīmē jebkuru burtu ciparu raksturs.**

LEYFISYFIRLÝSING
samkvæmt ISO / IEC 17050-1 og EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Þýðing/is

Framleiðanda Heiti: **HP Inc.**
Heimilisfang framleiðanda: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

því yfir, að varan

Nafn vöru og Model:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Regulatory Model Number:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Valmöguleikar vöru: **Sjá viðauka I**

í samræmi við eftirfarandi forskriftir vara og reglugerðir:

Öryggi:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Tíðniróf
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

visthönnun
Reglugerð (EB) nr. 617/2013
EN 62623:2013
Reglugerð (EB) nr 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Varan hér með í samræmi við kröfur RED tilskipun 2014/53/EU, Tilskipun um vistvæna hönnun 2009/125/EB, RoHS tilskipun 2011/65/EU og ber CE-merkið í samræmi.

AÐEINS FYRIR BANDARÍKIN: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Viðbótarupplýsingar:

1) **Þessi vara er úthlutað Regulatory tegundarnúmer sem dvelst hjá reglugerðum þætti í hönnun. The Regulatory Model Number er helsta vara auðkenni í reglugerðum skjöl og prófunarskýrslur, þetta númer ætti ekki að rugla saman við nafn markaðssetningu eða vörunúmerum.**
2) **Tilkynnta aðilans TIMCO Engineering, Inc. með númer 1177 flutt farið mat (samkvæmt viðauka III, vegna vantar samhæfðir staðlar) og gaf út ESB-gerðarprófunarvottorðinu: E1177-211569**
3) **Þessi vara var prófað í dæmigerðum HP umhverfi í tengslum við HP móti kerfinu.**

Palo Alto, CA
23-08-2022

athuga undirskrift á upprunalegu yfirlýsingu fylgir
Gilles Soulard, Manager
Product Compliance Center

Upplýsingaskrifstofa fyrir reglusetningu efni eingöngu:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**
www.hp.eu/certificates

LEYFISYFIRLÝSING
samkvæmt ISO / IEC 17050-1 og EN 17050-1

LEYFISYFIRLÝSING
samkvæmt ISO / IEC 17050-1 og EN 17050-1

VIÐAUKA I

Regulatory Model Number (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPTIONS

LÝSING:*	RMN VALKOSTUR:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Þar sem X táknar allir alfa tölugildi karakter.**

DIKJARAZZJONI TA 'KONFORMITÀ
skond ISO / IEC 17050-1 u EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Traduzzjoni/mt

Isem tal-manifattur: HP Inc.
Indirizz tal-manifattur: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

jiddikjara, li l-prodott

Isem tal-prodott u Mudell:[2] HP Z2 Tower G9 Workstation Desktop PC
Mudell regolatorju Numru:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350
Għażliet tal-prodott: Ara l-Anness I

jikkonforma mal-Prodott Speċifikazzjonijiet li ġejjin u Regolamenti:

Sigurtà:
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Ispettru tar-radju
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Ekodisinn
Ir-Regolament (KE) Nru 617/2013
EN 62623:2013
Regolament (KE) Nru 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Il-prodott hawnhekk jikkonforma mar-rekwiżiti tal-Direttiva RED 2014/53/UE, Direttiva tal-Ekodisinn 2009/125/KE, Direttiva RoHS 2011/65/UE u jkollu l-marka CE kif xieraq

BISS GĦALL-ISTATI UNITI: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informazzjoni addizzjonali:

1) **Dan il-prodott huwa assenjat għal mudell regolatorju Numru li jibqa 'mal-aspetti regolatorji ta' l- disinn. Il-Numru tal-Mudell regolatorja hija l-identifikatur tal-prodott ewlieni fid-dokumentazzjoni regolatorju u rapporti tat-test, dan in-numru ma għandux jiġi mfixkel ma 'isem marketing jew in-numri tal-prodott.**
2) **Il-korp notifikat TIMCO Engineering, Inc. ma in-numru 1177 wettaq valutazzjoni konformità (skond l-Anness III, minħabba nieqsa istandards armonizzati) u ħareġ iċ-ċertifikat tal-eżami tat-tip tal-UE: E1177-211569**
3) **Dan il-prodott ġie ttestjata f'ambjent HP tipiku flimkien ma 'sistema ospitanti HP.**

Palo Alto, CA
23-08-2022

jivverifika l-firma fuq id-dikjarazzjoni oriġinali annessa
Gilles Soulard, Manager
Product Compliance Center

Kuntatt lokali għal suġġetti regolatorji biss:
EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501
www.hp.eu/certificates

DIKJARAZZJONI TA 'KONFORMITÀ
skond ISO / IEC 17050-1 u EN 17050-1

DIKJARAZZJONI TA 'KONFORMITÀ
skond ISO / IEC 17050-1 u EN 17050-1

ANNESS I

Mudell regolatorju Numru (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

GĦAŻLIET

DESKRIZZJONI:*	RMN GĦAŻLA:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Fejn X jirrappreżenta xi karattru numeriku alpha.**

UYGUNLUK BEYANI

ISO / IEC 17050-1 ve EN 17050-1 uygun olarak

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Çeviri/tr

Üretici Adı: **HP Inc.**
Üretici Adresi: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

beyan eder, ürün

Ürün Adı ve Modeli:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Yasal Model Numarası:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Ürün Opsiyonları: **Bkz: Ek I**

aşağıdaki Ürün spesifikasyonlarına ve Yönetmeliklere uygun olduğunu beyan eder:

Güvenlik
EN 62479:2010
EN 62311:2008
IEC 60950-1:2005 +A1:2009 +A2:2013
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN 50663:2017
EN 50665:2017

EMC
EN 55032:2015+A11:2020 Class B
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-17 V3.2.4
ICES-003, Issue 7
FCC CFR 47 Part 15

Spektrum
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 417 V1.1.1
EN 303 687 V0.0.13

Ekotasarım
Yönetmelik (AB) No. 617/2013
EN 62623:2013
Yönetmelik (EC) No. 1275/2008
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

Ürün, bu belgeyle birlikte, şu şartlarına uygundur RED Direktifi 2014/53/AB, Ekotasarım Direktifi 2009/125/EC, RoHS Direktifi 2011/65/AB ve uygun CE işaretini taşır.

SADECE ABD IÇIN: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ek Bilgiler:

1) **Bu ürüne tasarım sırasında, teknik mevzutlar gözetilerek bir Yasal Model Numarası atanmıştır. Yasal Model Numarası, ana ürün için düzenleyici belgelerinde ve test raporlaronda tanımlayıcıdır. Bu numara pazarlama adı veya ürün numaraları ile karıştırılmamalıdır.**
2) **Onaylanmış Kuruluş TIMCO Engineering, Inc. numarası 1177, (uyumlaştırılmış standartların eksik olması nedeniyle Ek III'e göre) bir uygunluk değerlendirmesi gerçekleştirmiş ve E1177-211569 no'lu AB-tip inceleme sertifikası düzenlemiştir.**
3) **Bu ürün, tipik bir HP ortamında test edilmiştir .**

Palo Alto, CA
23-08-2022

imza için orginal DoC ye bakınız
Gilles Soulard, yetkili
Product Compliance Center

Sadece teknik yasal konular için kontak:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**

UYGUNLUK BEYANI

ISO / IEC 17050-1 ve EN 17050-1 uygun olarak

U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

www.hp.eu/certificates

UYGUNLUK BEYANI
ISO / IEC 17050-1 ve EN 17050-1 uygun olarak

EK I

Yasal Model Numarası (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPSİYONLAR

AÇIKLAMA:*	RMN OPSİYON:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** X herhangi bir alfabetik sayısal karakteri gösterir.**

Top of the Document

DEKLARACIJA O USAGLAŠENOSTI
prema ISO / IEC 17050-1 și EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Prevođenje/sr

Naziv proizvođača: **HP Inc.**
Adresa proizvođača: **1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**

izjavljuju pod isključivom odgovornošću da je proizvod

Naziv proizvoda i model:[2] **HP Z2 Tower G9 Workstation Desktop PC**
Broj regulatornog modela:[1] **FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350**
Opcije: **Vidi PRILOG I**

u skladu sa sledećim specifikacijama proizvoda i propisima:

Sigurnost:
- EN 62479:2010
- EN 62311:2008
- IEC 60950-1:2005 +A1:2009 +A2:2013
- IEC 62368-1:2018
- EN IEC 62368-1:2020 +A11:2020
- EN 50663:2017
- EN 50665:2017

EMK
- EN 55032:2015+A11:2020 Class B
- EN 55035:2017+A11:2020
- EN IEC 61000-3-2:2019
- EN 61000-3-3:2013 +A1:2019
- EN 301 489-1 V2.2.3
- EN 301 489-17 V3.2.4
- ICES-003, Issue 7
- FCC CFR 47 Part 15

Radiofrekvencijski spektar
- EN 300 328 V2.2.2
- EN 301 893 V2.1.1
- EN 300 440 V2.1.1
- EN 303 417 V1.1.1
- EN 303 687 V0.0.13

Ekodizajn
- Uredba (EZ) br 617/2013
  - EN 62623:2013
- Uredba (EZ) br 1275/2008
  - EN 50564:2011
  - IEC 62301:2011

RoHS
- EN IEC 63000:2018

Navedeni proizvod je u skladu sa zahtevima RED Direktive 2014/53/EU, Ekodizajn Direktive 2009/125/EC, RoHS Direktive 2011/65/EU i prema tome nosi oznaku CE.

SAMO ZA SAD: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Dopunske Informacije:

1) **Ovom proizvodu je dodeljen regulatorni broj modela koji ostaje u skladu sa regulatornim aspektima dizajna. Regulatorni broj modela je glavni identifikator proizvoda u regulatornoj dokumentaciji i izveštajima o ispitivanju, ovaj broj ne treba mešati sa marketinškim nazivom ili brojevima proizvoda.**
2) **Imenovano telo TIMCO Engineering, Inc. sa brojem 1177 izvršilo je ocenjivanje usaglašenosti (prema prilogu III nedostaju harmonizovani standardi) i izdalo je EU potvrdu o ispitivanju br.ID: E1177-211569**
3) **Ovaj proizvod je testiran u tipičnom HP okruženju.**

Palo Alto, CA
23-08-2022

proverite potpis na originalnoj deklaraciji na engleskom jeziku u prilogu gore
Gilles Soulard, Manager
Product Compliance Center

Lokalni kontakt samo za regulatorne teme:
EU: **HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany**
U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

DEKLARACIJA O USAGLAŠENOSTI

prema ISO / IEC 17050-1 și EN 17050-1

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DEKLARACIJA O USAGLAŠENOSTI
prema ISO / IEC 17050-1 și EN 17050-1

PRILOG I

Broj regulatornog modela (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPCIJE

OPIS:*	RMN OPCIJE:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Gde X predstavlja bilo koji alfanumerički znak.**

DEKLARATA E KONFORMITETIT

në përputhje me ISO / IEC 17050-1 dhe EN 17050-1

DoC #: FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350-R3Përkthimi/al

Emri e prodhuesit: HP Inc.

Adresa e prodhuesit: 1501 Page Mill Road, Palo Alto, CA 94303-1112 USA

deklarojnë, nën përgjegjësinë e vetme që produkti

Emri dhe modeli i produktit:[2] HP Z2 Tower G9 Workstation Desktop PC

Numri i Modelit Rregullator:[1] FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

Opsionet e produktit: Shih aneksin I

përputhet me specifikimet dhe rregulloret e mëposhtme të produktit:

Sigurinë e produktit:
- EN 62479:2010
- EN 62311:2008
- IEC 60950-1:2005 +A1:2009 +A2:2013
- IEC 62368-1:2018
- EN IEC 62368-1:2020 +A11:2020
- EN 50663:2017
- EN 50665:2017

Përputhshmëria elektromagnetike
- EN 55032:2015+A11:2020 Class B
- EN 55035:2017+A11:2020
- EN IEC 61000-3-2:2019
- EN 61000-3-3:2013 +A1:2019
- EN 301 489-1 V2.2.3
- EN 301 489-17 V3.2.4
- ICES-003, Issue 7
- FCC CFR 47 Part 15

Spektri i radio
- EN 300 328 V2.2.2
- EN 301 893 V2.1.1
- EN 300 440 V2.1.1
- EN 303 417 V1.1.1
- EN 303 687 V0.0.13

Ekodizajni
- Rregullorja (KE) nr 617/2013
  - EN 62623:2013
- Rregullorja (KE) nr 1275/2008
  - EN 50564:2011
  - IEC 62301:2011

RoHS
- EN IEC 63000:2018

Navedeni proizvod sukladan sa zahtjevima RED Direktivom 2014/53/EU, Ekološki dizajn Direktivom 2009/125/EC, RoHS Direktivom 2011/65/EU i nosi CE oznaka u skladu s tim.

VETËM PËR SH.B.A.: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Informacion shtese:

1) **Këtij produkti i është caktuar një Numër Modeli Rregullator i cili qëndron me aspektet rregullatore të modelit. Numri i Modelit Rregullator është identifikuesi kryesor i produktit në dokumentacionin rregullator dhe raportet e provave, ky numër nuk duhet të ngatërrohet me emrin e marketingut ose numrat e produkteve.**
2) **Organi i njoftuar TIMCO Engineering, Inc. numër 1177 ka kryer një vlerësim të konformitetit (sipas Aneksit III, për shkak të mungesës së standardeve të harmonizuara) dhe ka lëshuar një certifikatë të provimit të tipit BE: E1177-211569**
3) **Ky produkt u testua në një mjedis tipik HP.**

Palo Alto, CA
23-08-2022

kontrolloni nënshkrimin në deklaratën origjinale angleze të bashkangjitur më sipër
Gilles Soulard, Manager
Product Compliance Center

Kontakt lokal vetëm për tema rregullatore:

EU: HP Deutschland GmbH, HP HQ-TRE, 71025 Boeblingen, Germany

DEKLARATA E KONFORMITETIT

në përputhje me ISO / IEC 17050-1 dhe EN 17050-1

U.S.: **HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501**

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DEKLARATA E KONFORMITETIT
në përputhje me ISO / IEC 17050-1 dhe EN 17050-1

ANEKSI I

Numri i Modelit Rregullator (RMN): FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350

OPSIONE

PËRSHKRIM:*	OPSIONI RMN:*
2.4, 5 GHz WLAN + BT Transceiver	AX211NGW

*** Ku X paraqet ndonjë karakter alfa numerik.**

Microsoft

Hardware certification report **Approved**

Private product ID:	**14583652101653309**
Shared product ID:	**401304713**
Submission ID:	**1152921505696194241**
Submission date:	**4/18/2023**
Completion date:	**4/18/2023**
Company:	**HP Inc.**
Product name:	**HP Z2 Tower G9 Workstation Desktop PC**
Category:	**System**
Product type:	**Desktop**
Qualification level:	**Certified for Microsoft Windows 11 Client family version 22H2, x64**
Marketing name:	**HP Z2 Tower G9 Workstation Desktop PC**

Microsoft Certified

HP Z2 Tower G9 Workstation Desktop PC ENERGY STAR

Product Summary:

Product Type:	**Workstation**
Registered In:	**Brazil**
Manufacturer:	**HP**
EPEAT Tier:	**Gold**
Registration Date:	**2022-02-23**
Product Status:	**Active**
Exceptions:	**Configurations that are not ENERGY STAR qualified do not meet required criterion 4.5.1.1. Configurations that include the HP Healthcare Wired Keyboard and Mouse or the HP USB Keyboard and Mouse Healthcare Edition do not meet optional criterion 4.1.4.1**

All unique product identifiers existing for this product may not be listed here. If the unique product identifier you are looking for is not listed, please contact EPEAT at EPEAT@GEC.org.

EXPORT PRODUCT SUMMARY

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable “required” criteria. Click here to see a list of the required criteria for this product category.

This product has met the necessary required criteria.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

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Products that meet all required criteria and achieve **less than 50%** of the optional points are rated at **EPEAT Bronze**

Products that meet all required criteria and achieve **50 - 74%** of the optional points are rated at **EPEAT Silver**

Products that meet all required criteria and achieve **75 - 100%** of the optional points are rated at **EPEAT Gold**

The optional criteria for this product category and optional points achieved by this product are listed below.

Optional Criteria	Scores
4.1 Substance Management	12 / 16
4.2 Materials Selection	3 / 3
4.4 Product longevity/life-cycle extension	1 / 2
4.5 Energy Conservation	1 / 2
4.7 Packaging	2 / 2
4.8 Life cycle assessment and carbon footprint	6 / 6
4.9 Corporate Environmental Performance	9 / 9
4.10 Corporate social responsibility	4 / 6
TOTAL OPTIONAL CRITERIA SCORE:	**38 / 46**

Please note that it is not required for a product to achieve any optional points.

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A) to the product are not included in the Total Optional Criteria Score, and are not reflected above.

For any questions, comments, or feedback regarding the EPEAT Registry, please contact us.

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EPEAT REGISTRY PRIVACY POLICY EPEAT REGISTRY TERMS OF USE

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Certificado de Conformidade

Certificate of Conformity

Certificado/*Certificate*
UL-BR 24.1271

Revisão / Review
00

Emissão / *Issue*
5 de setembro de 2024
September 5, 2024

Validade / *Expiration*
4 de setembro de 2027
September 4, 2027

Reconhecer que o Solicitante / *Acknowledge that the Certificate Holder*

HP BRASIL INDÚSTRIA E COMÉRCIO DE EQUIPAMENTOS ELETRÔNICS LTDA
CNPJ: 22.086.683/0001-84

avaliou o produto / *has had*

ESTAÇÃO DE TRABALHO / *WORKSTATION*

ao qual atende aos requisitos do Programa de Certificação ou Portaria / *evaluated and meets the requirements of the Certification Program or Decree*

PORTARIA NO. 304:2023 /
DECREE NO. 304/2023

e pode ostentar o Selo de Identificação da Conformidade do Sistema Brasileiro de Avaliação da Conformidade (SBAC) sobre o(s) produto(s) relacionado(s) neste certificado.
and can display the Conformity Identification Seal of the Brazilian Conformity Assessment System (SBAC) on the product(s) listed in this certificate.

Rafael O. Parada
Program Owner

UL do Brasil Certificações, organismo acreditado pela Coordenação Geral de Acreditação do INMETRO – CGCRE, segundo o registro Nº OCP-0029. /
UL do Brasil Certificações, Certification Body accredited by Coordenação Geral de Acreditação do INMETRO - CGCRE according to the register Nr OCP-0029.

Certificado de conformidade válido somente acompanhado das páginas de 1 a 44
Certificate of Conformity valid only if accompanied from pages 1 to 44

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Form-ULID-017660 – Rev. 3.0

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.1271**

Emissão / ***Issue***	**Revisão /** *Review*: **00**	**Validade /** ***Expiration***
6 de setembro de 2024 *September 6, 2024*		5 de setembro de 2027 *September 5, 2027*

Solicitante / *Certificate Holder* **(100039-522)**
HP BRASIL INDÚSTRIA E COMÉRCIO DE EQUIPAMENTOS ELETRÔNICS LTDA
ALAMEDA XINGU, 350, ANDAR 8 CONJ. 801 – ALPHAVILLE, BARUERI, SP. CEP: 06455-030
CNPJ: 22.086.683/0001-84

Fabricante / *Manufacturer* **(100500-147)**
FLEXTRONICS INTERNATIONAL TECNOLOGIA LTDA
AVENIDA LIBERDADE, 6315
18087-170 – SOROCABA – SP – BRASIL

Modelo de Certificação / *Certification Model*
5

Norma(s) Aplicável(is) / *Applicable standards*
IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, CISPR 22:2008, CISPR 32:2012, CISPR 32:2015/COR:2016, CISPR 24:2010+ A1:2015, IEC 61000-3-2:2014, IEC 61000-3-3:2013, IEC 61000-4-2:2008, IEC 61000-4-3:2006 +A1:2007 +A2:2010, IEC 61000-4-4:2012, IEC 61000-4-5:2014, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2004

Identificação UL / *UL Identification*
BR2357, Vol. 8, Sec. 24; Sec 32; Sec 47; Sec 48; Sec 50; Sec 52; Sec 56, Sec 60

Lote ou No. de Série / *Lot or Serial Number*
N/A

Identificação da Família/Modelo/Lote de Produto(s) Certificado(s):
Identification of the Family/Model/Lot of Certified Product(s):

Marca / *Brand Name*	**Modelo /** *Model*	**Descrição /** *Description*	**Código de Barras /** *Bar Code Number*
HP	FCLSA-1701A, FCLSA-1701B, FCLSA-1701C, FCLSA-1703A, FCLSA-1703B, TPC-F114-MT-250A, TPC-F114-MT-250C, TPC-F114-MT-500D, TPC-F114-MT-500L, TPC-F128-MT-350 / TPC-F128-MT-500E / TPC-F128-MT-500P, TPC-F138-MT-700, TPC-F138-MT-500, TPC-F138-MT-350, FCW-F001MT-700, FCW-F001MT-500, FCW-F001MT-450, FCW-F001MT-350, FCLSA-2201A, FCLSA-2201B, FCLSA-2201C, FCLSA-2203A, FCLSA-2203B	HP Z4 G4, Z8 G4, HP Z2 TOWER G4, HP Z2 TOWER G5, HP Z2 G8 TOWER WORKSTATION DESKTOP PC, HP Z2 TOWER G9 WORKSTATION DESKTOP PC, HP Z2 TOWER G9 WORKSTATION DESKTOP PCX, HP Z4 G5 Workstation Desktop PC, HP Z4 G5 Workstation, HP Z8 G5 Workstation Desktop PC, HP Z8 G5 Workstation	N/A

Informações de Ensaios / *Test Information:*

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Audix Technology (Shenzhen) Co. Ltd.	ACSCBIT17011	2017-09-18
Audix Technology (Shenzhen) Co. Ltd.	ACS-E17564	2017-09-28
Audix Technology (Shenzhen) Co. Ltd.	ACSCBIT17009	2017-08-29
Audix Technology (Shenzhen) Co. Ltd.	ACSCBIT17009-01	2017-09-22
Audix Technology (Shenzhen) Co. Ltd.	ACSCBIT17009-03	2018-10-26
Audix Technology (Shenzhen) Co. Ltd.	ACSCBIT17009-04	2019-05-22
Audix Technology (Shenzhen) Co. Ltd.	ACS-E17485-1	2018-08-08
Audix Technology (Shenzhen) Co. Ltd.	ACSCBIT18009-02	2019-03-11
Audix Technology (Shenzhen) Co. Ltd.	ACS-E18098-1	2019-04-16
Audix Technology (Shenzhen) Co. Ltd.	ACSCBIT20005	2020-04-13
Audix Technology Corporation, EMC Department	EM-E200130	2020-03-23

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.1271**

Emissão / ***Issue***	**Revisão /** *Review*: **00**	**Validade /** ***Expiration***
6 de setembro de 2024 *September 6, 2024*		5 de setembro de 2027 *September 5, 2027*

Audix Technology Corporation, EMC Department	ATTCB109143	2020-12-23
Audix Technology Corporation, EMC Department	ACSCBIT20005	2020-04-13
Audix Technology Corporation, EMC Department	ACS-E20182-2	2020-12-15
IBEC	R211299	2021-09-01
IBEC	R211321	2021-08-06
Audix Technology (Shenzhen) Co. Ltd.	ACSCBIT21009	2021-12-13
Audix Technology (Shenzhen) Co. Ltd.	ACWE-RC210344	2021-12-01
Audix Technology (Shenzhen) Co. Ltd.	ATTCB111110	2022-11-24
Audix Technology (Shenzhen) Co. Ltd.	ACS-E23023	2023-02-09
Audix Technology (Shenzhen) Co. Ltd.	ATTCB111071	2022-11-24
Audix Technology (Shenzhen) Co. Ltd.	ACS-E22172-1	2023-02-09
Audix Technology (Shenzhen) Co. Ltd.	ACS-E22172	2022-09-16
IBEC	R240325	2024-04-18
IBEC	R240326	2024-05-08

Informações de Auditoria / *Audit Information:*

Local da Auditoria / *Audit Location*	**Data de Realização /** *Perform Date*
Tratamento de Reclamações *Complaint Handling*	2024-04-19
Fabricante *Manufacturer*	2024-03-27

Informações Adicionais / *Additional Information:*

100-240V~, 6A; 10A; 12A, 50-60Hz / 115-127V~ 16A; 200-240V 10A, 50-60Hz.
100-240V~, 50-60Hz, 3A
100-240V~, 50-60Hz, 4A / 6A / 8.2A / 10A
100-240V~, 8.2A, 6A, 5.5A, 4.2A, 50-60Hz

Observações / *Observations:*

1. A validade deste Certificado de Conformidade está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações da UL do Brasil Certificações previstas no RAC específico. Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro.
   The validity of this Certificate of Conformity is linked to the performance of maintenance assessments and treatment of possible non-conformities in accordance with the guidelines of UL do Brasil Certifications provided for in the specific Conformity Assessment Regulation. To check the updated condition of regularity of this Certificate of Conformity, the Inmetro database of certified products and services must be consulted.

2. Este certificado aplica-se aos equipamentos (produtos) idênticos ao protótipo avaliado e certificado, manufaturados na(s) unidade(s) fabril(is) mencionada (s) acima.
   This certificate applies to the products that are identical to the prototype investigated, certified and manufactured at the production site mentioned in this certificate.

3. Qualquer alteração no produto, incluindo a marcação, invalidará o presente certificado, salvo se o solicitante informar por escrito à UL do Brasil Certificações sobre esta modificação, a qual procederá à avaliação e decidirá quanto à continuidade da validade do certificado.
   Any non-authorized changes performed in the product, including marking, will invalidate this certificate. UL do Brasil Certificações must be notified about any desired change. This notification will be analyzed by UL do Brasil Certificações that will decide about certificate force.

4. Esta autorização está vinculada a um contrato e para o escopo acima citado.
   This license is related to a commercial proposal and to the scope above cited.

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.1271**

Emissão / ***Issue***
6 de setembro de 2024
September 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de setembro de 2027
September 5, 2027

Histórico de Revisões / *Revisions History:*

Revisão / *Review*	**Data /** *Date*	**Descrição da Revisão /** *Revision Description*
00	05/09/2024	Emissão Inicial com recertificação do certificado UL-BR 21.1705 / *Initial issue*
A última revisão substitui e cancela as anteriores / *The last review replaces and cancels the previous ones*		

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1069

Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.1271**

Emissão / ***Issue***
6 de setembro de 2024
September 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de setembro de 2027
September 5, 2027

Anexo I / *Attachment I:*

Componente/ *Component*	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Metal	--	--	Minimum 1.0 mm thickness (Chassis dimensions approx. 17.5 in x 15.2 in x 6.65 in / 44.5 cm x 38.6 cm x 16.9 cm)	--	--
Plastic Enclosure (decorate part)	Interchange able	Interchangeable	Minimum HB.	UL94 UL 746C	UL
Ari duct (optional)	Interchange able	Interchangeable	Minimum V-2, See Diagrams ID 3-02	UL94 UL 746C	UL
Switching Power Supply	Chicony Power Technology Co., Ltd.	D15-1K0P1A	I/P: 100-127Vac, 12A, 50-60Hz; 200-240Vac,6.3A, 50-60Hz; 118Vac, 12A, 400Hz, O/P: DC V12-M0/18A, V12-M1/9A, V12-B/18A, V12-D/18A, V12-S/18A, V12-G1/18A, V12- G2/18A, V12- CPU0/18A, V12-CPU1/18A, V12- CPU2/18A, V12 CPU3/18A, 5VSB/6A V12(CPU0, CPU1, CPU2,CPU3, M0, M1, B, D, S, G1 and G2) shall not exceed 1000W. Total continuous output power 1000W max. Max. Operating altitude up to 5 000 m, Max. ambient40 ℃.	IEC 60950 1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011+A2:2013. UL60950-1	CB by TUV Rheinland, (Cert. No. JPTUV-075284A1/M1. Report No.11047801003) UL(E143709)
Alternate	DELTA ELECTRO NICS INC	DPS-465AB-3XX DPS-1125BBXX DPS-1450ABXX (X can be 0- 9, A-Z or blank)	Input: 100-240V/6A; 50-60Hz; 118V/6A, 400Hz. DC Output: V12,1- CPU0/18A; V12,1- CPU2/18A; V12,1-M0/18A; V12,1-B/18A; V12,1-S/18A; 5VSB/5,5A, V12,1- CPU0 & V12,1-CPU2 & V12,1-M0 & V12,1-B & V12,1-S, TOTAL 38, 5A(465W)MAX. MAX. TOTAL OUTPUT 465W. Operating altitude up to 5 000 m, Max. ambient 50℃.	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 +A2:2013. UL60950-1	CB by UL (Demko), (Cert. No. DK-63185-UL. Report No. E131881-A2118-CB-1) UL(E131881)
Alternate	DELTA ELECTRO NICS INC	DPS-750AB-36 XX (X can be 0- 9, A-Z or blank)	Input: 100-240V ~/ 10A, 50-60Hz; 118V~/ 10A, 400 Hz. Output: Max. TOTAL OUTPUT 750W, V12- CPU0/18A;V12-CPU2/18A;V12- M0/18A;V12-B/18A;V12- S/18A;V12-D/18A; V12-G1/18A;V12- G2/18A; 5VSB/5,5A. The total current(Power) of combined V12- CPU0,V12-CPU2,V12-M0,V12- B,V12-S,V12-D,V12- G1,V12-G2 is 62,5A(750W) MAX. Operating altitude up to 5 000 m, Max. ambient 50℃.	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 +A2:2013. UL60950-1	CB by UL (Demko), (Cert. No. DK-63227-UL. Report No. E131881-4787962865. 1 (BA1)-1) UL(E131881)

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Internal Plastic Parts	Interchangeable	Interchangeable	Minimum V-2 or HF-2	UL 94, UL 746C	UL
Certification Marks Label Materials (All factories)	Worldmark	3311T-E2	Used in combination with Printer/Ribbon DPW3000-140-450. Affixed to the metal surface.	UL 969, CSA C22.2 No. 15. Additionally evaluated in the end product to IEC 60950-1, 2nd Ed.Am 2	UL
Hard Disk Device (Optional) - (up to four 3.5" HDD's or up to four 2.5" HDD's if provided)	Interchangeable	Interchangeable	5 Vdc / 2.0 A Max, 12 Vdc / 2.5A Max or 5Vdc/ 2.5A Max.	IEC 60950-1, EN 60950-1, UL 60950-1	Verified by other certificate body
Solid State Drive (2.5"and/or M.2) (Optional) -(up to 4 SSD's and/or up to 2 M.2's provided if provided)	Interchangeable	Interchangeable	5/12V, 2.0/2.0A or 5V, max. 3.0A	IEC 60950-1, EN 60950-1, UL 60950-1	Verified by other certificate body
Optical Drive Device (optional) (up to 2 if provided)	Interchangeable	Interchangeable	5Vdc/2.5A Max.; 12Vdc/ 3.0A Max. or 5Vdc/2.5A Max. Laser Class 1. Recognized at least UL60950- 1+A1.	EN60950-1:2006+A1; IEC/EN60825-1; IEC60950-1(evaluate and complied with clause 4.2.11 of IEC609501/Am1:2009) or IEC 60950 1/A1:2009	Verified by other certificate body
Internal speaker	Interchange able	Interchangeable	4 ohm, 3 W Max	--	--
Internal Wiring	Interchangeable	Interchangeable	PVC, TFE, PTFE, FEP, or neoprene insulated, or surface marked "VW-1 or FT- 1", rated minimum 300 V, 105Â° C, routed away from mechanically moving parts and does not pass over sharp edges. Wiring in LVISC may be rated min. 30 V, 80C.	UL 758, CSA C22.2 No. 210.2	UL, cUL or CSA
Connectors and Receptacles	Interchangeable	Interchangeable	Connectors in low voltage secondary circuitry (SEC) (ELV, SELV)	UL 1977	UL
DC FAN (Front Chassis fan) (optional)	Foxconn Technology Co., Ltd	PVA092G12H-P29	DC 12V, 1.20A, 84.42CFM min	EN60950-1 UL 507	TUV UL
Alternate	Delta Electronics Inc	AUB0912VH	DC12V, Max. 0.60A, 62.51CFM min	EN60950-1 UL 507	VDE UL
Alternate	Interchangeable	Interchangeable	DC12V, Max. 1.20A, 62.51CFM min	EN60950-1 UL 507	VDE, TUV or UL
DC FAN (CPU cooler fan)	Foxconn Technology Co., Ltd	PVA092G12S PVA092G12H-P29	DC 12V, MAX. 0.40A, 60.0CFM min 84.24CFM min	EN60950-1 UL 507	TUV UL
Alternate	Delta Electronics Inc	QUR0912VH QUR0912SJ-00	DC 12V, MAX. 0.6A, 62.50CFM min 77.00CFM min	EN60950-1 UL 507	VDE UL

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Alternate	Interchange able	Interchangeable	DC12V, Max. 0.6A, 60.0CFM min	EN60950-1 UL 507	VDE, TUV or UL
DC FAN (Front Middle Chassis fan)	Foxconn Technology Co., Ltd	PVA080G12R-P29-AE	DC12V, Max. 0.80A, 71.1CFM min	EN60950-1 UL 507	TUV UL
Alternate	Delta Electronics Inc	AUB0812SJ-00XXXXXX, X stands foe A-Z, 0-9, -or blank	DC12V, Max. 0.84A, 6 66.64CFM min	EN60950-1 UL 507	VDE UL
DC FAN (Rear chassis fan)	Foxconn Technology Co., Ltd	PVA120G12T PVA120K12P	DC 12V, 0.5A, 102.24CFM min 135.18CFM min	EN60950-1 UL 507	TUV UL
Alternate	Delta Electronics Inc	AFB1212VH	DC 12V, 0.6A max, 95.70 CFM min	EN60950-1 UL 507	VDE UL
Alternate	Interchange able	Interchangeable	DC 12V, 0.6A max, 95.70 CFM min	EN60950-1 UL 507	VDE, TUV or UL
DC FAN (Memory fan up to 2 provided - optional)	Foxconn Technology Co., Ltd	PVA060G12N PVA120G12S	DC 12V, 0.55A, 25.77 CFM min	EN60950-1 UL 507	TUV UL
Alternate	Delta Electronics Inc	AFB0612EH AUB1212H	DC 12V, 0.48A, 36.38CFM min 68.52CFM min	EN60950-1 UL 507	VDE UL
Alternate	Interchange able	Interchangeable	DC 12V, 0.55A, 25.77 CFM min	EN60950-1 UL 507	VDE, TUV or UL
Front IO Module (FIO-E) (optional)	Foxconn	FMB-1704 FMB-1705	SELV, Front IO Module (FIO-E) UL approval covers the PWB material, connector plastics, and any other plastics, and foam materials used, and the operator accessible connector overcurrent protection devices.See additional information for this item below:	UL 60950-1, 2nd Ed. CAN/CSA C22.2 No. 60950-1-07, 2nd Ed. Additionally evaluated in the end product to IEC 60950-1 2nd Ed.	UL
-PWB	Interchange able	Interchangeable	V-1 or better, Minimum 105 °C	UL796	UL
-Current Limited Power Switch (U850 for USB 3.0 port J70)	DIODES Incorporated	AP21xyz, The —x‖ in the model name can be any number from 4 to 9 (denoting active low or active high enable pin).—y‖ can be 1, 2, 5 or 6 (denoting channel switch type). -z‖ can be blank, single or multiple alphanumeric characters, not affecting safety.	2.7-5.5V, single channel switch. Cont. Current: 1.5A, Current limit (typical): 2.1A	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013. UL2367	CB by TUV Rheinland, (Cert. No. JPTUV-075284- A1/M1. Report No. 11047801003) UL
Alternate	TEXAS INSTRUMENTS INC	TPS2068C, followed by DBV, DGK or DGN may be followed by additional letters and numbers.	Input Voltage - 4.5Vdc to 5.5Vdc, Output Continuous Rating: 1.5A; Output Current Limit: 2.7 A, Ambient= -40 to 85°C	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, EN 60950-1:2006 + A11:2009 + A1:2010+ A12:2011+A2:201 UL2367	CB by UL Demko (Cert. No. US-24596- UL) UL

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-Current Limited Power Switch (U1108 for Type C port (J210), U1109 for Type C port (J211))	NXP Semiconductor Taiwan Ltd.	NX5P3290UK	Input Voltage Range: 4.0 Vdc to 5.5Vdc Current Limit Rating: 3.3 A	IEC 62368-1: 2014, EN 62368-1: 2014, UL 62368-1	CB by UL Demko UL
-Poly Switch (F3 for USB 3.0 port(J71))	Littelfuse Inc	0805L150ULYR	6Vdc, 1.5A	EN 60730-1 UL 1434	TUV Rheinland, UL
Motherboard	Foxconn	FMB-1701	SELV, Motherboard UL approval covers the PWB material, lithium battery, lithium battery protect circuit, connector plastics, and any other plastics, and foam materials used, fan(s) and the operator accessible connector over current protection devices. See additional information for this item below:	UL 60950-1, 2nd Ed. CAN/CSA C22.2 No. 60950-1-07, 2nd Ed. Additionally evaluated in the end product to IEC 60950-1 2nd Ed.	UL
-RTC Battery	SHUN WO NEW POWER BATTERY TECHNOLOGY LTD	CR2032*, * - Cell model numbers maybe followed by an optional slash (/) and single or multiplealphanumeric characters which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	JHIH HONG TECHNOLOGY CO LTD	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	Interchangeable	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
-Poly Switch (F1for PS2 port(J66 J67))	Littelfuse Inc	0805L110ULYR	6Vdc, 1.1A	EN 60730-1 UL 1434	TUV Rheinland,UL
Switching Power Supply (for only mother board Venti)	DELTA ELECTRONICS INC	DPS-650AB-30 XX (X can be 0-9, A-Z or blank.)	I/P: 100-240V~/10A, 50-60Hz; O/P: +12.1Vmain/18A, +12.1Vcpu1/18A, +12.1Vcpu2/18A, +12.1VG1/18A, +12.1VG2/18A, Maximum power shall not exceed 650W, Altitude during operation 5000m, maximum ambient temperature (Tma): 50 degree C.	IEC 60950-1: 2005 (Second Edition) + Am 1:2009 + Am 2:2013; EN 60950-1: 2006 +A11: 2009 + A1:2010 + A12: 2011 + A2: 2013 UL 62368-1	CB by TUV, (Cert. No. JPTUV-091004. Report No. 50180118 001) UL E131881
RTC battery (for mother board L04857- xxx (where x can be 0-9 for marketing purpose)	MITSUBISHI ELECTRIC HOME APPLIANCE CO LTD	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	Interchangeable	CR2032	Rated 3.0V, maximum abnormal charging current 10mA.	UL1642	UL

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Alternate	Interchangeable	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Motherboard (for only Switching Power Supply DPS-650AB-30 XX (X can be 0-9, A-Z or blank.))	Foxconn	Venti	SELV, Motherboard UL approval covers the PWB material,lithium battery, lithium battery protect circuit, connector plastics, and any other plastics, and foam materials used, fan(s) and the operator accessible connector over current protection devices. See additional information for this item below:	UL 60950-1, 2nd Ed. CAN/CSA C22.2 No. 60950-1-07, 2nd Ed. Additionally evaluated in the end product to IEC 60950-1 2nd Ed.	UL
-PWB	Interchangeable	Interchangea ble	V-1 or better, Minimum 105 □C	UL796	UL
-RTC Battery	SHUN WO NEW POWER BATTERY TECHNOLOG Y LTD	CR2032*, * - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	JHIH HONG TECHNOLOG Y CO LTD	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	MITSUBISHI ELECTRIC HOME APPLIANCE CO LTD	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	Interchangeable	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
- Poly Switch (F9 for DP port(J64), F8 for DP port(J63))	Interchangeable	Interchangea ble	Imax=40A Min. Vmax=6Vdc Min., Ih=1.10A Max. It=2.20A Max. CA1 (125 degree C Max.), CA 2, CA 3, CA 4, Tmoa=85 degree C Min.	EN 60730-1 UL 1434	TUV Rheinland, UL
- IC Current Limiter (U53 for USB Header (P26) to Front USB 3.0, U56 for Internal USB 2.0 (P150))	DIODES INC	AP2822DxyT R-G1, where x is N or blank and y is K, KA, KB or KE.	Volts: 2.7-5.5V, Cont. Current: 0.5-2.0A, Prot. Current: 1.4-3.2A, Temp Range: - 40 to 85 degree C	IEC 60950-1: 2005 + A1 +A2 UL2367	CB UL
- IC Current Limiter (U53 for USB Header (P26) to Front USB 3.0, U56 for Internal USB 2.0 (P150))	DIODES INC	AP2822DxyT R-G1, where x is N or blank and y is K, KA, KB or KE.	Volts: 2.7-5.5V, Cont. Current: 0.5-2.0A, Prot. Current: 1.4-3.2A, Temp Range: - 40 to 85 degree C	IEC 60950-1: 2005 + A1 +A2 UL2367	CB UL

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Alternate	TEXAS INSTRUMENT S INC	TPS2061C, followed by DBV, DGK or DGN may be followed by additional letters and numbers	Volts: 4.5 - 5.5 VDC, Cont. Current: 1.0A, Prot. Current: 1.9A, Temp Range: -40 to 85 degree C	IEC 60950-1: 2005 + A1 +A2 UL2367	CB UL
Alternate	UNISONIC TECHNOLOG IES CO LTD	US107XXX-AF5-R (First X=A, B, C, Second X=L or H, Third X=L or G)	Input voltage: 3.0 Vdc - 5.5 Vdc. Output current limit: 1.2 - 2.8 A	IEC62368-1 UL62368-1	CB UL
- IC Current Limiter (U51 for REAR USB3.0 x2 (J10 Bottom), U52 for LAN+ USB2.0(J9), U55 for REAR USB3.0 x2 (J10 Top), U58 for Internal USB 3.0(P152) to SD Card)	SILERGY TECHNOLOG Y	SY6288xyyyy y(x=A, B, C, D or E; yyyyy-0-9, A- Z or blank)	Volts: 2.5-5.5V, Output current limit: max. 4.43A	IEC 60950-1: 2005 + A1 +A2 UL2367	CB UL
Alternate	RICHTEK TECHNOLOG Y CORP	RT9742..G.The first dot "." can be A to Z represent output current/enabl e function. The second dot "." can be N or blank represent discharge function. The third dot "." can be J5F/J5/V represent package type.	Volts: 2.7-6.0V, Output current limit: 3A/ 2A/ 1.5A/ 1A	IEC 60950-1: 2005 + A1 +A2 UL2367	CB UL
Alternate	DIODES INC	AP22811AW 5-7, AP22811BW 5-7, AP22811AM 8-13,AP22811BM 8-13	Volts: 2.7-5.5V, Cont. Current: 2.0A, Prot. Current: 3.2A, Temp Temp Range: -40 to 85 degree C	IEC 60950-1: 2005 + A1 +A2 UL2367	CB UL
Thunderbolt 3.0 Tenor card (optional)	FOXCONN TECHNOLOG Y CO LTD	TPC-F005AO	SELV, Thunderbolt 3.0 Tenor card, UL approval covers the PWB material, connector plastics, and any other plastics, and foam materials used.	IEC 60950-1 UL60950-1	CB UL
CPU heatsink	--	--	Aluminium. See supplement 3-02 for details.	--	--
Alternate	--	--	Aluminium. See supplement 3-03 for details.	--	--
Alternate	--	--	Aluminium. See supplement 3-04 for details.	--	--
Alternate	--	--	Aluminium. See supplement 3-05 for details.	--	--

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Metal Enclosure	--	--	Min. 0.8 mm thickness	--	--

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Plastic Front Panel (decorate part)	Interchangeable	Interchangeable	Min. HB	UL94, UL 746C	UL
Dust Filter Mesh (optional)	Interchangeable	Interchangeable	HB or HBF min.	UL 94, UL 746C	UL
Internal Plastic Parts	Interchangeable	Interchangeable	Min. V-2 or HF-2	UL 94, UL 746C	UL
Switching Power Supply	Delta Electronics Inc	DPS-350AB-38 XX (X= 0-9, A-Z or blank)	AC Input: 100-240 V, 50-60 Hz, 4.0 A. DC Output: +12.1 VMAIN, 18 A, +12.1 VCPU, 18 A, +12.1 VCPU2, 18 A. MAX POWER 350 W. 50 °C. Altitude during operation 5000 m.	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, EN 60950-1:2006 + A11:2009+A1: 2010 +A12:2011 + A2:2013. IEC 62368-1:2014, EN 62368-1:2014 + A11:2017 UL60950-1 UL62368-1	CB by TUV Rh, UL (E131881)
Alternate	Acbel Polytech Inc	PCK002	AC Input: 100-240 V, 50-60 Hz, 4 A. DC Output: +12.1 VMAIN, 18 A, +12.1 VCPU1, 18 A, +12.1 VCPU2, 18 A. MAXIMUM POWER SHALL NOT EXCEED 350 W. 45 °C (50 °C for UL) Altitude during operation 5000 m.	IEC 60950-1: 2005 (Second Edition) + Am 1:2009 + Am2: 2013, EN 60950-1:2006+ A11:2009 + A1:2010 + A12:2011 + A2:2013. IEC 62368-1: 2014, EN 62368-1:2014 +A11:2017 UL62368-1	CB by TUV Rh, UL (E131875)
Alternate	Lite-On Technology Corporation	PA-5501-2YXXXXX (Y= A-Z, hyphen or blank; X= A-Z, 0-9, hyphen or blank)	AC Input: 100-240 V, 50-60 Hz, 6 A. DC Output: +12.1 VMAIN, 18 A, +12.1 VCPU1, 18 A, +12.1 VCPU2, 18 A, +12.1 VG1, 18 A, +12.1 VG2, 18 A; +12.1 VMAIN & +12.1 VCPU1 & +12.1 VCPU2 & +12.1 VG1 & +12.1 VG2 Total output power can't exceed 500 W. 50 °C. Altitude during operation 5000 m.	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, EN 60950-1:2006 + A11:2009 + A1: 2010 + A12:2011 + A2:2013. IEC 62368-1:2014, EN 62368-1:2014 + A11:2017 UL62368-1	CB by TUV Rh, UL (E132068)

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Alternate	Delta Electronics Inc	DPS-500AB-51 XX (X= 0-9, A-Z, blank)	AC Input: 100-240 V, 50-60 Hz, 6 A. DC Output: +12.1 VMAIN, 18 A, +12.1 VCPU1, 18 A, +12.1 VCPU2, 18 A (+12.1 VCPU1 and +12.1 VCPU2 TOTAL 320 W MAX.) +12.1 VG1, 18 A, +12.1 VG2, 18 A (+12.1 VG1 and +12.1 VG2 TOTAL 320 W MAX.) MAX POWER 500 W. 50 °C. Altitude during operation 5000 m.	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013, EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013. IEC 62368-1:2014, EN 62368-1:2014 + A11:2017 UL62368-1	CB by TUV Rh, UL (E131881)
Alternate	Chicony Power Technology Co Ltd	D19-700P1A	AC Input: 100-240 V, 50-60 Hz, 8.2 A. DC Output: +12.1 Vmain, 18 A, +12.1 Vcpu1, 18 A, +12.1 Vcpu2, 18 A, +12.1 Vg1, 18 A, +12.1 Vg2, 18 A. Total output shall not exceed 700 W. Maximum output power: 700 W. 50 °C. Altitude during operation 5000 m.	IEC 60950-1:2005 (Second Edition) + Am 1:2009+Am 2: 2013, EN 60950-1:2006+ A11:2009 + A1:2010 +A12: 2011 + A2:2013. IEC 62368-1:2014, EN 62368-1:2014 + A11:2017 UL62368-1	CB by TUV Rh, UL (E143709)
Hard Disk Drive (HDD) (optional)	Toshiba Electronic Devices & Storage Corporation	HDWL1yy (y= 11-99)	1.0 A, 3.3 Vdc, 1.0 A, 5.0 Vdc.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+ A11+A1+A12+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by CSA, TUV, UL (E145163)
Alternate	HGST Japan Ltd	H series	1.5 A max., 5.0 Vdc, 2.0 A max., 12 Vdc.	IEC 60950-1: 2005+ A1+A2,EN 60950-1: 2006+ A11+A1+A12+A2, UL 60950-1 ed.2	CB by TUV Rh, UL (E182115)
Alternate	Western Digital Technologies Inc	WDUUUUZVTX-YYXXXYY series, where WD is Western Digital. May or may not be present; where UUUU may be any number or blank indicating memory capacity; Z may be any alpha character indicating memory capacity multiplier	Class III supplied by SELV. Ratings are not required and are provided for reference only. 1.5 A max., 5.0 Vdc or 1.5 A max., 5.0 Vdc, 1.0 A max., 12 Vdc.	IEC 62368: 2014, IEC 60950-1:2005+A1+A2, EN 60950-1: 2006+A11+A1+ A12+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (US), UL (E101559)

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		and physical for factor; VTX may be any alphanumeric character indicating business unit, RPM/buffer and interface; YYXXXYY may be any alphanumeric character or blank indicating SELV logic/configuration, firmware, etc. Can be 3 to 7 alphanumeric characters.			
Alternate	or equivalent	or equivalent	Ratings are not required and provided for reference only: 1.0 A max., 3.3 Vdc, 1.0 A max., 5.0 Vdc or 1.5 A max., 5.0 Vdc, 2.0 A max., 12 Vdc or 1.5 A max., 5.0 Vdc.	IEC 62368-1: 2014, EN 62368-1: 2014+A11, IEC 60950-1: 2005+ A1+A2, EN 60950-1: 2006+A11+A1+ A12+A2,UL62368-1 ed.2, UL 60950-1 ed.2	Verify by other cert. body, UL
Solid State Drive (SSD) (optional)	Samsung Electronics Co Ltd	MZ-K********** (* can be 0-9, A- Z, blank, slash or dash)	4.8 A, 3.3 Vdc.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+ A11+A1+A12+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by TUV Rh, UL (E149091)
Alternate	Lite-On Technology Corporation	CA1-GDxxxxxxx (where "x" can be any alphanumeric or blank)	3.5 A, 3.3 Vdc (optional)	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+ A11+A1+A12+A2, UL 60950-1 ed.2	CB by TUV Rh, UL (E205203)
Alternate	Kingston Digital International Ltd Taiwan Branch	*******SA1000*** ********* (the "*" maybe alphanumeric, capacity,character, "-" or blank)	3.0 A, 3.3 Vdc (optional)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (DEMKO), UL (E333487)
Alternate	Lite-On Technology Corporation	K2-L1xxxxxxxx ("x" can be any alphanumeric character or blank)	2.5 A, 5.0 Vdc.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+ A11+A1+A12+A2, UL 60950-1 ed.2	CB by TUV Rh, UL (E205203)
Alternate	Western Digital Technologies Inc	GRxxxyy-x (where x and y are any alphanumeric character, or blank representing non-safety critical features such as memory size)	Class III supplied by SELV. Ratings are not required and provided for reference only: 1.8 A max., 5.0 Vdc, 1.8 A max., 12 Vdc.	IEC 60950-1:2005+A1+A2, EN 60950-1: 2006+ A11+A1+ A12+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (US), UL (E332258)

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Alternate	Intel Corp	SSD* (where * can be optional letters or numbers used to identify features such as memory type, size (thickness, width) and identify details not critical to the compliance of the drive)	3.3 Vdc, 5.0 Vdc and/ or 12 Vdc. (for reference only)	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+ A12+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (US), UL (E139761)
Alternate	or equivalent	or equivalent	Ratings are not required and provided for reference only: 4.8 A max., 3.3 Vdc or 2.5 A max, 5.0 Vdc or 1.8 A max., 5.0 Vdc, 1.8 A max., 12 Vdc or 3.3 Vdc, 5.0 Vdc and/ or 12 Vdc.	IEC 62368-1: 2014,EN 62368-1: 2014+A11, IEC 60950-1: 2005+ A1+A2, EN 60950-1:2006+ A11+A1+A12+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	Verify by other cert. body, UL
Optical Disk Drive (ODD) (optional)	Hitachi-LG Data Storage Inc	U9** (where first "* " can be any number 0-9 and second "*" can be any alphanumeric character, denoting board name or the change of shape not related with safety)	1.8 A, 5.0 Vdc. Laser Class 1.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+ A12+A2, IEC 60825-1:2007, UL 60950-1 ed.2	CB by Intertek, UL (E119002)
Alternate	Philips & Lite-On Digital Solutions Corporation	DG-xx3Sxxxxx (x can be any alphanumeric character or blank)	2.0 A, 5.0 Vdc, 1.25 A, 12 Vdc. (optional) Laser Class 1.	IEC 60950-1: 2005+ A1+A2, EN 60950-1:2006+ A11+A1+A12+A2, IEC 60825-1: 2007, UL 60950-1ed.2	CB by TUV Rh, UL (E306430)
Alternate	or equivalent	or equivalent	Ratings are not required and provided for reference only: 1.8 A max., 5.0 Vdc or 2.0 A max., 5.0 Vdc, 1.25 A max., 12 Vdc. Laser Class 1.	IEC 62368-1: 2014, EN 62368-1: 2014 +A11, IEC 60950-1: 2005 +A1+A2, EN 60950-1:2006 +A11+A1+A12+A2 , IEC 60825-1:2007, IEC 60825-1:2014, UL 62368-1 ed.2, UL 60950-1ed.2	Verify by other cert. body, UL
Speaker (optional)	Interchangeable	Interchangeable	4 ohm, 3 W max.	--	--
Heat sink for CPU	Interchangeable	Interchangeable	Aluminium.	--	--
CPU FAN(for Heat sink CPU type A)	HUIZHOU CITY XUNSHUO TECHNOLOGY CO LTD	DF0802512(X)UN, ((X) can beSE, B1, B2, RF, FD, PO)	DC 12V, Max. 0.60A, Min. 52.1CFM	EN62368-1 UL 507	TUV UL
Alternate	FOXCONN TECHNOLOGY CO LTD	PVA080G12Q	DC 12V, Max. 0.65A, Min. 60 CFM.	EN60950-1 UL 507	TUV UL

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Alternate	DELTA ELECTRONICS INC	AUB0812VJ-00XXXXXX (X= A-Z, 0-9, - or blank)	DC 12V, Max. 0.50A, Min. 53.05 CFM.	EN60950-1 UL 507	TUV UL
Alternate	Interchangeable	Interchangeable	DC 12V, Max. 0.65A, Min. 52.1CFM	EN60950-1 EN62368-1UL507	Verify by other cert. body, UL
CPU Fan (for Heat sink CPU type B, type C)	HUIZHOU CITY XUNSHUO TECHNOLOGY CO LTD	DF0922512(X)UN, ((X) can be SE, B1, B2, RF, FD, PO)	DC 12V, Max. 0.60A, Min. 65.8 CFM.	EN62368-1 UL 507	TUV UL
Alternate	FOXCONN TECHNOLOGY CO LTD	PVA092G12S	DC 12V, Max. 0.4A, Min. 60.0CFM.	EN60950-1 UL 507	TUV UL
Alternate	DELTA ELECTRONICS INC	AUB0912VH	DC 12V, Max. 0.60A, Min. 62.51 CFM.	EN60950-1 EN62368-1 UL 507	VDE UL
Alternate	Interchangeable	Interchangeable	DC 12V, Max. 0.60A, Min. 60.0CFM.	EN60950-1 EN62368-1 UL 507	Verify by other cert. body, UL
System fan (optional)	FOXCONN TECHNOLOGY CO LTD	PVA092G12H	DC 12V, Max. 0.4A, Min. 64.47CFM.	EN60950-1 UL 507	TUV UL
Alternate	DELTA ELECTRONICS INC	AUB0912VH	DC 12V, Max. 0.60A, Min. 62.51 CFM.	EN60950-1 EN62368-1 UL 507	VDE UL
Alternate	DELTA ELECTRONICS INC	AFB0912VH-A	DC 12V, Max. 0.60A, Min. 63.27 CFM.	EN60950-1 UL 507	VDE UL
Alternate	FOXCONN TECHNOLOGY CO LTD	PVA092G12S	DC 12V, Max. 0.4A, Min. 59.6CFM.	EN60950-1 UL 507	TUV UL
Alternate	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO LTD	EF92251BX- Q0(Z) ((Z) stands for 30 characters, each character stands for one of the following signs: 0-9, A-Z, "-", "(", ")", ".", "/" or blank.)	DC 12V, Max. 3.3W, Min. 57.0 CFM.	EN60950-1 UL 507	TUV UL
Alternate	Interchangeable	Interchangeable	DC 12V, Max. 0.60A, Min. 57.0 CFM.	EN60950-1 UL 507	Verify by other cert. body, UL
Blower fan (optional)	FOXCONN TECHNOLOGY CO LTD	PVB090G12L	DC 12V, Max. 0.88A, Min. 21.6CFM.	EN60950-1 UL 507	VDE UL
Alternate	Interchangeable	Interchangeable	DC 12V, Max. 0.88A, Min. 21.6 CFM.	EN60950-1 UL 507	Verify by other cert. body, UL
Graphics Card (optional)	NVIDIA CORP	PG150(sku510) (RTX6000)	Max. 295W, Complied with SELV and LPS requirement.	IEC 60950-1 UL 60950-1	CB by UL UL
Alternate	Interchangeable	Interchangeable	Max. 295W, Complied with SELV and LPS requirement.	IEC 60950-1 UL 60950-1	Verify by other cert. body, UL

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LAN port Card (Optional)	FOXCONN TECHNOLOGY CO LTD	TPC-F011AO	All output connector complies with limited power source (LPS)	--	--
-PWB	Interchangeable	Interchangeable	V-1 or better, Minimum 105 □C	UL796	UL
General Accessory Card (Optional)	Interchangeable	Interchangeable	No laser, fans, liquid cooling, TV/cable tuners, batteries or TNV employed.	--	--
Motherboard	FOXCONN TECHNOLOGY CO LTD	FMB-2001	Motherboard UL approval covers the PWB material, lithium battery, lithium battery protect circuit, connector plastics, and any other plastics, and foam materials used, and the operator accessible connector over current protection	UL 62368-1	UL
Alternate	FOXCONN TECHNOLOGY CO LTD	FMB-2002	Motherboard UL approval covers the PWB material, lithium battery, lithium battery protect circuit, connector plastics, and any other plastics, and foam materials used, and the operator accessible connector over current protection	UL 62368-1	UL
-PWB	Interchangeable	Interchangeable	V-1 or better, Minimum 105 □C	UL796	UL
-RTC Battery	SHUN WO NEW POWER BATTERY TECHNOLOGY LTD	CR2032*, * - Cell model numbers may be followed by an optional slash (/) and single or Multiple alphanumeric characters which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	JHIH HONG TECHNOLOGY CO LTD	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	MITSUBISHI ELECTRIC HOME APPLIANCE CO LTD	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL
Alternate	Interchangeable	CR2032	Rated 3.0V, maximum abnormal charging current: 10mA.	UL1642	UL

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- Poly Switch (VF1 for display port (J63), VF100 for display port (J64))	Littelfuse Inc	0805L110ULXX YYYYY (X, Y stands for A to Z, 0 to 9 or blank)	1.1 A, 6 V min.	EN 60730-1 UL 1434	TUV Rheinland, UL
Alternate	Polytronics Technology Corp	SPR-P110	1.1 A, 6 V min.	EN 60730-1 UL 1434	TUV Rheinland, UL
Alternate	Interchangeable	Interchangeable	1.1 A, 6 V min.	EN 60730-1 UL 1434	TUV Rheinland, UL
IC Current Limiter (U52 for USB 2.0x2 (J9) and Serial port + PS2 Header (P77), U53 for front USB 3.0x2 (J81), U57 for front USB 3.0 (TOP J94), U55 for Rear US 3.0x2 (BOTJ10), U51 for Rear USB 3.0x2 (TOP J10))	DIODES INC	AP22811AW5-7	Input Voltage: 2.7-5.5Vdc Output Continuous Rating: 2.0 A Output Current Limit: 3.2 A CB: Operating Temperature: -40°C~ + 85°C	IEC 60950-1 UL2367	CB UL
Alternate	JOULWATT TECHNOLOGY CO LIMITED	JW7115S-2SOTA#TRPBF	Vin: 2.7-5.5Vdc, Vout: 2.7-5.5Vdc, Iout: 2.05-2.35A	IEC 62368-1 UL62368-1	CB UL
Alternate	WILL SEMICONDUCTOR	WS4612EDx-5/TR (x can be A, B, C or D, A for EN high enable & Discharge, B for EN low enable & Discharge, C for EN high enable & no Discharge, D for EN low enable & no Discharge.)	Input Voltage Range: 2.5Vdc to 5.5Vdc, Current Limit Rating: 2.1-2.7A	IEC 62368-1 IEC 60950-1 UL62368-1	CB UL
Alternate	SILERGY TECHNOLOGY (TAIWAN) INC	SY6288xyyyyy (x=A, B, C, D or E, yyyyy=0-9, A- Z or blank)	I/P= 2.5 to 5.5 Vdc. O/P= 5.5 Vdc max, 1.6 to 4.43 A max.	IEC 60950-1 UL2367	CB UL
IC Current Limiter (U63 for USB 3.0 (BOT J94)) (Alternate)	TEXAS INSTRUMENTS INCORPORATE D	TPS2546.Additional suffixes after the model number designate the type of integrated circuit package,integrated circuit lead types or other features that are considered not to affect the functionality of the device	Ratings: (Electrical ratings is optional) Input Voltage= 4.5 to 5.5 Vdc. Output Continuou Rating= 2.5 A. Outpu Current Limit = 3.1 A. Ambient = -40 to 85 °C.	IEC 60950-1 UL2367	CB UL
Graphics Card (optional)	Nvidia Corp	PG150 (sku510), Market name: RTX 6000,Quadro RTX 6000	N/A (SELV) 295 W max., Complied with ES1 and LPS requirement.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2,UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (US), UL (E204896)

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alt.	Nvidia Corp	PG212, Market name: Quadro P1000	Not required. (Supplied by SELV) 50 W max., Complied with ES1 and LPS requirement.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A 12+A2,UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (DEMKO), UL (E204896)
alt.	Interchangeable	Interchangeable	295 W max., certified by UL listed accessary	IEC 62368-1: 2018,EN 62368-1: 2020+A11: 2020, UL 62368-1 ed.3	Verify by other cert. body, UL
General Accessory Card (I/O card) (optional)	interchangeable	Interchangeable	Ratings are not required and provided for reference only: 3.3 or 5 or 12 Vdc. (50 W max.)	IEC 62368-1: 2018, EN 62368-1: 2020+A11: 2020, UL 62368-1 ed.3	Verify by other cert. body, UL
HP Front Type-C SuperSpeed USB 20Gbps port (optional)	Foxconn International Inc	TPC-F014AO	Electrical ratings not Required (the equipment intended for building-in, supplied by ES1:1.8 Vdc/ 3.3 Vdc/5.0 Vdc)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 62368-1 ed.2	CB by UL (DEMKO), UL
Motherboard	Foxconn International Inc	FMB-2011	12.1 Vdc.	UL 62368-1 ed.3	UL (E93839)
RTC Battery	Shun Wo New Power Battery Technology Ltd	CR2032* (* - Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc)	Max Abnormal Charging Current 10 mA.	UL1642 ed.5	UL (MH25881)
alt.	Jhih Hong Technology Co Ltd	CR2032	Max Abnormal Charging Current 10 mA.	UL1642 ed.5	UL (MH48406)
alt.	Mitsubishi Electric Home Appliance Co Ltd	CR2032	Max Abnormal Charging Current 10 mA.	UL1642 ed.5	UL (MH21249)
alt.	Interchangeable	CR2032 series	Max Abnormal Charging Current 10 mA.	UL1642 ed.5	UL
Polyswitch (VF1, VF100 for Display)	Littelfuse Inc	0805L110ULXX YYYYY (X, Y stands for A to Z, 0 to 9 or blank)	1.1 A, 6 V min.	IEC 60730-1: 2020,EN 60730-1: 2011, Clause 15, 17	TUV/RH, UL (E183209)

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				and Annex J, UL 1434 ed.1	
alt.	Polytronics Technology Corp	SPR-P110	1.1 A, 6 V min.	IEC 60730-1: 2020,EN 60730-1: 2011, Clause 15, 17 and Annex J, UL 1434 ed.1	TUV, UL (E201431)
alt.	Interchangeable	Interchangeable	1.1 A, 6 V min.	IEC 60730-1: 2020,EN 60730-1: 2011, Clause 15, 17 and Annex J, UL 1434 ed.1	Verify by other cert. body, UL
Power Distribution Switch (U51, U53, U55, U57 for USB 3.0 and U52 for USB 2.0)	Diodes Inc	AP22811AW5-7	Input Voltage: 2.7 to 5.5 Vdc. Output= 1. Output Continuous Rating= 2.0 A. Output Current Limit= 3.2 A. Operating Temperature= -40 to + 85 °C.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A 12+A2, UL 2367 ed.1	CB by UL (US), UL (E322375)
alt.	Joulwatt Technology Co Limited	JW7115S-2SOTA#TRPBF	Vin= 2.7 to 5.5 Vdc, Vout= 2.7 to 5.5 Vdc, Iout= 2.05 to 2.35 A.	IEC 62368-1: 2014,EN 62368-1: 2014+A11, UL 62368-1 ed.2	CB by UL (DEMKO), UL (E497605)
alt.	Will Semiconductor	WS4612EDx-5/TR (x can be A, B, C or D, A for EN high enable & Discharge, B for EN low enable & Discharge, C for EN high enable & no Discharge, D for EN low enable & no Discharge)	Ratings: (Optional) Input Voltage Range= 2.5 to 5.5 Vdc. Current Limit Rating= 2.1 to 2.7 A.	IEC 62368-1: 2014,EN 62368-1: 2014+A11, UL 62368-1 ed.2	CB by UL (DEMKO), UL (E486497)
alt.	Silergy Corp	SY6288xyyyyy (x= A, B, C, D or E, yyyyy= 0-9, A- Z or blank)	I/P= 2.5 to 5.5 Vdc. O/P= 5.5 Vdc max, 1.6 to 4.4 A max.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A 12+A2, UL 2367 ed.1	CB by TUV Rh, UL (E491480)
Power Distribution Switch (U63 for USB 3.0)	Texas Instruments Inc	TPS2546 (additional suffixes after the model number designate the type of integrated circuit package, integrated circuit lead types or other features that are considered not to affect the functionality of the device)	Ratings: (Electrical ratings is optional) Input Voltage=4.5 to 5.5 Vdc. Output Continuous Rating= 2.5 A. Output Current Limit= 3.1 A. Ambient = -40 to 85 °C.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A 12+A2, UL 2367 ed.1	CB by UL (US), UL (E169910)

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Metal Chassis	--	--	Sheet steel or steel, thickness 0.8 mm min.	--	--
Plastic Front Panel (Construction 1)	UR Materials Industry (Shenzhen) Co Ltd	210	HB min., 60 °C min., thickness 2.5 mm min.	UL 94 ed.6 UL 746C	UL (E323548)
Plastic Front Panel (Construction 2)	--	--	Consists of three parts, see below for details.	--	--
- Dust-proof decoration (Option)	INEOS STYROLUTION GROUP GMBH	GP-22	HB min., 60 °C min., thickness 2.0 mm min.	UL 94 ed.6 UL 746C	UL (E108538)
- Dust-proof front panel (Option)	UR Materials Industry (Shenzhen) Co Ltd	210	HB min., 60 °C min., thickness 2.5 mm min.	UL 94 ed.6 UL 746C	UL (E323548)
- Dust Filter Mesh (Option)	LG CHEM LTD	HI121	HB min., 90 °C min., thickness 1.7 mm min.	UL 94 ed.6 UL 746C	UL (E67171)
alt.	NAN YA PLASTICS CORP PLASTICS 3RD DIV	6300	HB min., 90 °C min., thickness 1.7 mm min.	UL 94 ed.6 UL 746C	UL (E130155)
alt.	Interchangeable	Interchangeable	HB or HBF min	UL 94 ed.6 UL 746C	UL
Front I/O Cover on Plastic Front Panel	Interchangeable	Interchangeable	Sheet steel or steel, thickness 0.2 mm min.	--	--
Internal wiring	Interchangeable	Interchangeable	PVC, TFE, PTFE, FEP, or neoprene insulated, or surface marked “VW-1 or FT-1”, rated minimum 300 V, 105° C, routed away from mechanically moving parts and does not pass over sharp edges. Wiring in LVISC may be rated min. 30 V, 80C.	UL 758, CSA C22.2 No. 210.2	UL, cUL or CSA
Insulating Tubing/Sleeving	Interchangeable	Interchangeable	PVC, TFE, PTFE, FEP, or neoprene insulated, or surface marked “VW-1 or FT-1”, rated minimum 300 V, 105° C	UL 224	UL
External Decorate Parts	Interchangeable	Interchangeable	HB or HBF min.	UL 94 ed.6	UL
Internal Plastic Parts	Interchangeable	Interchangeable	V-2 or VTM-2 or HF-2 min.	UL 94 ed.6	UL
PCB	Interchangeable	Interchangeable	V-1 min., 105 °C min.	UL 796 ed.11	UL
Switching Power Supply	Acbel Polytech Inc	PCK002-0	AC I/P:100-240V~, 50-60Hz, 4.2A. DC O/P: +12.1VMAIN/18.0A.	UL/cUL 62368-1 Ed.3 IEC 62368-1:	CB by TUV (JPTUV-127970)

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			+12.1VCPU/18.0A. +12.1VCPU2/18.0A. MAXIMUM POWER SHALL NOT EXCEED 350W MAXIMUM POWER SHALL NOT EXCEED 350W The manufacture specified the equipment to be operated up to 5000m Maximal ambient temperature as specified by the manufacturer: +50°C	2018 IEC 60950-1:2005+A1+A2	UL (E131875)
alt.	Delta Electronics, Inc	DPS-350AB-44 XX (X=A-Z, 0-9, or blank)	AC Input: 1-2). 100-240V~, 50-60Hz, 4.2A; DC Output: +12.1V MAIN, 18A; +12.1V CPU, 18A; +12.1V CPU2, 18A; +12.1VCPU and +12.1VCPU2 TOTAL 320.0W MAX.; TOTAL 350W MAX. The manufacture specified the equipment to be operated up to 5000m Maximal ambient temperature as specified by the manufacturer: +50°C	IEC 62368-1: 2014 IEC 60950-1:2005+A1+A2	CB by TUV (JPTUV-104850-M2)
alt.	Delta Electronics, Inc.	1.DPS-450AB-30 XX (X = 0-9, A-Z, Blank)	1.AC I/P: 100-240 V, 5.5 A, 50-60 Hz. Class I. DC O/P: 18.0 A +12.1V MAIN, 18.0 A,+12.1V CPU. 18.0 A, +12.1VCPU2.(+12.1VCPU and +12.1VCPU2 TOTAL 320.0W MAX.) MAX POWER 450W The manufacture specified the equipment to be operated up to 5000m Maximal ambient temperature as specified by the manufacturer: +50°C	IEC 62368-1: 2014 IEC 60950-1: 2005+A1+A2 UL 62368-1 ed.2	CB by TUV/Rh, UL (E131881)
		2.DPS-500AB-51 XX (X = 0-9, A-Z, Blank)			
			2.AC I/P:100-240 V, 6 A, 50-60 Hz. Class I. DC O/P: +12.1VMAIN, 18A;		

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			+12.1VCPU1, 18A; +12.1VCPU2, 18A; (+12.1VCPU1 and +12.1V CPU2 TOTAL 320.0W MAX.); +12.1V G1, 18A; +12.1VG2, 18A; (+12.1VG1 and +12.1VG2 TOTAL 320.0W MAX.) MAX POWER 500W The manufacture specified the equipment to be operated up to 5000m Maximal ambient temperature as specified by the manufacturer: +50°C		
alt.	Lite-On Technology Corporation	1.PA-3451-1YXXXXX (Y = A-Z, or "-" or blank ; X can be A-Z, 0-9, "-" or blank) 2.PA-5501-2YXXXXX (Y = A-Z, or "-" or blank ; X can be A-Z, 0-9, "-" or blank)	1.Input: 100-240 VAC, 5.5A, 50-60Hz Output: +12.1VMAIN / 18A, +12.1VCPU / 18A, +12.1VCPU2 / 18A; +12.1VMAIN & +12.1VCPU & +12.1VCPU2 Total power can't exceed 450W. The manufacture specified the equipment to be operated up to 5000m Maximal ambient temperature as specified by the manufacturer: +50°C 2.Input: 100-240 VAC, 6A, 50-60Hz Output: +12.1VMAIN / 18A, +12.1VCPU1 / 18A, +12.1VCPU2 / 18A, +12.1VG1 / 18A, +12.1VG2 / 18A; +12.1VMAIN & +12.1VCPU1 & +12.1VCPU2 &+12.1VG1 & +12.1VG2 Total output power can't exceed 500W The manufacture specified the equipment to be operated up to 5000m Maximal ambient temperature as specified by the manufacturer: +50°C	IEC 62368-1:2014, EN 62368-1:2014 +A11, IEC 62368-1:2018, IEC 60950-1:2005+A1+A2 UL 62368-1 ed.3 UL 62368-1 ed.2	CB by TUV (JPTUV-125629) UL (E132068)

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alt.	Chicony Power Technology Co., Ltd.	D19-700P1A	I/P: 100-240Vac, 8.2A, 50-60Hz O/P: DC 18A +12.1Vmain, 18A +12.1Vcpu1, 18A +12.1V cpu2, 18A +12.1Vg1, 18A +12.1Vg2 Total output shall not exceed 700W Maximum output power: 700W The manufacture specified the equipment to be operated up to 5000m Maximal ambient temperature as specified by the manufacturer: +50°C	UL/cUL 62368-1 EC 62368-1:2014 IEC 60950-1:2005+A1+A2	CB by TUV (JPTUV-104291-M1) UL (E132068)
Hard Disk Drive(HDD) (optional)	Western Digital Technologies Inc	WDUUUUZVTX -YYXXXYY series, where WD is Western Digital. May or may not be present; where UUUU may be any number or blank indicating memory capacity; Z may be any alpha character indicating memory capacity multiplier and physical for factor; VTX may be any alphanumeric character indicating business unit, RPM/buffer and interface; YYXXXYY may be any alphanumeric character or blank indicating SELV logic/ configurati on, firmware, etc. Can be 3 to 7 alphanumeric characters.	Class III supplied by SELV. Ratings are not required and are provided for reference only. 1.5 A max., 5.0 Vdc, 1.0 A max., 12 Vdc.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+ A12+A2, UL 60950-1 ed.2, UL 62368-1 ed.3	CB by UL (US) UL (E101559)
alt.	Toshiba Electronic Devices & Storage Corporation	HDWL1yy (y= 11-99)	1.0 A, 3.3 Vdc, 1.0 A, 5.0 Vdc.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006+ A11+A1+A12+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by TUV UL (E145163)
alt.	HGST Japan Ltd	DH series	1.5 A max., 5.0 Vdc, 2.0 A max., 12 Vdc.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1 +A12+A2, UL 60950-1 ed.2	CB by TUV/Rh UL (E182115)

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alt.	SK Hynix Inc	HFSabcD0FEH-defgh (The suffix 'a', 'b' and 'c' denoting memory capacity can be any letter (A to Z) or number (0 to 9), 'd', 'e', 'f','g' and 'h' denoting buyer can be any letter(A to Z) or number (0 to 9))	3.3 A, 3.3 Vdc.	IEC 62368-1: 2018, UL 60950-1 ed.2, UL 62368-1 ed.3	CB by TUV/SUD UL (E333981)
alt.	SK Hynix Inc	HFSabcd32TC H-7efgh ('a', 'b', 'c' and 'd' denoting memory capacity can be any letter (A to Z) or number (0 to 9), 'e', 'f', 'g' and 'h' denoting buyer can be any letter (A to Z) or number (0 to 9))	2.0 A, 5.0 Vdc.	IEC 62368-1: 2018, UL 60950-1 ed.2, UL 62368-1 ed.3	CB by TUV/SUD UL (E333981)
alt.	SK Hynix Inc	HFSabcGETFEI-defgh (The suffix 'a', 'b' and 'c' denoting memory capacity can be any letter (A to Z) or number (0 to 9), 'd', 'e', 'f', 'g' and 'h' denoting buyer can be any letter (A to Z) or number (0 to 9))	2.1 A, 12 Vdc.	IEC 62368-1: 2018, UL 60950-1 ed.2, UL 62368-1 ed.3	CB by TUV/SUD UL (E333981)
alt.	or equivalent	or equivalent	Ratings are not required and provided for reference only: 3.3 A max., 3.3 Vdc or 2.0 A max., 5.0 Vdc or 2.1 A max., 12 Vdc or 1.0 A max., 3.3 Vdc, 1.0 A max., 5.0 Vdc or 1.5 A max., 5.0 Vdc, 1.0 A max., 12 Vdc.	IEC 62368-1: 2018, IEC 62368-1:2014, EN 62368-1: 2014 +A11, IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1 +A12+A2, UL 60950-1 ed.2, UL 62368-1 ed.3	Verify by other cert. body, UL
Solid State Drive (SSD) (optional)	Samsung Electronics Co Ltd	MZ-K********** (* can be 0-9, A-Z, blank, slash or dash)	4.8 A, 3.3 Vdc.	IEC 62368-1: 2018, IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1 +A12+A2, UL 60950-1 ed.2, UL 62368-1 ed.3	CB by TUV/Rh UL (E149091)
alt.	Solid State Storage Technology Corp	K2-L1xxxxxxxx ("x" can be any alphanumeric character or blank)	2.5 A, 5.0 Vdc.	IEC 62368-1: 2014, EN 62368-1: 2014+A11, IEC 60950-1:2005+A1	CB by TUV/Rh UL (E205203)

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				+A2, EN 60950-1: 2006+A11+A1+ A12+A2, UL 60950-1 ed.2, UL 62368-1 ed.3	
alt.	Solid State Storage Technology Corp	ED1-2Wxxxxxxx (where "x" can be any alphanumeric character or blank)	2.0 A, 12 Vdc (optional)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, IEC 60950-1: 2005+ A1+A2, EN 60950-1: 2006+ A11+A1+A12+A2, UL 60950-1 ed.2, UL 62368-1 ed.3	CB by UL (Demko) UL (E205203)
alt.	Western Digital Corporation	GRxxxyy-x (x, y =0-9, A-Z, blank; not safety- relevant)	Class III supplied by SELV. Ratings are not required and provided for reference only: 1.8 A max., 5.0 Vdc, 3.0 A max., 3.3 Vdc, 1.8 A max., 12 Vdc.	IEC 62368-1: 2014, EN 62368-1: 2014+A11, IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006 +A11+A1+A12+A2 , UL 60950-1 ed.2, UL 62368-1 ed.3	CB by UL (US) UL (E332258)
alt.	Intel Corp	SSD* (where * can be optional letters or numbers used to identify features such as memory type, size (thickness, width) and identify details not critical to the compliance of the drive)	3.3 Vdc, 5.0 Vdc and/ or 12 Vdc. (for reference only)	UL 62368-1 ed.3,	CB by UL (US) UL (E139761)
alt.	or equivalent	or equivalent	Ratings are not required and provided for reference only: 4.8 A max., 3.3 Vdc or 2.5 A max, 5.0 Vdc or 2.0 A max., 12 Vdc or 1.8 A max., 5.0 Vdc, 1.8 A max., 12 Vdc or 3.3 Vdc, 5.0 Vdc and/ or 12 Vdc.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005 IEC 60950-1: 2005/ A1: 2009, IEC 60950-1: 2005/ A2: 2013, UL 62368-1 ed.3	Verify by other cert. body, UL
Optical Disk Drive (ODD) (optional)	LG ELECTRONICS INC	DU9** (Where first "*" can be any number 0-9 and second "*" can be any alphanumeric character, denoting non safety related differences)	1.6 A or 1.8A, 5.0 Vdc. Laser Class 1.	IEC 62368-1: 2018, IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1 +A12+A2, IEC 60825-1:2014, UL 60950-1 ed.2 UL 62368-1 ed.3	CB by Intertek UL (E119002)
alt.	Philips & Lite- On Digital Solutions	DG-xx3Sxxxxx (x can be any alphanumeric	2.0 A, 5.0 Vdc, 1.25 A, 12 Vdc. (optional)	IEC 62368-1: 2014, IEC 60950-1:	CB by TUV/Rh UL (E306430)

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	Corporation	character or blank)	Laser Class 1.	2005+A1+A2, EN 60950-1: 2006+A11+A1 +A12+A2, EN 60825-1:2007, UL 60950-1 ed.2 UL 62368-1 ed.3	
alt.	LG Electronics Inc	GHB** (where the "*" can be 0~9, A~Z, any alphanumeric character or blank according to design, brand, buyer, color, software or other configurations, denoting non safety related differences)	2.0 A, 5.0 Vdc, 2.5 A, 12 Vdc. Class III. Class 1 Laser Product.	IEC 62368-1: 2018, IEC 60950-1: 2005+A1+A2, IEC 60825-1: 2014, UL 62368-1 ed.3, UL 60950-1 ed.2	CB by Intertek UL (E119002)
alt.	or equivalent	or equivalent	Ratings are not required and provided for reference only: 2.0 A max., 5.0 Vdc, 1.25 A max., 12 Vdc. 2.5 A max.,12 Vdc. Laser Class 1.	IEC 62368-1: 2014, IEC 62368-1:2018, IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+A2, EN 60825-1: 2007, UL 60950-1 ed.2UL 62368-1 ed.3	Verify by other cert. body, UL
Speaker (optional)	--	--	4 ohm, 3 W max.	--	--
CPU Fan (for Type-A CPU Heat sink)	Foxconn Technology Co., Ltd	PVA092G12S	0.40 A max., 12 Vdc, 70.48 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV, UL (E231557)
alt.	Huizhou City Xunshuo Technology Co., Ltd	DF0922512(X)U N (above (X) may be SE,B1,B2,RF,F D,PO)	0.60 A max., 12Vdc, 80.04 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV, UL (E465463)
alt.	Interchangeable	Interchangeable	0.60 A max., 12Vdc, 70.48 CFM min. Rotating speed: 4500±10% RPM max., Fan radius: 46mm max., Mass of moving parts: 34.2g max.	EN 62368-1: 2014, UL 507 ed.10	Verify by other cert. body, UL
CPU Fan (for Type-C CPU Heat sink)	Foxconn Technology Co., Ltd	PVA080G12Q	0.65 A max., 12 Vdc, 60.0 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV UL (E231557)
alt.	Delta Electronics, Inc.	AUB0812VJ-00XXXXXX (X stands for A- Z,0-9,- or blank for marketing purpose only)	0.50 A max., 12Vdc,53.05 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV UL (E132003)
alt.	Huizhou City Xunshuo Technology Co., Ltd	DF0802512(X)U N (above (X) may be SE,B1,B2,RF,F	0.60 A max., 12Vdc, 52.7 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV UL (E365488)

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		D,PO)			
alt.	Interchangeable	Interchangeable	0.65 A max.,12 Vdc, 52.7 CFM min. Rotating speed: 4500±10% RPM max, Fan radius: 40mm max, Mass of moving parts: 31.4g max	EN 62368-1: 2014, UL 507 ed.10	Verify by other cert. body, UL
CPU Fan (for Type-B CPU Heat sink)	Foxconn Technology Co., Ltd	PVA092G12S	0.40 A max., 12 Vdc, 70.48 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV, UL (E231557)
alt.	Huizhou City Xunshuo Technology Co., Ltd	DF0922512(X)U N (above (X) may be SE,B1,B2,RF,F D,PO)	0.60 A max., 12Vdc, 80.04 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV, UL (E365488)
alt.	Interchangeable	Interchangeable	0.60 A max., 12Vdc, 70.48 CFM min. Rotating speed: 4500±10% RPM max., Fan radius: 46mm max., Mass of moving parts: 34.2g max.	EN 62368-1: 2014, UL 507 ed.10	Verify by other cert. body, UL
Front System Fan (2 unit)(optional when graphic card＜80W)	Foxconn Technology Co., Ltd	PVA060F12Q	0.20 A max., 12 Vdc, 22.0 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV, UL (E231557)
alt.	Sunonwealth Electric Machine Industry Co., Ltd	MF60201VX- 1QZ (Z) stands for 30 characters. Each character standards for one of the following signs):0-9,A- Z,(,),.,/,- or blank for marketing purpose only, no safety critical related.	0.252 A max., 12Vdc, 22.0 CFM min.	IEC/EN 61000-6-1:2019 IEC/EN 61000-6-3:2021 EN 62368-1: 2014, UL 507 ed.10	CB by TUV Rh (R 50275749), UL
alt.	Interchangeable	Interchangeable	0.252 A max., 12Vdc, 22.0 CFM min. Rotating speed: 5400±15% RPM max., Fan radius: 30mm max., Mass of moving parts: 16.9g max.	EN 62368-1: 2014, UL 507 ed.10	Verify by other cert. body, UL
Rear System fan	Sunonwealth Electric Machine Industry Co.,Ltd.	PF92251V3- 1Q07Z (Z) stands for 30 characters. Each character standards for one of the following signs):0-9,A-Z,(,),.,/,- or blank for marketing purpose only, no safety critical related.	0.56 A max., 12 Vdc, 72.0 CFM min.	EN 62368-1: 2014, UL 507 ed.10	TUV, UL (E77551)
alt.	Foxconn Technology Co., Ltd	PVA092G12H- P29	1.20A max., 12Vdc, 70.92 CFM min.	EN 62368-1: 2014,	CB by TUV Rh (R 50275749), UL

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				UL 507 ed.10	
alt.	Interchangeable	Interchangeable	1.20 A max., 12Vdc, 70.92 CFM min. 3900±10% RPM max., Fan radius: 41mm max., Mass of moving parts: 47.6g max.	EN 62368-1: 2014, UL 507 ed.10	Verify by other cert. body, UL
HP Z2 G9 Single Type-C SuperSpeed USB 20Gbps Front Port	Foxconn Technology Co., Ltd	FSW-F001AO	Not required. (Supplied by ES1)	UL 62368-1 ed.3	UL (E93839)
- IC Current Limiter (U7 for USB Type- C(J210))	Cypress Semiconductor Corp.	CYAC1126-40LQXI ACG1F	Input: 2.7-5.5Vdc; 4.85-5.5Vdc (VCONN) Output: 5Vdc, 3A, 15W (VBUS); 5Vdc, 200mA, 1W (VCONN) (Protective Current 4.2A, include drift)	IEC/EN 62368-1:2014 UL2367	CB by UL (US), UL(E331901)
Motherboard	Foxconn Technology Co., Ltd	FMB-2201	All output connector comply with limited power source(LPS)	UL 62368-1 ed.3	UL (E93839)
RTC Battery	Shun Wo New Power Battery Technology Ltd	CR2032* (* -Cell model numbers may be followed by an optional slash (/) and single or multiple alphanumeric characters (i.e. letters and/or numbers), which denote optional features such as various mounting tabs, connecting leads or plugs, packaging etc)	Max Abnormal Charging Current 10 mA.	UL1642 ed.6	UL (MH25881)
alt.	Jhih Hong Technology Co Ltd	CR2032	Max Abnormal Charging Current 10 mA.	UL1642 ed.6	UL (MH48406)
alt.	Double Best Co Ltd	CR2032 (j)(k) (j- These cells may have various insulating tube, ring, or tape k - These cells and batteries may come with an optional single or multiple alphanumeric suffix denoting various pin, tab, cap or wire termination types)	Max Abnormal Charging Current 10 mA.	UL1642 ed.6	UL (MH46388)
alt.	MITSUBISHI ELECTRIC HOME APPLIANCE CO LTD	CR2032	Maximum abnormal charging current 10mA, protected by diode (D4) and 1Kohm resistor (R321).	UL1642 ed.6	UL (MH21249)

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alt.	Interchangeable	CR2032 series	Max Abnormal Charging Current 10 mA.	UL1642 ed.5	UL
Power Distribution Switch (U63) for USB ports (J94 pin 10) use	TEXAS INSTRUMENTS INCORPORAT ED	TPS2546, maybe followed by Q, may be followed by RTE, may be followed by R or T, may be followed by Q1	Input Voltage： 4.5Vdc to 5.5Vdc; Cont. Current: 2.5A; Prot. Current: 3.1A.	IEC 62368-1: 2014 UL 2367 ed.2	CB by UL (US), UL (E169910)
alt.	DIODES INC	PI5USB2546ZH DEX	Input Voltage: 4.5 -5.5 Vdc Continuous Rating: 30 mA to 2.5 A Current Limit: 100 mA to 3.18 A Ambient: -40 to 85°C	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 62368-1 ed.3	CB by UL (Demko), UL (E340734)
Metal Chassis	Interchangeable	Interchangeable	Sheet steel or steel, thickness 0.91 mm min. See Enclosures- Diagrams 4-01 for details.	--	--
Power Supply Cord (optional)	Interchangeable	Interchangeable	Detachable. Types NISP-2, NISPE-2, NISPT-2, SP-2, SPE- 2, SPT-2, SP-3, SPE-3, SPT-3, SV, SVE, SVO, SVOO, SVT, SVTO, SVTOO, SJ, SJE or SJT. 240 Vac 1.5 m min. long, rated VW-1, one end with grounding type NEMA 5-15P or NEMA 6- 15P, the other end with an appliance coupler. No. 14 AWG min.	UL 817 ed.2	UL
Interconnecting Cable (optional)	Interchangeable	Interchangeable	Detachable, 3.05 m long max., 30 V min., 70 °C min., suitable for external use, jacketed, VW-1 or FT-1.	UL 758, ed.3 or UL 444, ed.5 or UL 1863 ed.4	UL
Certification Marks, Rating Label and Grounding/ Warning Label Materials	CCL Design (Suzhou) Co Ltd (Worldmark)	3311T-E2a	Used in combination with Printer/ Ribbon DPW3000-140-450. Affixed to the metal surface.	UL 969 ed.5	UL (MH20595)
alt.	Interchangeable	Interchangeable	70 °C min.	UL 969 ed.5	UL
Front Handle Cover	UR Materials Industry (Shenzhen) Co Ltd	210	HB min., 60 °C min., thickness 1.6 mm min.	UL 94 ed.6	UL (E323548)
Plastic Bezel (front)	UR Materials Industry (Shenzhen) Co Ltd	210	HB min., 60 °C min., thickness 1.6 mm min.	UL 94 ed.6	UL (E323548)
alt.	Sabic Innovative Plastics US L L C	C6200(GG)	HB min., 60 °C min., thickness 1.6 mm min.	UL 94 ed.6	UL (E121562)
alt.	Interchangeable	Interchangeable	HB min.,60 °C min., thickness 1.6 mm min.	UL 94 ed.6	UL
Blank Panel (optional, when	Sabic Innovative Plastics US L L C	925(GG)	V-2 min., 120 °C min., thickness 0.8 mm min.	UL 94 ed.6	UL (E121562)

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Removable Storage Modules, ODD not provided)					
Base Foot	Interchangeable	Interchangeable	HB min.	UL 94 ed.6	UL
Rubber Feet (on Base Foot) (optional)	Interchangeable	Interchangeable	HB or HBF min.	UL 94 ed.6	UL
PCB	Interchangeable	Interchangeable	V-1 min., 105 °C min.	UL 796 ed.11	UL
Interlock Switch	Dongguan City Rising Sun Electronics Co Ltd	MSS	5.0 A, 125 V. 3.0 A, 250 V.	EN 61058-1: 2002+A2, EN 61058-1-1: 2016, EN IEC 61058-1: 2018, UL 61058-1 ed.5	TUV, UL (E477493)
Switching Power Supply (PSU)	Lite-On Technology Corporation	PS-2771-3XXXXXX (X= 0-9, A-Z, hyphen or blank)	AC I/P: 100-240 V, 10.0 A, 50-60 Hz. DC O/P: +12 V/ 64.6 A, +12 Vsb/ 4.32 A. Total power can't exceed 775 W. Class I, 45.0 °C. Altitude during operation 5000 m.	IEC 62368-1: 2018, EN IEC 62368-1: 2020+A11, IEC 62368-1: 2014, EN 62368-1: 2014+A11, IEC 60950-1:2005+A1 +A2, UL 62368-1 ed.3	CB by TUV/Rh, UL (E132068)
alt.	Lite-On Technology Corporation	PS-2521-3XXXXXX (X= 0-9, A-Z, hyphen or blank)	AC I/P: 100-240 V, 10.0 A, 50-60 Hz. DC O/P: +12 V/ 43.75 A, +12 Vsb/ 4.13 A. Total power can't exceed 525 W. Class I, 45.0 °C. Altitude during operation 5000 m.	IEC 62368-1: 2018, EN IEC 62368-1: 2020+A11, IEC 62368-1: 2014, EN 62368-1: 2014+A11, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3	CB by TUV/Rh, UL (E132068)
alt.	Delta Electronics Inc	DPS-775AB-1 XX (X= 0-9, A-Z or blank)	AC I/P: 100-240 V, 10.0 A, 50-60 Hz. DC O/P: +12.1 V/ 64.6 A, +12 VSB/ 4.32 A Class I, 45.0 °C. Altitude during operation 5000 m.	IEC 62368-1: 2018, EN IEC 62368-1: 2020+ A11, IEC 62368-1: 2014, EN 62368-1: 2014+A11, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3	CB by UL (Demko), UL (E131881)
alt.	Delta Electronics Inc	DPS-1125AB-5 XX (X= 0-9, A-Z or blank)	AC I/P: 100 V, 12.0 A, 50-60 Hz. DC O/P: V12,1⎓: +12 Vdc/ 93.75 A, 12VSB⎓: +12 Vdc/ 5.75A, max. total output 1125 W or AC I/P: 115-127 V, 12.0 A, 50-60 Hz. DC O/P: V12,1⎓: +12 Vdc/ 106.25 A, 12VSB⎓:	IEC 62368-1: 2018, EN IEC 62368-1: 2020+A11, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3	CB by TUV/Rh, UL (E131881)

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			+12 Vdc/ 5.75 A, max. total output 1275 W or AC I/P: 200-240 V, 10.0 A, 50-60 Hz. DC O/P: V12,1⎓: +12 Vdc/ 120.9 A, 12VSB⎓: +12 Vdc/ 5.75 A, max. total output 1450 W. Class I, 50.0 °C. Altitude during operation 5000 m.		
Front SYS Fan (optional)	Foxconn Technology Co Ltd	PVA092G12H- P29	1.2 A max., 12 Vdc, 70.2 CFM min.	EN IEC 62368-1: 2020+A11, EN 62368-1: 2014+ A11, UL 507ed.10	TUV, UL (E231557)
alt.	HeYuan Yongjia Industry Co Ltd	AS9025V12	0.6 A max., 12 Vdc, 64.92 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E333267)
alt.	Interchangeable	Interchangeable	1.2 A max., 12 Vdc, 64.92 CFM min.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 507 ed.10	Verified by other certificate body, UL
Rear SYS Fan	Foxconn Technology Co Ltd	PVA120G12U	0.75 A max., 12 Vdc, 115.2 CFM min.	EN IEC 62368-1: 2020+A11, EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	HeYuan Yongjia Industry Co Ltd	AB12025S12	0.65 A max., 12 Vdc, 115.5 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E333267)
alt.	Interchangeable	Interchangeable	0.75 A max., 12 Vdc, 115.2 CFM min.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-12005+A1 + A2, UL 507 ed.10	Verified by other certificate body, UL
Dual Memory Fan (front and rear) (optional)	Foxconn Technology Co Ltd	PVA060G12S-***-** (*=0-9 or A-Z, a-z)	2.0 A max., 12.0 Vdc, 56.1 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	HeYuan Yongjia Industry Co Ltd	FAB6025N12	1.5 A max., 12 Vdc, 52.9 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E333267)
alt.	Interchangeable	Interchangeable	2.0 A max., 12.0 Vdc, 52.9 CFM min.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 507 ed.10	Verified by other certificate body, UL
Side Panel Fan (front and rear) (optional)	Foxconn Technology Co Ltd	PVA080F12T-***-** (*=0-9 or A-Z, a-z)	0.9 A max., 12 Vdc, 63.1 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	HeYuan Yongjia Industry Co Ltd	AB8020S12	1.2 A max., 12 Vdc, 60.2 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E333267)

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alt.	Interchangeable	Interchangeable	1.2 A max., 12 Vdc, 60.2 CFM min.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+ A1+A2, UL 507 ed.10	Verified by other certificate body, UL
CPU Fan (inside the CPU HS)	Foxconn Technology Co Ltd	PVA120G12V	1.2 A max., 12 V dc, 115.2 CFM min.	EN IEC 62368-1: 2020+A11, EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	HeYuan YongJia Industry Co Ltd	FABB025N12	1.2 A max., 12 V dc, 113.6 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E333267)
alt.	Huizhou City XunShuo Technology Co Ltd	DF1082512B2F g (g - series no. g can be a-z or blank for different markets)	1.0 A max., 12 V dc, 121.77 CFM.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E465463)
alt.	Interchangeable	Interchangeable	1.2 A max., 12 Vdc, 113.6 CFM min.	IEC 62368-1: 2018, IEC 62368-1:2014, IEC 60950-1: 2005+ A1+A2, UL 507 ed.10	Verified by other certificate body, UL
Heatsink (HS) for CPU	Interchangeable	Interchangeable	Aluminium.	--	--
Removable Storage Modules (optional)	CRU Data Security Group LLC	DX175	5.0/ 12 Vdc, 3.0/ 6.0 A (optional)	UL 62368-1 ed.2	UL (E237918)
- HDD Box Fan	Yen Sun Technology Corp	FD124015MB- N-CBH	0.12 A max., 12 Vdc, 6.6 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E187205)
Hard Disk Drive (HDD) (optional)	SK Hynix Inc	HFS3T8GD0FE I-Aabcd (a, b, c and d denoting buyer can be any letter (A to Z) or number (0 to 9))	3.3 A, 3.3 Vdc. Class III.	IEC 62368-1: 2018, UL 62368-1 ed.3	CB by TUV/SUD, UL (E333981)
alt.	SK Hynix Inc	HFS3T8G32FE H-BA10A	2.0 A, 5.0 Vdc. Class III.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3, UL 60950-1 ed.2	CB by TUV/SUD, UL (E333981)
alt.	SK Hynix Inc	HFS15T3DGLX 070N	2.1 A, 12 Vdc. Class III.	IEC 62368-1: 2018, UL 62368-1 ed.3	CB by TUV/SUD, UL (E333981)
alt.	Toshiba Electronic Devices & Storage Corporation	HDWL1yy (where "xx" may be any number 00-10, "yy" may be any number 11-99)	0.5 A, 3.3 Vdc, 0.7 A, 5.0 Vdc. (optional)	IEC 62368-1: 2014, UL 62368-1 ed.2	CB by UL (JP), UL (E145163)
alt.	HGST Japan Ltd	Hww7210nnKL A3nn	1.5 A max., 5.0 Vdc, 2.0 A max., 12 Vdc. Class III.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 60950-1	CB by TUV/Rh, UL (E182115)

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				ed.2	
alt.	Interchangeable	Interchangeable	Ratings are not required and provided for reference only: 3.3 A max., 3.3 Vdc or 2.0 A max., 5.0 Vdc or 2.1 A max., 12 Vdc or 0.5 A max., 3.3 Vdc, 0.7 A max., 5.0 Vdc or 1.5 A max., 5.0 Vdc, 2.0 A max., 12 Vdc.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3, UL 62368-1 ed.2, UL 60950-1 ed.2	Verified by other certificate body, UL
Solid State Drive (SSD) (optional, alternate when HDD not provided)	Samsung Electronics Co Ltd	MZ-K********** (* can be 0-9, A-Z, blank, slash or dash)	4.8 A, 3.3 Vdc.	IEC 62368-1: 2018, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3, UL 60950-1 ed.2	CB by TUV/Rh, UL (E149091)
alt.	Solid State Storage Technology Corp (Lite-On)	K2-L1xxxxxxxx ("x" can be any alphanumeric character or blank)	2.5 A, 5.0 Vdc. Class III.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed. 2, UL 60950-1 ed.2	CB by TUV/Rh, UL (E205203)
alt.	Solid State Storage Technology Corp	ED1-2Wxxxxxxxx (where x can be any alphanumeric character or blank)	2.0 A, 12 Vdc (optional) Class III.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.2	CB by TUV/Rh, UL (E205203)
alt.	Western Digital Technologies Inc	GRxxxyy-x (where x and y are any alphanumeric character, or blank representing non-safety critical features such as memory size)	Class III supplied by SELV. Ratings are not required and provided for reference only: 1.8 A max., 5.0 Vdc, 1.8 A max., 12 Vdc.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (US), UL (E332258)
alt.	Intel Corp	SSD* (where * can be optional letters or numbers used to identify features such as memory type, size (thickness, width) and identify details not critical to the compliance of the drive)	3.3 Vdc, 5.0 Vdc and/ or 12 Vdc. (for reference only)	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (US), UL (E139761)
alt.	Interchangeable	Interchangeable	Ratings are not required and provided for reference only: 4.8 A max., 3.3 Vdc or 2.5 A max., 5.0 Vdc or 2.0 A max., 12 Vdc or 1.8 A max., 5.0 Vdc, 1.8 A max., 12 Vdc or	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3, UL 62368-1 ed.2, UL 60950-1	Verified by other certificate body, UL

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			3.3 Vdc, 5.0 Vdc and/ or 12 Vdc.	ed.2	
Optical Disk Drive (ODD) (optional)	Hitachi-LG Data Storage Inc	DU9** (where first "*" can be any number 0-9 and second "*" can be any alphanumeric character, denoting non safety related differences)	1.8 A, 5.0 Vdc. Class III. Class 1 Laser Product.	IEC 62368-1: 2018, IEC 60950-1: 2005+A1+A2, IEC 60825-1: 2014, UL 60950-1 ed.2	CB by Intertek, UL (E119002)
alt.	Philips & Lite- On Digital Solutions Corporation	DG-xx3Sxxxxx (x can be any alphanumeric character or blank)	2.0 A, 5.0 Vdc, 1.25 A, 12 Vdc. (optional) Class III. Class 1 Laser Product.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, IEC 60825-1: 2007, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by TUV/Rh, UL (E306430)
alt.	LG Electronics Inc	GHB** (where the "*" can be 0~9, A~Z, any alphanumeric character or blank according to design, brand, buyer, color, software or other configurations, denoting non safety related differences)	2.0 A, 5.0 Vdc, 2.5 A, 12 Vdc. Class III. Class 1 Laser Product.	IEC 62368-1: 2018, IEC 60950-1: 2005+A1+A2, IEC 60825-1: 2014, UL 62368-1 ed.3, UL 60950-1 ed.2	CB by Intertek, UL (E119002)
alt.	Interchangeable	Interchangeable	Ratings are not required and provided for reference only: 1.8 A max., 5.0 Vdc or 2.0 A max., 5.0 Vdc, 2.5 A max.,12 Vdc. Class III. Class 1 Laser Product.	IEC 62368-1: 2018, IEC 62368-1:2014, IEC 60950-1: 2005+A1+A2, IEC 60825-1: 2014, IEC 60825-1:2007, UL 62368-1 ed.3, UL 62368-1 ed.2, UL 60950-1 ed.2	Verified by other certificate body, UL
Graphics Card (GPU) (optional)	Foxconn International Inc	TPC-F004G	350 W max. Interface ports (I/O ports) complied with ES1 (SELV), LPS requirement. (UL Listed Accessory)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 62368-1 ed.2	CB by UL (Demko), UL (E93839)
alt.	NVIDIA Corp	PG192	75 W max. Interface ports (I/O ports) complied with ES1 (SELV), LPS requirement. (UL Listed Accessory)	IEC 62368-1: 2018 EN IEC 62368-1: 2020+A11, UL 62368-1 ed.3	CB by UL (Demko), UL (E204896)
alt.	Interchangeable	Interchangeable	350 W max. Interface ports (I/O ports) complied with ES1 (SELV), LPS requirement. (UL Listed Accessory)	UL 62368-1 ed.3, UL 62368-1 ed.2, UL 60950-1 ed.2	UL
alt.	Component User	864763-001,	0.9 A, 5.0 Vdc. (optional)	IEC 62368-1:	CB by UL

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HP USB 3.0 SD4 Card RDR (optional)	Industry Co Ltd	L11328-001		2014, EN 62368-1: 2014+A11, UL 62368-1 ed.2	(Demko), UL (E500712)
Low-Voltage Solid-State Overcurrent (U850 for USB 3.0 (charge))	Diodes Incorporated	AP21xyz (The 'x' in model name may be any numeral, 4-9; 'y' may be 1, 2 5 or 6; 'z' may be any single or multiple alpha-numeric characters)	Single channel/ Dual channel: 0.5 to 1.5 A, 2.7 to 5.5 Vdc. (Supplied by external ES1 power source)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 2367 ed.2	CB by Nemko, UL (E322375)
alt.	Texas Instruments Incorporated	TPS2068x, May be followed by other characters that do not impact the safety feature of the device.	Input voltage: 4.5 to 5.5 Vdc. Output continuous rating: 1.5 A. Output current limit: 2.7 A. Maximum operational temperature: 85 °C. (optional)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 2367 ed.2	CB by UL (US), UL (E169910)
Motherboard	Foxconn International Inc	FMB-2203	Electrical ratings not required (the equipment intended for building-in, supplied by ES1)	UL 62368-1 ed.3	UL (E93839)
RTC Battery	Shenzhen Pkcell Battery Co Ltd (JHT)	CR2032	Max Abnormal Charging Current= 10.0 mA.	IEC 60086-4: 2019, UL1642 ed.6	CB by TUV/Rh, UL (MH48406)
alt.	Interchangeable	CR2032, CR-2032, CR 2032 series	Max Abnormal Charging Current= 10.0 mA.	UL1642 ed.6	UL
Thermistor (F4, F5 for USB 3.2)	Polytronics Technology Corp	SMD0805P350 SLR series	3.5 A, 6.0 Vdc min.	IEC 60730-1: 2013+A1, EN 60730-1: 2016, Clause 15, 17 and Annex J, UL 1434 ed.1	TUV, UL (E201431)
alt.	Littelfuse inc	0805L350SL series	3.5 A, 6.0 Vdc min.	IEC 60730-1: 2013+A1, EN 60730-1: 2016, Clause 15, 17 and Annex J, UL 1434 ed.1	TUV, UL (E183209)
alt.	Thinking Electronic Industrial Co Ltd	KLM2S300	3.0 A, 6.0 Vdc min.	EN 60730-1: 2011, Clause 15, 17, J15 and J17, UL 1434 ed.1	TUV, UL (E138827)
alt.	CYG Wayon Circuit Protection Co Ltd	LP-ISML350abcd (a=C, U, blank, b=S, Z, blank, c=H, blank, d=F, blank)	3.5 A, 6.0 Vdc min.	IEC 60730-1: 2013, Clauses 15, 17, J15 and J17, UL 1434 ed.1	TUV, UL (E202125)
alt.	Interchangeable	Interchangeable	3.5 A max., 6.0 Vdc min. It (Itrip) = 7.0 A.	IEC 60730-1:2013 +A11, Clause 15, 17 and Annex J, UL 1434 ed.1	Verify by other cert. body, UL
Metal Chassis	Interchangeable	Interchangeable	Sheet steel or steel, thickness 0.91 mm min.	--	--

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			See Enclosures- Diagrams 4-01 for details.		
Metal Handle (x2)	Interchangeable	Interchangeable	Metal.	--	--
Power Supply Cord (optional)	Interchangeable	Interchangeable	Detachable. Types NISP-2, NISPE-2, NISPT-2, SP-2, SPE-2, SPT-2, SP-3, SPE-3, SPT-3, SV, SVE, SVO, SVOO, SVT, SVTO, SVTOO, SJ, SJE or SJT. 240 Vac min., 1.5 m min. and 2.4 m max. long, rated VW-1, one end with grounding type NEMA 5-15P or NEMA 6-15P, the other end with an appliance coupler. No. 14 AWG min.	UL 817 ed.2	UL
Interconnecting Cable (optional)	Interchangeable	Interchangeable	Detachable, 3.05 m long max., 30 V min., 80 °C min., suitable for external use, jacketed, VW-1 or FT-1.	UL 758, ed.3 or UL 444, ed.5 or UL 1863 ed.4	UL
Certification Marks, Rating Label and Grounding/ Warning Label Materials	CCL Design (Suzhou) Co Ltd (Worldmark)	3311T-E2a	Used in combination with Printer/ Ribbon DPW3000-140-450. Affixed to the metal surface.	UL 969 ed.5	UL (MH20595)
alt.	Interchangeable	Interchangeable	70 °C min.	UL 969 ed.5	UL
Plastic Bezel/ Plastic Panel, (front, top)	UR Materials Industry (Shenzhen) Co Ltd	210	HB min., 60 °C min., thickness 1.6 mm min.	UL 94 ed.6	UL (E323548)
alt.	Ineos Styrolution Group Gmbh	GP-22	HB min., 80 °C min., thickness 1.6 mm min.	UL 94 ed.6	UL (E108538)
alt. Plastic Bezel/ Plastic Panel, (front)	Interchangeable	Interchangeable	HB min., 60 °C min., thickness 1.6 mm min.	UL 94 ed.6	UL
Blank Panel (optional, when Removable Storage Modules, ODD not provided)	Sabic Innovative Plastics US L L C	925(GG)	V-2 min., 120 °C min., thickness 0.8 mm min.	UL 94 ed.6	UL (E121562)
PCB	Interchangeable	Interchangeable	V-1 min., 105 °C min.	UL 796 ed.11	UL
CPU Fan Duct Frame,	UR Materials Industry (Shenzhen)	Fliger 300	Plastic part (V-2 min., 60 °C min., thickness	UL 94 ed.6	UL (E323548)

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PCI Retainer Frame (internal)	Co Ltd		0.8 mm min.) with Metal part (thickness 0.6 mm)		
alt. PCI Retainer Frame (internal)	Interchangeable	Interchangeable	Plastic part (V-2 min., 60 °C min., thickness 0.8 mm min.) with Metal part (thickness 0.6 mm)	UL 94 ed.6	UL
PCI Card Guide (for Front SYS Fan - lower and middle), Front Fan Duct (for Front SYS Fan - upper), Rear Fan Duct (for Rear SYS Fan)	UR Materials Industry (Shenzhen) Co Ltd	Fliger 300	V-2 min., 60 °C min., thickness 0.8 mm min.	UL 94 ed.6	UL (E323548)
alt.	Sabic Innovative Plastics US L L C	925(GG)	V-2 min., 120 °C min., thickness 0.8 mm min.	UL 94 ed.6	UL (E121562)
Switching Power Supply (PSU)	Delta Electronics Inc	DPS-1125AB-4 XX (X=0-9, A-Z or blank)	AC I/P: 100 V, 12 A, 115-127 V, 12 A, 200-240 V, 10 A, 50-60 Hz, Class I. DC O/P: V12.1-CPU0, 18 A, V12.1-M0, 18 A, V12.1-G1, 18 A, V12.1-B, 18 A, V12.1-CPU1, 18 A, V12.1-M1, 18 A, V12.1-G2, 18 A, V12.1-S, 18 A, V12.1-CPU2, 18 A, V12.1-M2, 18 A, V12.1-G3, 18 A, V12.1-D, 18 A, V12.1-CPU3, 18 A, V12.1-M3, 18 A, V12.1-G4, 18 A, 5VSB, 15 A.100 V, 12 A, 50-60 Hz, Max. total outputs: 1125 W. 115-127 V, 12 A, 50-60 Hz, Max. total outputs: 1275 W. 200-240 V, 10 A, 50-60 Hz, Max. total outputs: 1450 W. 55 °C. Altitude during operation 5000 m.	IEC 62368-1: 2014, EN 62368-1: 2017+A11, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3	CB by UL (Demko), UL (E131881)
alt.	Delta Electronics Inc	DPS-1450AB-2 XX (X= 0-9, A-Z or blank)	AC I/P: 100 V, 16 A or 115-127 V, 16 A or 200-240 V, 10 A, 50-60 Hz, Class I. DC O/P V12.1CPU0: +12 Vdc/ 18 A, V12,1-M0: +12 Vdc/ 18 A, V12,1-G1: +12 Vdc/ 18 A, V12,1-B: +12 Vdc/ 18	IEC 62368-1: 2018, EN IEC 62368-1: 2020+A11, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3	CB by TUV/Rh, UL (E131881)

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			A, V12,1-CPU1: +12 Vdc/ 18 A,V12,1-M1: +12 Vdc/ 18 A, V12,1-G2: +12 Vdc/ 18 A, V12,1-S: +12 Vdc/ 18 A, V12,1-CPU2: +12 Vdc/ 18 A, V12,1-M2: +12 Vdc/ 18 A, V12,1-G3: +12 Vdc/ 18 A, V12,1-D: +12 Vdc/ 18 A, V12,1-CPU3: +12 Vdc/ 18 A, V12,1-M3: +12Vdc/ 18 A, V12,1-G4: +12 Vdc/ 18 A, 5VSB: +5 Vdc/ 15 A. 100 V, 16 A, 50-60Hz, Max. total outputs: 1450 W. 115-127 V, 16 A, 50-60 Hz, Max. total outputs: 1550 W. 200-240 V,/10 A, 50-60 Hz, Max. total outputs: 1700 W. 55 °C. Altitude during operation 5000m.		
Rear SYS Fan	Foxconn Technology Co Ltd	PVA120K12P	1.30 A max., 12 Vdc, 135.18 CFM min.	EN 62368-1: 2014 + A11, UL 507 ed.10	TUV, UL (E231557)
alt.	Sunonwealth Electric Machine Industry Co Ltd	PFC0381B1- 1QZ (Z standards for 30 characters, each character stands for one of the following signs: 0-9, A-Z, (,), ., /, - or blank, for marketing purpose only, no safety critical related)	0.932 A max., 12 Vdc, 137.0 CFM min.	EN IEC 62368-1: 2020+A11, UL 507 ed.10	TUV, UL (E77551)
alt.	Interchangeable	Interchangeable	1.30 A max., 12 Vdc, 135.18 CFM min.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+ A1+A2, UL 507 ed.10	Verified by other certificate body, UL
Front SYS Fan (lower)	Foxconn Technology Co Ltd	PVA120G12S	0.30 A max., 12 Vdc, 81.90 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	Sunonwealth Electric Machine Industry Co Ltd	MFC0251V1- 1Q0Z (Z standards for 30characters, each character stands for one of the following signs: 0-9, A-Z, (,), ., /, - or blank, for marketing purpose only, no safety critical related)	0.25 A max., 12 Vdc, 83.0 CFM min.	EN IEC 62368-1: 2020+A11, UL 507 ed.10	TUV, UL (E77551)

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alt.	Foxconn Technology Co Ltd	PVA120G12T	0.50 A max., 12 Vdc, 102.24 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	Heyuan Yongjia Industry Co Ltd	AS12025S12	0.65 A max., 12 Vdc, 109.92 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E333267)
alt.	Interchangeable	Interchangeable	0.65 A max., 12 Vdc, 81.90 CFM min.	IEC 62368-1: 2018IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 507 ed.10	Verified by other certificate body, UL
Front SYS Fan (middle)	Foxconn Technology Co Ltd	PVA080G12R	0.80 A max., 12.0 Vdc, 75.1 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	Sunonwealth Electric Machine Industry Co Ltd	PF80251BX- 1QZ (Z standards for 30 characters, each character stands for one of the following signs: 0-9, A-Z, (,), ., /, - or blank, for marketing purpose only, no safety critical related)	0.552 A max., 12 Vdc, 64.8 CFM min.	EN IEC 62368-1: 2020+A11, UL 507 ed.10	TUV, UL (E77551)
alt.	Interchangeable	Interchangeable	0.80 A max., 12.0 Vdc, 64.8 CFM min.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 507 ed.10	Verified by other certificate body, UL
Front SYS Fan (upper)	Foxconn Technology Co Ltd	PVA092G12H- P29	1.20 A max., 12 Vdc, 87.93 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	Sunonwealth Electric Machine Industry Co Ltd	PF92251BX- 1QZ (Z standards for 30 characters, each character stands for one of the following signs: 0-9, A-Z, (,), ., /, - or blank, for marketing purpose only, no safety critical related)	0.828 A max., 12.0 Vdc, 85.4 CFM min.	EN IEC 62368-1: 2020+A11, UL 507 ed.10	TUV, UL (E77551)
alt.	Interchangeable	Interchangeable	1.20 A max., 12 Vdc, 85.4 CFM min.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+ A1+A2, UL 507 ed.10	Verified by other certificate body, UL
CPU Fan (inside the CPU HS)	Foxconn Technology Co Ltd	PVA092G12H- P29	1.20 A max., 12 Vdc, 84.42 CFM min.	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E231557)
alt.	Foxconn	PVA120G12V	1.20 A max., 12 Vdc,	EN 62368-1:	TUV, UL

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	Technology Co Ltd		115.2 CFM min.	2014+A11, UL 507 ed.10	(E231557)
alt.	Huizhou City XunShuo Technology Co Ltd	DF1082512B2F g (g - series no. g can be a-z or blank for different markets)	1.0 A max., 12 Vdc, 121.77 CFM.	EN IEC 62368-1: 2018+A11, UL 507 ed.10	TUV, UL (E465463)
alt.	Interchangeable	Interchangeable	1.20 A max., 12 Vdc, 84.42 CFM min.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 507 ed.10	Verified by other certificate body, UL
Heatsink (HS) for CPU	Interchangeable	Interchangeable	Aluminium.	--	--
Removable Storage Modules (optional)	CRU Data Security Group LLC	DX175	5/12 Vdc, 3/6 A (optional)	UL 62368-1 ed.2	UL (E237918)
- HDD Box Fan	Yen Sun Technology Corp	FD124015MB- N-CBH	0.12 A max., 12 Vdc, 6.6 CFM	EN 62368-1: 2014+A11, UL 507 ed.10	TUV, UL (E187205)
Hard Disk Drive (HDD) (optional)	SK Hynix Inc	HFS3T8GD0FE I-Aabcd (a, b, c and d denoting buyer can be any letter (A to Z) or number (0 to 9))	3.3 A, 3.3 Vdc. Class III.	IEC 62368-1: 2018, UL 62368-1 ed.3	CB by TUV/SUD, UL (E333981)
alt.	SK Hynix Inc	HFS3T8G32FE H-BA10A	2.0 A, 5.0 Vdc. Class III.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3, UL 60950-1 ed.2	CB by TUV/SUD, UL (E333981)
alt.	SK Hynix Inc	HFS15T3DGLX 070N	2.1 A, 12 Vdc. Class III.	IEC 62368-1: 2018, UL 62368-1 ed.3	CB by TUV/SUD, UL (E333981)
alt.	Toshiba Electronic Devices & Storage Corporation	HDWL1yy (where "xx" may be any number 00-10, "yy" may be any number 11-99)	0.5 A, 3.3 Vdc, 0.7 A, 5.0 Vdc. (optional)	IEC 62368-1: 2014, UL 62368-1 ed.2	CB by UL (JP), UL (E145163)
alt.	HGST Japan Ltd	Hww7210nnKL A3nn	1.5 A max., 5.0 Vdc, 2.0 A max., 12 Vdc. Class III.	IEC 62368-1: 2014,IEC 60950-1: 2005+A1+A2, UL 60950-1 ed.2	CB by TUV/Rh, UL (E182115)
alt.	Interchangeable	Interchangeable	Ratings are not required and provided for reference only: 3.3 A max., 3.3 Vdc or 2.0 A max., 5.0 Vdc or 2.1 A max., 12 Vdc or 0.5 A max., 3.3 Vdc, 0.7 A max., 5.0 Vdc or 1.5 A max., 5.0 Vdc,	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3, UL 62368-1 ed.2, UL 60950-1	Verified by other certificate body, UL

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			2.0 A max., 12 Vdc.	ed.2	
Solid State Drive (SSD) (optional, alternate when HDD not provided)	Samsung Electronics Co Ltd	MZ-K********** (* can be 0-9, A-Z, blank, slash or dash)	4.8 A, 3.3 Vdc.	IEC 62368-1: 2018, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3, UL 60950-1 ed.2	CB by TUV/Rh, UL (E149091)
alt.	Solid State Storage Technology Corp (Lite-On)	K2-L1xxxxxxxx ("x" can be any alphanumeric character or blank)	2.5 A, 5.0 Vdc. Class III.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed. 2, UL 60950-1ed.2	CB by TUV/Rh, UL (E205203)
alt.	Solid State Storage Technology Corp	ED1-2Wxxxxxxxx (where x can be any alphanumeric character or blank)	2.0 A, 12 Vdc (optional) Class III.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.2	CB by TUV/Rh, UL (E205203)
alt.	Western Digital Technologies Inc	GRxxxyy-x (where x and y are any alphanumeric character, or blank representing non-safety critical features such as memory size)	Class III supplied by SELV. Ratings are not required and provided for reference only: 1.8 A max., 5.0 Vdc, 1.8 A max., 12 Vdc.	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (US), UL (E332258)
alt.	Intel Corp	SSD* (where * can be optional letters or numbers used to identify features such as memory type, size (thickness, width) and identify details not critical to the compliance of the drive)	3.3 Vdc, 5.0 Vdc and/ or 12 Vdc. (for reference only)	IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.2, UL 60950-1 ed.2	CB by UL (US), UL (E139761)
alt.	Interchangeable	Interchangeable	Ratings are not required and provided for reference only: 4.8 A max., 3.3 Vdc or 2.5 A max., 5.0 Vdc or 2.0 A max., 12 Vdc or 1.8 A max., 5.0 Vdc, 1.8 A max., 12 Vdc or 3.3 Vdc, 5.0 Vdc and/ or 12 Vdc.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, UL 62368-1 ed.3, UL 62368-1 ed.2, UL 60950-1 ed.2	Verified by other certificate body, UL
Optical Disk Drive (ODD) (optional)	Hitachi-LG Data Storage Inc	DU9** (Where first "*" can be any number 0-9 and second "*" can be any alphanumeric character, denoting non safety related differences)	1.8 A, 5.0 Vdc. Class III. Class 1 Laser Product.	IEC 62368-1: 2018, IEC 60950-1: 2005+A1+A2, IEC 60825-1: 2014, UL 60950-1 ed.2	CB by Intertek, UL (E119002)
alt.	Philips & Lite- On Digital Solutions	DG-xx3Sxxxxx (x can be any	2.0 A, 5.0 Vdc, 1.25 A, 12 Vdc. (optional)	IEC 62368-1: 2014, IEC 60950-1:	CB by TUV/Rh, UL (E306430)

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	Corporation	alphanumeric character or blank)	Class III. Class 1 Laser Product.	2005+A1+A2, IEC 60825-1: 2007, UL 62368-1 ed.2, UL 60950-1 ed.2	
alt.	LG Electronics Inc	GHB** (where the "*" can be 0~9, A~Z, any alphanumeric character or blank according to design, brand, buyer, color, software or other configurations, denoting non safety related differences)	2.0 A, 5.0 Vdc, 2.5 A, 12 Vdc. Class III. Class 1 Laser Product.	IEC 62368-1: 2018 IEC 60950-1: 2005+A1+A2, IEC 60825-1: 2014, UL 62368-1 ed.3, UL 60950-1 ed.2	CB by Intertek, UL (E119002)
alt.	Interchangeable	Interchangeable	Ratings are not required and provided for reference only: 1.8 A max., 5.0 Vdc or 2.0 A max., 5.0 Vdc, 2.5 A max.,12 Vdc. Class III. Class 1 Laser Product.	IEC 62368-1: 2018, IEC 62368-1: 2014, IEC 60950-1: 2005+A1+A2, IEC 60825-1:2014, IEC 60825-1: 2007, UL 62368-1 ed.3, UL 62368-1 ed.2, UL 60950-1 ed.2	Verified by other certificate body, UL
Graphics Card (GPU) (optional)	Foxconn International Inc	TPC-F004G	350 W max. Interface ports (I/O ports) complied with ES1 (SELV), LPS requirement. (UL Listed Accessory)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 62368-1 ed.2	CB by UL (Demko), UL (E93839)
alt.	Interchangeable	Interchangeable	350 W max. Interface ports (I/O ports) complied with ES1 (SELV), LPS requirement. (UL Listed Accessory)	UL 62368-1 ed.3, UL 62368-1 ed.2, UL 60950-1 ed.2	UL
alt. HP USB 3.0 SD4 Card RDR (optional)	Component User Industry Co Ltd	864763-001, L11328-001	0.9 A, 5.0 Vdc. (optional)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 62368-1 ed.2	CB by UL (Demko), UL (E500712)
alt. G4 Personality M.2 (optional)	Foxconn International Inc	FMB-2210	Electrical ratings not required (the equipment intended for building-in, supplied by ES1)	IEC 62368-1: 2018, EN IEC 62368-1: 2020+ A11, UL 62368-1 ed.3	CB by UL (Demko), UL (E93839)
alt. Dual 10GbE (optional)	Foxconn International Inc	FMB-2207	Electrical ratings not required (the equipment intended for building-in, supplied by ES1)	IEC 62368-1: 2018, EN IEC 62368-1:2020 +A11, UL 62368-1 ed.3	CB by UL (Demko), UL (E93839)

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alt. Front IO Module (FIO-E2) (optional)	Foxconn International Inc	FMB-2214	Electrical ratings not required (the equipment intended for building-in, supplied by ES1)	IEC 62368-1: 2018, EN IEC 62368-1: 2020+A11, UL 62368-1 ed.3	CB by UL (Demko), UL (E93839)
alt. TBT4 (Accessory Card) (optional)	Foxconn International Inc	FMB-2209	Electrical ratings not required (the equipment intended for building-in, supplied by ES1)	IEC 62368-1: 2018, EN IEC 62368-1: 2020+A11, UL 62368-1 ed.3	CB by UL (Demko), UL (E93839)
Motherboard	Foxconn International Inc	FMB-2205	Electrical ratings not required (the equipment intended for building-in, supplied by ES1)	UL 62368-1 ed.3	UL (E93839)
RTC Battery	Shenzhen Pkcell Battery Co Ltd (JHT)	CR2032	Max Abnormal Charging Current= 10.0 mA.	IEC 60086-4: 2019, UL1642 ed.6	CB by TUV/Rh, UL (MH48406)
alt.	Interchangeable	CR2032, CR-2032, CR 2032 series	Max Abnormal Charging Current= 10.0 mA.	UL1642 ed.6	UL
Thermistor (F2 for internal connector P24, P25) (F4, F5, F6 for USB 3.0)	Polytronics Technology Corp	SPR-P260T series	2.6 A, 6.0 Vdc min.	IEC 60730-1: 2013+A1, EN 60730-1:2016, Clause15, 17 and Annex J, UL 1434 ed.1	TUV, UL (E201431)
alt.	Littelfuse Inc	0805L260UL series	2.6 A, 6.0 Vdc min.	IEC 60730-1: 2013+A1, EN 60730-1:2016, Clause 15, 17 and Annex J, UL 1434 ed.1	TUV, UL (E183209)
alt.	Interchangeable	Interchangeable	2.6 A, 6.0 Vdc min.	IEC 60730-1: 2013+A11,Clause 15, 17 and Annex J, UL 1434 ed.1	Verify by other cert. body, UL
Low-Voltage Solid-State Overcurrent (U22 for internal connector P152)	Texas Instruments Incorporated	TPS2061x Where 'x' is C or D. May be followed by other characters that do not impact the safety feature of the device.	Ratings: (optional) Input Voltage: 4.5 to 5.5 Vdc. Output Continuous Rating: 1.0 A. Output Current Limit: 1.9 A. Maximum Operational Temperature: 85 °C.	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 2367 ed.2	CB by UL (US), UL (E169910)
alt.	Will Semiconductor	WS4612EBx- 5/TR (x can be A, B, C or D, A for EN high enable & Discharge, B for EN low enable & Discharge, C for EN high enable & no Discharge, D for EN low enable & no	Ratings: (optional) Input Voltage Range: 2.5 to 5.5 Vdc. Current Limit Rating: 1.2 to 1.6 A.	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 62368-1 ed.2	CB by UL (Demko), UL (E486497)

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		Discharge)			
alt.	Joulwatt Technology Co Limited	JW7115SA-1SOTA#TRPBF	Vin: 2.7 to 5.5 Vdc, Vout: 2.7 to 5.5 Vdc, Iout: 1.1-1.5 A. (optional)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 62368-1 ed.2	CB by UL (Demko), UL (E497605)
alt.	Anpec Electronics Corp	APL3553 followed by A, B, C or D, followed by B, C, X or CT, followed by I, followed by -TR, followed by G	Input Voltage: 2.7 to 5.5 Vdc. Maximum Output Continuous Rating: 1.0 A. Current Limit Rating: 1.9 A. Ambient: -40 to 85 °C.	IEC 62368-1: 2018, EN IEC 62368-1: 2020+A11, UL 2367 ed.2	CB by UL (Demko), UL (E328191)
alt.	Diodes Incorporated	AP21xyz The 'x' in model name may be any numeral, 4-9. 'y' may be 1, 2, 5 or 6. 'z' may be any single or multiple alpha-numeric characters	Single channel / Dual channel: 0.5 to 1.5 A, 2.7 to 5.5 Vdc. (Supplied by external ES1 power source)	IEC 62368-1: 2014, EN 62368-1: 2014+A11, UL 2367 ed.2	CB by Nemko, UL (E322375)

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Monitor Série P

27P2Q

27”



Especificações gerais

Tela	27" Widescreen IPS
Resolução	1920 x 1080 FHD
Brilho	300 cd/m²
Contraste dinâmico	50.000.000:1
Contraste estático	1.000:1
Ângulo de visão	H: 178° | V: 178°
Taxa de atualização	75 Hz
Tempo de resposta	4 ms
Tecnologia de sincronização	Adaptive-Sync
Conexão	1x VGA | 1x DVI | 1x HDMI 1.4 (HDCP 1.4) | 1x DisplayPort 1.2 (HDCP 1.4) | 4x USB 3.2 (1x Fast Charging) | 1x USB-B (Upstream) | 1x Saída de Áudio | 1x Entrada de Áudio
Base ajustável	Altura: 150 ± 5mm | Giro: 175° ± 5° | Inclinação: -5°/35° | Pivô: -90°~90° (bidirecional)
Alto-falantes	Sim - 2 x 2W
VESA	Sim - 100 x 100 mm

Especificações da tela

Tamanho do painel	27"
Tamanho da imagem visível (diagonal)	68,47 cm
Tipo de painel	IPS
Proporção de tela	16:9
Formato de tela	Widescreen
Curvatura	Não
Iluminação do painel	W-LED
Resolução máxima	VGA/DVI: 1920 x 1080 @ 60 Hz HDMI 1.4/DP 1.2: 1920 x 1080 @ 75 Hz
Pixel Pitch	0,3114 (H) x 0,3114 mm (V)
Densidade de pixel	81,59 PPI
Tipo de tela	Antirreflexivo
Bit	6 bits + FRC
Brilho	300 cd/m²
sRGB	120,9%
Relação de contraste dinâmico	50.000.000:1
Relação de contraste estático	1.000:1
Frequência nativa do painel	75 Hz
Tempo de resposta	4 ms
Ângulo de visão	H: 178° | V: 178°
Frequência de varredura	VGA/DVI/HDMI 1.4/DP 1.2: 30-85 kHz (H) VGA/DVI/HDMI 1.4/DP 1.2: 48-75 Hz (V)
Suporte de cores	Maior que 16 milhões

Ergonomia

VESA	Sim - 100 x 100 mm
Base ajustável	Altura: 150 ± 5mm Giro: 175° ± 5° | Inclinação: -5°/35° Pivô: -90°~90° (bidirecional)

Conexões e recursos

Conectores	1x VGA | 1x DVI | 1x HDMI 1.4 (HDCP 1.4) | 1x DisplayPort 1.2 (HDCP 1.4) | 4x USB 3.2 (1x Fast Charging) | 1x USB-B (Upstream) | 1x Saída de Áudio | 1x Entrada de Áudio
Alto-falantes	Sim - 2 x 2W
HDR	HDR Mode (Simulação)
Tecnologias	Adaptive-Sync, Low Blue Mode e Flicker-free
Compatibilidade	Windows, MAC, Linux
Plug & Play	DDC/CI, Windows 10 & Windows 8/8.1, MAC OS
Controles manuais	Source+Auto; Volume+Image Ratio/ Right; Clear Vision+Clear Vision Demo/ Left; Menu; Power
Função OSD (On Screen Display)	Sim - Português e outros idiomas
Destaque	Base ajustável até 15 cm de altura | Painel IPS | HDMI e DisplayPort | HUB USB | Certificações B2B

Dimensões, peso e embalagem

Dimensões monitor com base (L x A x P)	613,6 x 394,5 ~ 544,5 x 200,1 mm
Dimensões monitor sem base (L x A x P)	613,6 x 369,5 x 51,1 mm
Dimensões embalagem (L x A x P)	690 x 595 x 160 mm
Peso sem embalagem (com base)	5,49 kg
Peso sem embalagem (sem base)	3,8 kg
Peso com embalagem	7,6 kg
Itens inclusos na embalagem	Cabo de força brasileiro NBR 14136, cabo VGA, cabo DP, cabo USB, certificado de garantia, base e monitor

Energia

Fonte	Interna - 100~240V - 50/60 Hz; 1,5 A
Consumo	Ligado: 60 Watts (máximo), Ligado: 20 Watts (típico), Stand-by < 0,5 Watt, Off < 0,3 Watt

Outros

Cor predominante do produto	Preto
Cor predominante da base	Preto
Sugestão de descrição	Monitor AOC 27" IPS Base Ajustável DP Hub USB 27P2Q
Garantia	3 anos
Código EAN	7898620271992
Classificação fiscal (NCM)	8528.52.00
CEST	21.068.00
PPB	Portaria Interministerial SEPEC/ME/ SEXEC/MCTI nº 58, de 09.10.2020
Local de fabricação	Brasil

Certificações

Normas e certificações	EPA, EPEAT, TCO, GS, ISO 9241-307, EU RoHS DOC, Embalagem com material reciclável, CB, CE, FCC, California CEC, cCSAus, Win 8/8_1, Win 10, EAC (CU), Ukraine Safety, Antirroubo Kensington, HDCP 1.4 para HDMI e DisplayPort

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1110

DECLARATION FROM MANUFACTURER

To whom it may concern,

We declare that the product with below model no. produced by our company comply with:

European RoHS DIRECTIVE 2011/65/EU & （EU）2015/863 (on the restriction of the use of certain hazardous substances in electrical and electronic equipment) and its related exemption.

Model No: 27P2Q

Signature: Alice.Jin

Name: Alice.Jin

Title: Environmental Engineer

Company: TPV Electronics (Fujian) Co., Ltd.

Date: 2023/11/10

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1111

Due to planned maintenance, the EPEAT registry is expected to be offline between 5pm ET- 5:30pm ET on 12/16/24 and 12/17/24

RETURN TO SEARCH

AOC 27P2Q

COMPUTERS & DISPLAYS

Product Summary:

Product Type:	Monitors
Registered In:	Brazil
Manufacturer:	AOC International (Europe) B.V.
EPEAT Tier:	Silver
Registration Date:	2023-08-18
Product Status:	Active
EPEAT Climate+:	Achieved 2023-10-27
Exceptions:	Disassembly instructions, exploded diagram, spare parts to avoid injury to end users.

European Article Number(s): 4038986187329

All unique product identifiers existing for this product may not be listed here. If the unique product identifier you are looking for is not listed, please contact EPEAT at EPEAT@GEC.org.

EXPORT PRODUCT SUMMARY

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable "required" criteria. Click here to see a list of the required criteria for this product category.

This product has met the necessary required criteria.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

Products that meet all required criteria and achieve **less than 50%** of the optional points are rated at **EPEAT Bronze**	Products that meet all required criteria and achieve **50 - 74%** of the optional points are rated at **EPEAT Silver**	Products that meet all required criteria and achieve **75 - 100%** of the optional points are rated at **EPEAT Gold**

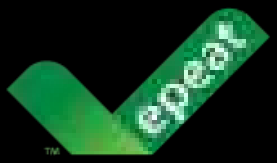
The optional criteria for this product category and optional points achieved by this product are listed below.

	Optional Criteria	Scores
+	4.1 Substance Management	12 / 16
+	4.2 Materials Selection	3 / 3
+	4.4 Product longevity/life-cycle extension	2 / 2
+	4.5 Energy Conservation	0 / 2
+	4.7 Packaging	0 / 2
+	4.8 Life cycle assessment and carbon footprint	5 / 6
+	4.9 Corporate Environmental Performance	4 / 9
+	4.10 Corporate social responsibility	6 / 6
	TOTAL OPTIONAL CRITERIA SCORE:	**32 / 46**

Please note that it is not required for a product to achieve any optional points.

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A) to the product are not included in the Total Optional Criteria Score, and are not reflected above.

For any questions, comments, or feedback regarding the EPEAT Registry, please contact us.



Contact Us

+1.503.279.9383

PO Box 12149 Portland, OR 97212-0149 USA

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Due to planned maintenance, the EPEAT registry is expected to be offline between 5pm ET- 5:30pm ET on 12/16/24 and 12/17/24

Certificado de Conformidade

Certificate of Conformity

Certificado/*Certificate*
UL-BR 24.0764

Revisão / Review
00

Emissão / *Issue*
6 de junho de 2024
June 6, 2024

Validade / *Expiration*
5 de junho de 2027
June 5, 2027

Reconhecer que o Solicitante / *Acknowledge that the Certificate Holder*

ENVISION INDÚSTRIA DE PRODUTOS ELETRONICOS LTDA

avaliou o produto / *has had*

MONITOR LCD / *LCD MONITOR*

ao qual atende aos requisitos do Programa de Certificação ou Portaria / *evaluated and meets the requirements of the Certification Program or Decree*

REQUISITOS DE AVALIAÇÃO DA CONFORMIDADE ANEXOS À PORTARIA INMETRO Nº 304 DE 06 DE NOVEMBRO DE 2023 /CONFORMITY ASSESSMENT REQUIREMENTS ATTACHED TO INMETRO ORDINANCE Nº 304 AS OF NOV 06, 2023

e pode ostentar o Selo de Identificação da Conformidade do Sistema Brasileiro de Avaliação da Conformidade (SBAC) sobre o(s) produto(s) relacionado(s) neste certificado.
and can display the Conformity Identification Seal of the Brazilian Conformity Assessment System (SBAC) on the product(s) listed in this certificate.

Rafael Parada
Program Owner

UL do Brasil Certificações, organismo acreditado pela Coordenação Geral de Acreditação do INMETRO – CGCRE, segundo o registro Nº OCP-0029. /
UL do Brasil Certificações, Certification Body accredited by Coordenação Geral de Acreditação do INMETRO - CGCRE according to the register Nr OCP-0029.

Certificado de conformidade válido somente acompanhado das páginas de 1 a 155
Certificate of Conformity valid only if accompanied from pages 1 to 155

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão /** *Review*: **00**	**Validade /** ***Expiration***
6 de junho de 2024 *June 6, 2024*		5 de junho de 2027 *June 5, 2027*

Solicitante / *Certificate Holder* (1635977)
ENVISION INDúSTRIA DE PRODUTOS ELETRONICOS LTDA
Rodovia Anhanguera, km 26,5 – Armazém II, 4, 5 e 6 – Jardim Jaraguá 05275-000, SÃO PAULO, SP, Brazil
C.N.P.J.: 04.176.689/0003-22

Fabricante / *Manufacturer* (227862)
ENVISION INDúSTRIA DE PRODUTOS ELETRONICOS LTDA
Av Torquato Tapajos 2236, Flores, Manaus/AM, 69058-830, Brazil
CNPJ: 04.176.689./0001-60

Modelo de Certificação / *Certification Model*
5

Norma(s) Aplicável(is) / *Applicable standards*
see appendix for details

Identificação UL / *UL Identification*
BR2467 / Vol.3 / Sec. 27, 28, 29, 30, 31, 32, 36, 22, 23, 24, 25, 38, 40, 41, 46, 48, 54, 56, 58, 60, 61, 62, 63, 64, 65

Lote ou No. de Série / *Lot or Serial Number*
N/A

Identificação da Família/Modelo/Lote de Produto(s) Certificado(s):
Identification of the Family/Model/Lot of Certified Product(s):

Marca / *Brand Name*	**Modelo /** *Model*	**Descrição /** *Description*	**Código de Barras /** *Bar Code Number*
AOC	236LM00014, *2470***** (refer to Appendix A)	(* = A to Z, a to z, 0 to 9, "+", "-", "/", "\" or blank. Represent different enclosure color and sales regions for marketing purpose only, no technical difference)	N/A
AOC	G2460PF, 240LM00010, G2460VQ6, 240LM00016 (refer to Appendix B)	N/A	N/A
AOC	215LM00041, *2270****** (refer to Appendix C)	(* can be 0-9, A-Z, a-z,-, \, /, + or blank for marketing purpose)	N/A
AOC	185LM000** (refer to Appendix D)	(* can be 0-9, A-Z, a-z, -, \, /, + or blank for marketing purpose.)	N/A
AOC	22B1, 22B1H, 22******** (refer to Appendix E)	(* can be 0-9, A-Z, a-z, –, \, /, + or blank, represent different enclosure colour for marketing purpose)	N/A
AOC	24B1, 24B1H, 24******** (refer to Appendix F)	(* can be 0-9, A-Z, a-z, –, \, /, + or blank, represent different enclosure colour for marketing purpose)	N/A
AOC	G2260VWQ6, 215LM00033 (refer to Appendix G)	N/A	N/A
AOC	315LM00019, AG322FCX (refer to Appendix H)	N/A	N/A
AOC	22P1, **22P1******** (refer to Appendix I)	(* can be 0-9, A-Z, a-z, -, \, /, + or blank, represents different enclosure color for marketing purpose)	N/A
AOC	24P1, **24P1******** (refer to Appendix J)	(* can be 0-9, A-Z, a-z, -, \, /, + or blank, represents different enclosure color for marketing purpose)	N/A
AOC	9P1, **9P1******** (refer to Appendix K)	(* can be 0-9, A-Z, a-z, -, \, /, + or blank, represents different enclosure color for marketing purpose)	N/A
AOC	AG251********, 250LM000** (refer to Appendix L)	(The * in the model name can be 0 to 9, A to Z or blank for marketing use only.)	N/A
AOC	24G2, **24G2********, 27G2, **27G2******** (refer to Appendix M)	(* can be 0-9, A-Z, a-z, “+”, “-“, “/”, “\” or blank, Represent different enclosure color and sales region for marketing purpose.)	N/A
AOC	323FCX, 323QCX, **323******** (refer to Appendix N)	(* can be 0-9, A-Z, a-z, – , \ , / , + or blank for marketing purpose only, no technical difference.)	N/A
AOC	22P2, 22P2******** (refer to Appendix O)	(* can be 0-9, A-Z, a-z, – , \ , / , + or blank, represent different enclosure colour for marketing purpose)	N/A
AOC	27B1,27B1HM, **27B1****** (refer to Appendix P)	(The symbol “*” can be 0-9, A-Z, a-z, “+”, “-“,”/”, “\” or blank)	N/A

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AOC	U27P2, **27P2******** (refer to Appendix Q)	(The symbol "*" can be 0-9, A-Z, a-z, "+", "-","/", "\" or blank)	N/A
AOC	25G3ZM, 25G3******** (refer to Appendix R)	(* can be 0-9, A-Z, a-z, –, \, /, + or blank, represent different sales region and enclosure colour for marketing purpose.)	N/A
AOC	**24B30********, **24B35******** (refer to Appendix S)	(*=A-Z, a-z, 0-9, /, +, -, \ or blank)	N/A
AOC	27G2E1, 27G2********, C27G2********, C*27G2********, Q27G2********, U27G2******** (refer to Appendix T)	(*=A-Z, a-z, 0-9, /, +, -, \ or blank)	N/A
AOC	24B3HMF2, **24B3******* (refer to Appendix U)	(* can be 0-9, A-Z, a-z, –, \, /, + or blank for marketing purpose only, no technical difference.)	N/A
AOC	22B3HMF, 22B3********, Q22B3******** (refer to Appendix V)	(* can be A-Z, a-z, 0-9, blank or symbol +, -, /, \, or sign absence or no mark or no symbol).	N/A
AOC	22B30HM2, 22B35HM2, **22********** (refer to Appendix W)	(* can be A-Z, a-z, 0-9, blank or symbol +, -, /, \, or sign absence or no mark or no symbol)	N/A
AOC	Q27B30, 27B3650H, 27B35H, **27********** (refer to Appendix X)	(* can be A-Z, a-z, 0-9, blank or symbol +, -, /, \, or sign absence or no mark or no symbol)	N/A

Identificação da(s) Versão(ões) do(s) Modelo(s) de Produto(s) Certificado(s):
Identification of Version(s) of Certified Product(s) Model(s):

Código do Modelo / *Model Code*	**Descrição do Modelo /** *Model Description*	**Versão /** *Version*	**Código de Barras /** *Bar Code Number*
N/A	N/A	N/A	N/A

Modelo/Model: 236LM00014, *2470**

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50080822 001	2017-05-08
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-11412C077D	2017-02-27
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-FICE-1-1412C077E	2017-04-27

Modelo/Model: G2460PF, 240LM00010, G2460VQ6, 240LM00016

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50080813 001	2017-05-04
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology (SuZhou) Co., Ltd.*	SECE1505118-A	2017-04-01
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-1611C130	2016-11-28
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology Corporation Test Laboratory*	TEFD1506145-A	2016-07-25
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-FICE-1-1611C130	2016-11-28

Modelo/Model: 215LM00041, *2270***

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50083922 001	2017-06-01
Relatório de ensaio emitido por / *Test report issued by* *Audix Technology (Shenzhen) Co., Ltd.*	ACS-E15423-1	2018-05-21
Relatório de ensaio emitido por / *Test report issued by* *AUDIX Technology Corporation, EMC Department*	EM-F150563A	2016-07-25

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Modelo/Model: 185LM000**

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50080564 001	2017-05-15
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology(Suzhou) Co., Ltd.*	SECE1609083	2016-09-23
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology Corporation Test Laboratory*	TEFD1609132	2016-11-03

Modelo/Model: 22B1, 22B1H, 22*******

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50117327 001	2018-01-10
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50117327 002	2022-03-25
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1712C238	2018-01-10
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1712C238	2018-01-10
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1905C011E	2022-06-09

Modelo/Model: 24B1, 24B1H, 24*******

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	17061025 001	2018-01-29
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	17061025 002	2019-04-28
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	17061025 003	2021-08-19
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	17061025 004	2022-04-26
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1801C141	2018-01-30
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1801C141	2018-01-30
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1801C141G	2022-05-20

Modelo/Model: G2260VWQ6, 215LM00033

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50163485 001	2018-07-30
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology (Suzhou) Co., Ltd.*	SECE1709022-A	2018-05-31
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology Corporation Test Laboratory*	TEFD1709118-B	2018-05-31

Modelo/Model: 315LM00019, AG322FCX

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50134159 001	2018-03-30
Relatório de ensaio emitido por / *Test report issued by BTL Inc. (China)*	BTL-EMC-1-1607C046	2018-03-27
Relatório de ensaio emitido por / *Test report issued by BTL Inc. (Taiwan)*	BTL-FICE-1-1607C046	2016-07-26

Modelo/Model: 22P1, **22P1*******

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50117328 001	2018-01-22

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Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50117328 002	2018-03-06
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1801C204	2018-04-17
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1801C204	2018-04-17

Modelo/Model: 24P1, **24P1*****

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50123526 001	2018-03-15
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1801C227	2018-02-26
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1801C227	2018-02-13

Modelo/Model: 9P1, **9P1*****

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50127813 001	2018-04-02
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1802C098	2018-03-26
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1802C098	2018-03-26

Modelo/Model: AG251*****, 250LM000****

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by Nemko Shanghai Ltd. Shenzhen Branch*	373638	2019-04-24
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1904C132	2019-05-13

Modelo/Model: 24G2, **24G2*****, 27G2, **27G2********

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	17061072 001	2018-05-02
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	17061072 002	2019-06-17
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology (Suzhou) Corporation*	SECE1906151	2019-08-03
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology Corp.*	TEFD1906255	2019-08-03
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1905C010	2019-07-23
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1905C010	2019-07-23

Modelo/Model: 323FCX, 323QCX, **323*****

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50306701 001	2019-11-11
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology (Suzhou) Co., Ltd.*	SECE1910074	2019-11-01

Modelo/Model: 22P2, 22P2*****

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50349572 001	2020-03-30
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50349572 002	2020-06-04
Relatório de ensaio emitido por / *Test report issued by*	BTL-EMC-1-2001C075A	2020-06-28

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BTL INC.		
Relatório de ensaio emitido por / *Test report issued by* *BTL INC.*	BTL-FICE-1-2001C075	2020-03-30

Modelo/Model: 27B1,27B1HM, **27B1*****

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	CN22Q3BH 001	2022-03-04
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	CN22Q3BH 002	2022-05-18
Relatório de ensaio emitido por / *Test report issued by* *Audix Technology (Shenzhen) Co., Ltd*	ACS-E22053	2022-03-25
Relatório de ensaio emitido por / *Test report issued by* *Audix Technology (Shenzhen) Co., Ltd*	ACS-F22047	2022-03-25
Relatório de ensaio emitido por / *Test report issued by* *BTL INC.*	BTL-EMC-1-1904C077D	2022-06-06

Modelo/Model: U27P2, **27P2*******

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50337659 001	2020-03-18
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50337659 002	2020-08-10
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50337659 003	2021-06-30
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50337659 004	2022-05-05
Relatório de ensaio emitido por / *Test report issued by* *BTL INC.*	BTL-EMC-1-2003C125A	2022-05-09

Modelo/Model: 25G3ZM, 25G3*******

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 001	2021-05-13
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 002	2022-02-14
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 003	2022-07-11
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc. (Dongguan)*	BTL-EMC-1-2104C184B	2023-06-12

Modelo/Model: **24B30*****, **24B35******** (refer to Appendix S)***

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES230800494201	2023-09-26
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES230800494201A1	2023-11-24
Relatório de ensaio emitido por / *Test report issued by* BTL Inc. (Dongguan)	BTL-EMC-1-2310C020	2023-11-02
Relatório de ensaio emitido por / *Test report issued by* BTL Inc. (Dongguan)	BTL-EMC-1-2310C020B	2024-01-05

Modelo/Model: 27G2E1, 27G2*****, C27G2********, C*27G2********, Q27G2********, U27G2***********

Laboratório de Ensaio / *Testing Laboratory*	Relatório de Ensaio / *Test Report*	Data de Emissão / *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	*SZES221100672801*	*2022-12-28*
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	*SZES230500304601*	*2023-06-28*
Relatório de ensaio emitido por / *Test report issued by* BTL Inc. (Dongguan)	*BTL-EMC-1-2207C151B*	*2023-09-15*

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão /** *Review*: **00**	**Validade /** ***Expiration***
6 de junho de 2024 *June 6, 2024*		5 de junho de 2027 *June 5, 2027*

Modelo/Model: 24B3HMF2, **24B3****

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	*SZES240100059701*	*2024-02-06*
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	*SZES240100059701 (Correction 1)*	*2024-03-06*
Relatório de ensaio emitido por / *Test report issued by* Shenzhen UnionTrust Quality and Technology Co., Ltd.	*2310167389EMC-1*	*2023-11-27*
Relatório de ensaio emitido por / *Test report issued by* Shenzhen UnionTrust Quality and Technology Co., Ltd.	*2403079950EMC-1*	*2024-03-14*

Modelo/Model: 22B3HMF, 22B3*****, Q22B3********

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	*SZES230200081401*	*2023-04-28*
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	*SZES230200081401A1*	*2024-01-30*
Relatório de ensaio emitido por / *Test report issued by* Tianjin Dongdian Testing Service Co., Ltd.	*DDT-B23030305-1E04*	*2023-03-27*

Modelo/Model: 22B30HM2, 22B35HM2, **22*******

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* **SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch**	**SZES231200774901**	**2024-01-04**
Relatório de ensaio emitido por / *Test report issued by* **BTL INC.**	**BTL-EMC-1-2312C138**	**2024-01-15**

Modelo/Model: Q27B30, 27B30H, 27B35H, **27********

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
Relatório de ensaio emitido por / *Test report issued by* **SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch**	**SZES231100735901**	**2024-01-02**
Relatório de ensaio emitido por / *Test report issued by* **BTL INC.**	**BTL-EMC-1-2401C032**	**2024-01-30**

Informações de Auditoria / *Audit Information:*

Local da Auditoria / *Audit Location*	**Data de Realização /** *Perform Date*
Fabricante / *Manufacturer:* *ENVISION INDUSTRIA DE PRODUTOS ELETRONICOS LTDA*	2024-03-12
Solicitante / Supplier: *ENVISION INDUSTRIA DE PRODUTOS ELETRONICOS LTDA*	2024-05-06

Informações Adicionais / *Additional Information: N/A*

Observações / *Observations:*

1. A validade deste Certificado de Conformidade está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações da UL do Brasil Certificações previstas no RAC específico. Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro.
   The validity of this Certificate of Conformity is linked to the performance of maintenance assessments and treatment of possible non-conformities in accordance with the guidelines of UL do Brasil Certifications provided for in the specific Conformity Assessment Regulation. To check the updated condition of regularity of this Certificate of Conformity, the Inmetro database of certified products and services must be consulted.

2. Este certificado aplica-se aos equipamentos (produtos) idênticos ao protótipo avaliado e certificado, manufaturados na(s) unidade(s) fabril(is) mencionada (s) acima.

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão /** *Review*: **00**	**Validade /** ***Expiration***
6 de junho de 2024 *June 6, 2024*		5 de junho de 2027 *June 5, 2027*

This certificate applies to the products that are identical to the prototype investigated, certified and manufactured at the production site mentioned in this certificate.

3. Qualquer alteração no produto, incluindo a marcação, invalidará o presente certificado, salvo se o solicitante informar por escrito à UL do Brasil Certificações sobre esta modificação, a qual procederá à avaliação e decidirá quanto à continuidade da validade do certificado.
   Any non-authorized changes performed in the product, including marking, will invalidate this certificate. UL do Brasil Certificações must be notified about any desired change. This notification will be analyzed by UL do Brasil Certificações that will decide about certificate force.

4. Esta autorização está vinculada a um contrato e para o escopo acima citado.
   This license is related to a commercial proposal and to the scope above cited.

Histórico de Revisões / *Revisions History:*

Revisão / *Review*	**Data /** *Date*	**Descrição da Revisão /** *Revision Description*
00	6 de junho de 2024 June 6, 2024	**Emissão inicial com recertificação do certificado UL-BR 21.1192.** / *Initial Issue with renewall of certificate UL-BR 21.1192*
A última revisão substitui e cancela as anteriores / *The last review replaces and cancels the previous ones*		

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Anexo I / *Attachment I:*

Appendix A **(Modelo/Model: 236LM00014, *2470*****)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: AC 100-240V, 50/60 Hz, 1.5 A; Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013; CISPR 32:2012 Class B, CISPR 24: 2010, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6:2013/COR1:2015, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel with LED backlight for 23.6 inch models	TPV	TPM236H* (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 18.6W; LED Array Voltage: 56V	--	Tested in equipment
Alt.	IVO	M236MWF* (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 17.7W; LED Array Voltage: 31.5V	--	Tested in equipment
Alt.	BOE	HM236WU*-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 18.7W; LED Array Voltage: 37.4V	--	Tested in equipment
Alt.	CHIMEI INNOLUX	M236H**-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 19.09W; LED Array Voltage: 47.6V	--	Tested in equipment
Alt.	TPV	TPM236WF*-****** (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 22.4W; LED Array Voltage: 44.8V	--	Tested in equipment
Alt.	BOE	HR236WU*-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 26.7W; LED Array Voltage: 44.2V	--	Tested in equipment
Plastic Enclosure	Cheil	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+), GC-0700(+), GC-1017(+), VE-1890(+), TP-1100(+), BF-0675(+), BF-0670F, NH-1017T, NH-1017(+), BF-0677(+), HS-7000RA, HG-0760(+)	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E115797)
Alt.	Grand	D-150, D-1000A	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E88637)
Alt.	Chi Mei	PA-757(+), PH-88	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E196075)
Alt.	BASF	GP-35, GP-22, 495F	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E41871)
Alt.	Bayer	FR2000, FR3005	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E41613)
Alt.	LG	HF-350, HF-380, AF-312T1, AF-342T1, GN-5001TF(#), GN-5001RFD, GN-5008A-F, SE750(#), XG-568, XG-569C, GP-1000L, SE-750, GN-5001RF, GN-5001RFT, GN-5008HF	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E67171)
Alt.	Teijin	TN-7500, TN-7500F(#) MN-3600H, MN-3600HA	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E98529, E244324)
Alt.	HINGLONG	HL-ABS-PCR85; HL-ABS-PCR65	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E345434)
Alt.	STYRON	STYRON A-TECH 1400	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E73656)
Alt.	KingFa	5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, RD-900, HIPS-510(H)	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E171666)
Alt.	Haier	HRABS-RS, HRABS-HG, CR-3002	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E230779)
Alt.	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E345434)
Alt.	ORINKO	ABS-3070H	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E115797)

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Metal Enclosure except for bottom side	Interchangeable	Interchangeable	Metallic, thickness 0.4 mm min.	--	--
Metal Enclosure on bottom side	Interchangeable	Interchangeable	Metallic, thickness 0.81 mm min.	--	--
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C, thickness: 1.50mm	UL 94, UL 796	UL
Base stand	Interchangeable	Interchangeable	HB or better	UL 94	UL
Barrier for covering opening in bottom and top of metal enclosure	Interchangeable	Interchangeable	Min. V-1 or better, min. 0.4mm thickness	UL 94	UL
Power Supply with LED driver board, type No. 715G5527 by TPV					
Appliance Inlet (CN901)	Inalways Corporation Co., Ltd.	0707-1, 0711-2, 0714	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S SA-4S-1	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	DELIKANG/ Douling	CDJ-3 CDJ-3-1	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Solteam Electronics Co., Ltd.	ST-01	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	TECX	TU-301-AP, TU-301-S, TU-301-SP, TU-301-A	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Yueqing Hongchang	DB-14	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Wickmann	392, 382-series	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Littelfuse	215 series, 677 series, 392, 382	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5 series	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Fuse (F902 for L.P.S +5V)	Conquer	MET, MST, PTU	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Wickmann	392, 382-series	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Littelfuse	215 series, 677 series, 392, 382	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5 series	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Y- Capacitor (C902,C903) (Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Yinan Don	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL

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Alt.	Haohua	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Wansheng	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	TDK	CS, CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Samwha	SD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Murata	KH, KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	JYA-NAY	JY, JN	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Success	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Hongming	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Y- Capacitor (C900) (Y1 type) (optional)	Walsin	AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Yinan Don	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Haohua	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	TDK	CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Murata	KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	JYA-NAY	JN	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Success	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Hongming	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
X-Capacitor (C904) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Hua Jung	MKP	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC (Semko), UL
Alt.	Faratronic	MKP62	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Europtronic	MPX	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Europtronic	MPX2	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Liow Gu	GS-L	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	EPCOS	B3292#	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Arcotronics	R.46	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC(IMQ), UL
Alt.	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, int.cr= thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko, Nemko
Alt.	Vishay Semiconductor	TCET1103	Di=0.6mm, int.cr=4.7mm, ext.cr=8.4mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko
Alt.	Everlight Electronics Co., Ltd.	EL817	Di=0.5mm, int.cr=6.0mm, ext.cr=7.7mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko, Nemko
Alt.	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko
Alt.	Lite-on	LTV-817	Di=0.4mm, int.cr=4.0mm, ext.cr=8.0m, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL
Alt.	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Fimko, Nemko
Alt.	TOSHIBA	TLP421F	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko
Alt.	TOSHIBA	TLP781F, TLP781	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 3Ω, Min. 2A, 25°C	--	--
Bleeder Resistor (R900, R901, R902)	Interchangeable	Interchangeable	Max. 1M ohm, min. 1/4 W (three in series, located after fuse)	--	--

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Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2A, Min 600V.	--	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150 µF, Max. 450 V, 105 °C	--	--
Current sense resistor (R903)	Interchangeable	Interchangeable	0.39ohm, 2W	--	--
Line Choke (L901) (optional)	Dadon	73G174- 65-H	105°C	--	--
Alt.	TPV	73G174- 65-V	105°C	--	--
Alt.	Tonation	73G174- 65-YS	105°C	--	--
Alt.	YUVA	73G174- 65-N	105°C	--	--
Alt.	TDK	73G174- 65-T	105°C	--	--
Alt.	ASET	73G174- 65-X	105°C	--	--
Alt.	TaiCheng	73G174- 65-S	105°C	--	--
Alt.	Litai	73G174- 65-L	105°C	--	--
Alt.	LI SHIN	73G174- 65-LS	105°C	--	--
Transformer (T901) Alt.)	CHENPING	80GL19P-39-CP	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820; PM-9630	V-0, Phenolic, 150°C	UL 94	UL
Margin Tape	3M Symbio	44(a) 35661$	130°C	UL 510	UL
Insulation Tape	Jingjang	CT(c)	130°C	UL 510	UL
Transformer (T901) Alt.)	YUVA	80GL19P-39-N	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin Tape	Jingjang Symbio	WF(c) 35661$	130°C	UL 510	UL
Insulation Tape	Jingjang	CT(c)	130°C	UL 510	UL
Transformer (T901) Alt.)	TPV	80GL19P-39-V	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin Tape	Symbio	35661$	130°C	UL 510	UL
Insulation Tape	Symbio	35660Y*d	130°C	UL 510	UL
Transformer (T901) Alt.)	TAICHANG	80GL19P-39-S	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin Tape	Jingjang	WF(c)	130°C	UL 510	UL
Insulation Tape	Jingjang	CT(c)	130°C	UL 510	UL
Power Supply with LED driver board, type No. 715G4497 by TPV					
Appliance Inlet (CN901)	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Shenzhen Delikang	CDJ-3, CDJ-3-1	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Solteam Electronics Co., Ltd.	ST-01	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	TECX-UNIONS	TU-301 series	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Ever Island Electric Co. ltd and Walter electric	2000, 2010	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Littelfuse	392, 382	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL

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Fuse (F902, F903 for L.P.S +5V, +5V1)	Conquer	MET, MST, PTU	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Ever Island Electric Co. Ltd and Walter Electric	2000, 2010	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Littelfuse	392, 382	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Y-Capacitor (C902, C903) (Y1 or Y2 type) (optional)	Haohua	CT 7	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Dongguan South Hongming	F	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	JYA-NAY	JN, JY	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Murata	KX, KH	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Samwha	SD	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Success	SE	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	TDK-EPC	CD, CS	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Walsin	AH, AC	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	KUNSHAN WANSHENG ELECTRONICS CO LTD	CT7	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Y- Capacitor (C900) (Y1 type) (optional)	Haohua	CT 7	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Dongguan South Hongming	F	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	JYA-NAY	JN, JY	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Murata	KX, KH	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Samwha	SD	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Success	SE	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	TDK-EPC	CD, CS	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Walsin	AH, AC	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	KUNSHAN WANSHENG ELECTRONICS CO LTD	CT7	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
X-Capacitor (C908) (X1 or X2 type) (optional)	Epcos Electronic Components SA	B3292#	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Europtronic	MKX, MPX2	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Hua Jung	MKP	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC (Semko), UL
Alt.	Liow Gu Electronics Industry Co., Ltd.	GS-L	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL

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Alt.	Ultra Tech Xiphi Enterprise Co., Ltd.	HQX	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Xiamen Faratronic Co., Ltd.	MKP62	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Optocoupler (U902)	Everlight	EL 817 V (V=VDE option)	Dti = 0.4mm, min. Clearance/creepage between input and output = 7.06mm, 100°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	Lite-on	LTV-817	Dti = 0.4mm, min. Clearance/creepage between input and output = 7.0mm, 110°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1	Dti = 0.4mm, min. Clearance/creepage between input and output = 7.0mm, 110°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	Sharp	PC123	Dti = 0.4mm min. Clearance/creepage between input and output = 8.0mm, 110°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	TOSHIBA	TLP421F	Dti = 0.4mm min. Clearance/creepage between input and output = 6.5mm, 115°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	TOSHIBA	TLP781F TLP781	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	Vishay Semiconductor	TCET1103	Dti = 0.4mm min. Clearance/creepage between input and output = 7.0mm, 100°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Speaker (optional)	Interchangeable	Interchangeable	4Ω, 2.5W	--	--
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 3Ω, Min. 2A, 25°C	--	--
Bleeder Resistor (R900, R901, R902)	Interchangeable	Interchangeable	Max. 1M , min. 1/4 W (three in series, located after fuse)	--	--
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2A, Min 600V.	--	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150µF, Max. 450 V, 105°C	--	--
Current sense resistor (R924)	Interchangeable	Interchangeable	0.47 , 2W	--	--
Line Choke (L901) (optional)	Yaxingdianzi	73G174-65-X	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	Dadon	73G174-65-H	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt.	Chang Chun Plastics Co., Ltd.	T375J	V-0, Phenolic, 150°C	UL 94	UL
Alt. Line Choke (L901) (optional)	TPV	73G174-65-V	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	TDK	73G174-65-T	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115, 4130	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	LI SHIN	73G174-65-L	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	YUVA	73G 174-65-N	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	TAI CHANG	73G 174-65-S	120°C	--	--

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- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	LI SHIN	73G174- 65-LS	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt.	Chang Chun Plastics Co., Ltd.	T355J	V-0, Phenolic, 150°C	UL 94	UL
Alt. Line Choke (L901) (optional)	Tonation	73G174- 65-YS	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Transformer (T901)	Jiangsu Channelon Electronic Group Co., LTD	80GL22T-3-H	130°C	--	--
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Margin Tape	Symbio	35661$	130°C	UL 510	UL
- Insulation Tape	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	CT	130°C	UL 510	UL
Alt.	Symbio	35660Y*(%)	130°C	UL 510	UL
Alt. Transformer (T901)	YUVA	80GL22T-3-N	130°C	--	--
- Bobbin	Chang Chun Plastics Co., Ltd.	T375J	V-0, Phenolic, 150°C	UL 94	UL
- Margin Tape	Symbio	35661$	130°C	UL 510	UL
Alt.	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	44(a)	130°C	UL 510	UL
- Insulation Tape	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	CT	130°C	UL 510	UL
Alt.	Symbio	35660Y*(%)	130°C	UL 510	UL
Alt. Transformer (T901)	TPV	S80GL22T-3-V	130°C	--	--
- Bobbin	Sumitomo	PM-8375	V-0, Phenolic, 150°C	UL 94	UL
- Margin Tape	Symbio	35661$	130°C	UL 510	UL
Alt.	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	WF	130°C	UL 510	UL
- Insulation Tape	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	CT-280	130°C	UL 510	UL
Alt.	Symbio	35660Y*(%)	130°C	UL 510	UL
Switching Power Supply with LED driver board, type No. 715G6503 by TPV					
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C, thickness: 1.50mm	UL 94, UL 796	UL
Appliance Inlet (CN901)	Inalways Corporation Co., Ltd.	0707-1, 0711-2, 0714	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S SA-4S-1	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	DELIKANG	CDJ-3, CDJ-3-1	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Douling	CDJ-3, CDJ-3-1	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Solteam Electronics Co., Ltd.	ST-01	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	TECX	TU-301, TU-301-A TU-301-AP, TU-301-S TU-301-SP, TU-301-AL TU-301-AP-A	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Yueqing Hongchang	DB-14	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
	Littelfuse	392, 382-series	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL

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	Wickmann	392, 382-series	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
	Cooper Bussmann	SR-5 series, SS-5 series	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000 series, 2010 series	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Y- Capacitor (C902,C903) (Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Yinan Don	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	TDK	CS, CD	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Murata	KH, KX	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Success	SE, SB	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Y- Capacitor (C913) (Y1 type) (optional)	Walsin	AH	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Yinan Don	CT81	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Haohua	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	TDK	CD	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Wansheng	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Murata	KX	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	JYA-NAY	JN	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Success	SE, SB	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Hongming	F	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
X-Capacitor (C901) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC (Semko), UL
	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Europtronic	MPX, MPX2	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	EPCOS	B3292#	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Arcotronics	R.46	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC(IMQ), UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 3Ω, Min. 2A, 25°C	IEC 60950-1	
Bleeder Resistor (R907, R908, R909)	Interchangeable	SMD type	Max. 1M ohm, min. 1/4 W (three in series, located after fuse)	IEC 60950-1	--
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2A, Min 500V.	IEC 60950-1	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	10-150 µF, Max. 450 V, 105 °C	IEC 60950-1	--
Line Choke (L901) (optional)	Dadon	73G174-192-H	105°C	IEC 60950-1	--
	TPV	73G174-192-V	105°C	IEC 60950-1	--
	ASET	73G174-192-X	105°C	IEC 60950-1	--

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	TaiCheng	73G174-192-S	105°C	IEC 60950-1	--
	Litai	73G174-192-L	105°C	IEC 60950-1	--
	Darfon	73G174-192-DN	105°C	IEC 60950-1	--
	YUVA	73G174-192-N	105°C	IEC 60950-1	--
Transformer (T901) (Alt.)	Li Tai	380GL19P533L	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	Symbio 3M	35661$ 44(a)	130°C	UL 510	UL
Insulation Tape	Jingjiang Symbio	CT(c) 35660Y*(%)	130°C	UL 510	UL
Transformer (T901) (Used when T902 was not connected) (Alt.)	YUVA	380GL19P533N	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	Symbio 3M	35661$ 44(a)	130°C	UL 510	UL
Insulation Tape	Jingjiang Symbio	CT(c) 35660Y*(%)	130°C	UL 510	UL
Transformer (T901) (Used when T902 was not connected) (Alt.)	TPV	S80GL19P533V	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	Symbio SYMBIO	35661$ WF	130°C	UL 510	UL
Insulation Tape	Jingjiang Symbio	CT(c) 35660Y*(%)	130°C	UL 510	UL
Transformer (T902) (Used when T901 was not connected) (Alt.)	Channelon	380GL19P535H	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Transformer (T902) (Used when T901 was not connected) (Alt.)	YUVA	380GL19P535N	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Transformer (T902) (Used when T901 was not connected) (Alt.)	TPV	S80GL19P535V	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix B **(Modelo/Model: G2460PF, 240LM00010, G2460VQ6, 240LM00016)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60 Hz, 1.5 A; Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013; CISPR 22: 2008, CISPR 32: 2012 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3 : 2006+A1:2007+A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS */ LIST OF CRITICAL COMPONENTS:*

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel for constructions I, II, III, IV and VI	AUO	M240HW** (*can be 0~9, A~Z, blank for marking purpose)	24" TFT with LED backlight; Declared power consumption: 20.2W	--	Tested in equipment
	CHI MEI	M236H*-*** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 19.8W	--	Tested in equipment
	IVO	M236MWF* (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 17.7W	--	Tested in equipment
	BOE	HM236W**-*** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 18.6W	--	Tested in equipment
	TPV	TPM236** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 19.4W	--	Tested in equipment
	CHI MEI	M236H**-*** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 18.9W	--	Tested in equipment
	AUO	M240HTN** (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 17.55W; Declared backlight voltage: max. 32.4Vdc	--	Tested in equipment
	AUO	M240HVN** (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 20.62W; Declared backlight voltage: max. 46.2Vdc	--	Tested in equipment
	TPV	TPM240*** (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 16.65W; Declared backlight voltage: max. 49Vdc	--	Tested in equipment
	SAMSUNG	LTM240CL** (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, power consumption: 19.48W; Declared backlight voltage: max. 43.7Vdc	--	Tested in equipment
	LG Display	LM240WU* (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 16.06W; Declared backlight voltage: max. 42.9Vdc	--	Tested in equipment
	INNOLUX	M236H** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight, declared power consumption: 18.012W; Declared backlight voltage: max. 46.2Vdc	--	Tested in equipment
	SAMSUNG	LTM240CT** (* can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 19.48W; Declared backlight voltage: max. 43.7Vdc	--	Tested in equipment
	BOE	HR236WU* (* can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight, declared power consumption: 20.2W; Declared backlight voltage: 57.6Vdc	--	Tested in equipment
Plastic Enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+), GC-0700(+), GC-1017(+), VE-1890(+), TP-1100(+), BF-0675(+), BF-0670F, NH-1017T, NH-1017(+), BF-0677(+), HS-7000RA	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E115797)
	Grand	D-150, D-1000	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E88637)
	Chi Mei	PA-757(+), PH-88	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E196075)
	BASF	GP-35, GP-22, 495F	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E41871)
	Bayer	FR2000, FR3005	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E41613)
	LG	HF-350, HF-380, AF-312T1, AF-342T1, GN-5001TF(#), GN-5001RFD, GN-5008A-F, SE750(#), XG-568, XG-569C, GP-1000L, SE-750, GN-5001RF, GN-5001RFT, GN-5008HF	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E67171)

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	Teijin	TN-7500, TN-7500F(#), MN-3600H, MN-3600HA	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E98529, E244324)
	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E345434)
	STYRON	STYRON A-TECH 1400	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E73656)
	KingFa	5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011(L65), GAR-011(HG6), CK-100, RD-900	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E171666)
	Haier	HRABS-RS, HRABS-HG, CR-3002	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E230779)
Metal Enclosure	--	--	Metallic, thickness 0.61 mm min.	--	--
Metal Enclosure under supply board at horizontal position	---	--	Metal, thickness 0.81 mm min.	--	--
Metal Enclosure under supply board at vertical position	---	--	Metal, thickness 0.81mm min.	--	--
PCB	--	--	V-1 or better Min. 105°C	UL 94, UL 796	UL
Stand base	--	--	HB or better, total weight: 2.27 kg	UL 94	UL
Speaker (2 sets)(optional)	--	--	Max. 8Ω, max. 4.5W	--	--
Negative ion generator (optional)	Dong Guan Fu Fong	FIO-DC5V	I/P : 5.0 Vdc, 0.3W, 40mA O/P: -4±0.5 kVdc (at 5 Vdc)	--	--
-Transformer (T1)	Dong Guan Fu Fong	OSC-1712	105°C	--	--
- Enclosure	CHI MEI CORPORATI ON	PA-765A(+)	V-1 min, thickness 1.5 mm min.	UL 94	UL (E56070)
Negative ion generator (optional)	SHENZHEN SUNYOU	F5BS-GJ1	I/P : 4.0-6.0 Vdc O/P: -4±0.5 kVdc (at 5 Vdc)	--	--
-Transformer (T1)	SHENZHEN SUNYOU	EE16	105°C	--	--
- Enclosure	NAN YA PLASTICS CORP PLASTICS 4TH DIV	1403G6	V-0 min, thickness 0.75 mm min.	UL 94	UL (E130155)
Switching Power Supply Board 715G5361 type A:					
Appliance Inlet (CN901)	Solteam	ST-01	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40015691 UL E200241
	Zhang Jia Gang-Hua Jie	SA-4S, SB-4S-1	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40003610 UL E154342
	Rong Feng	SS-120, SS-7B	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40028101, UL E102641
	Delikang	CDJ-3	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40010513 UL E217394
	Delikang	CDJ-3-1	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40015913 UL E217394
	Inalways	0707-1	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	SGS (ENEC): ENEC 2010083 A1, UL E94191
	Inalways	0711-2	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	SGS (ENEC): ENEC 2010084 A1, UL E94191
	Inalways	0714	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	SGS (ENEC): ENEC 2010085 A1 UL E94191
	TECX	TU-301 series	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40025582 UL E220004
	Yueqing Hongchang	DB-14	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40028645 UL E327347
Fuse (F901 in primary)	Conquer	MET	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017157, UL E82636
	Conquer	MST	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017118, UL E82636
	Conquer	PTU	T4A, 250 Vac	IEC/EN 60127-1,	VDE 40001462,

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				IEC/EN 60127-3, UL 248-1, UL 248-14	UL E82636
	Littelfuse	382	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 400018249 UL E67006
	Littelfuse	392	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 126983 UL E67006
	Cooper Bussmann	SR-5 Series	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE122052 UL E19180
	Cooper Bussmann	SS-5 Series	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40015513 UL E19180
	Ever Island Electric Co., Ltd. and Walter Electric	2000 Series	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018790 UL E220181
	Ever Island Electric Co., Ltd. and Walter Electric	2010 Series	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018781 UL E220181
Fuse (F902, F904) (secondary for LPS) (F904 is optional)	Conquer	MET	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017155 UL E82636
	Conquer	MST	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017118 UL E82636
	Conquer	PTU	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40001462 UL E82636
	Littelfuse	382	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018250 UL E67006
	Littelfuse	392	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 126983 UL E67006
	Cooper Bussmann	SR-5 Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40020046, UL E19180
	Cooper Bussmann	SS-5 Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40015513 UL E19180
	Ever Island Electric Co., Ltd. and Walter Electric	2000 Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018790 UL E220181
	Ever Island Electric Co., Ltd. and Walter Electric	2010 Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018781 UL E220181
Y- Capacitor (C902, C903, C941) (optional) (Y1 or Y2 type)	Walsin	AH	Max. 4700pF, min. 250Vac, min. 85 °C., Y1	IEC 60384-14, UL 60384-14	VDE 40001804 UL E146544
	Walsin	AC	Max. 4700pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE 40001829 UL E146544
	Samwha Capacitor Co.,Ltd.	SD	Max. 4700pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE 40015804 UL E97754
	Haohua	CT7	Max. 4700pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE, 40013601 UL E233106
	TDK-EPC	CD	Max. 4700pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE 40029780 UL E37861
	TDK-EPC	CS	Max. 4700pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE 40029781 UL E37861
	Murata	KX	Max. 4700pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE, 40002831, UL E37921
	Murata	KH	Max. 4700pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE, 40002796 UL E37921
	Guangdong South Hongming Electronic	F	Max. 4700pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE 40036246, UL E154899
	SUCCESS	SE	Max. 4700pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE 40008996 UL E114280
	KUNSHAN WANSHENG ELECTRONI CS CO LTD	CT7	Max. 4700pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE 40012143 UL E249006
	YINAN DON'S ELECTRONIC COMPONEN T CO.,LTD	CT81	Max. 4700pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE 135256 UL E145038
	Rong Feng	RF-1003	10A, 250Vac	IEC/EN 61058-1,	VDE 40030309,

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Power switch (optional)				UL 61058-1	UL (E94138)
	Solteam Electronics Co Ltd	Series MR-21	6A, 250Vac	IEC/EN 61058-1, UL 61058-1	SGS (ENEC 2009053), UL (E148157)
	Solteam Electronics Co Ltd	OR-L series	6A, 250Vac	IEC/EN 61058-1, UL 61058-1	SGS (ENEC 2014027), UL (E148157)
	Zhangjiagang Huajie Electronic Co., Ltd.	PS8	10A, 125V AC 6(4)A 250V AC	IEC/EN 61058-1, UL 61058-1	VDE 40027662, UL (E151790)
	Chily	3024	16A, 250Vac	IEC/EN 61058-1, UL61058-1	SGS (ENEC 2010034 A1), UL (E68037)
X- Capacitor (C908) (X1 or X2 type) (optional)	Ultra Tech Xiphi Enterprise Co., Ltd.	HQX	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40024534) UL (E183780)
	Xiamen Faratronic Co., Ltd.	MKP62	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40000358) UL (E186600)
	Hua Jung Components Co., Ltd.	MKP	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	Intertek (ENEC): 0252-5B UL (E149075)
	Europtronic	MPX	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40018238) UL (E211347)
	Europtronic	MPX2	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40025981) UL (E211347)
	Liow Gu Electronics Industry Co., Ltd.	GS-L	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40023391) UL E186321
	ARCOTRONI CS	R.46	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	IMQ (ENEC): DAT97000141 UL (E97797)
	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40026078) UL (E327138)
	Epcos Electronic Components S A	B3292#	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40005524) UL (E97863)
Thermistor (NR901)	--	--	Min. 3Ω, Min. 2A, 25°C	--	--
Bleeder Resistor (R900, R901, R902)	--	SMD type	Three in series after fuse, each rated max. 680K ohm, min. 1/4W	--	--
Bridging Diode (BD901)	--	--	Min. 600 V, min. 2A	--	--
Ripple Capacitor (C907)	--	--	100 μ F-150 μ F, min. 450V, 105°C	--	--
Transistor (Q901)	--	--	Min. 600 V, min. 3.8A	--	--
Line Choke (L901) (optional)	Dadon	73L174-26-H	105°C	--	--
	TDK	73L174-26-T	105°C	--	--
	LI SHIN	73L174-26-LS	105°C	--	--
	TPV	73L174-26-V	105°C	--	--
Bobbin of line choke	Chang Chun	T375J, T-357	Phenolic, V-0, 150°C	UL94	UL
	Sumitomo	PM-9820, PM-8375	Phenolic, V-0, 150°C	UL94	UL
	E I DUPONT DE NEMOURS & CO INC	FR-530L	130°C	UL94	UL
Y- Capacitor (C937, C938) (optional) (Y1 or Y2 type)	Walsin	AH	Max. 1000pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE (40001804) UL (E146544)
	Walsin	AC	Max. 1000pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE (40001829) UL (E146544)
	Samwha Capacitor Co.,Ltd.	SD	Max. 1000pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE (40015804) UL (E97754)
	Haohua	CT7	Max. 1000pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE (40013601) UL (E233106)
	TDK-EPC	CD	Max. 1000pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE (40029780) UL (E37861)
	TDK-EPC	CS	Max. 1000pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE (40029781) UL (E37861)
	Murata	KX	Max. 1000pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE, 40002831, UL E37921
	Murata	KH	Max. 1000pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE, 40002796 UL E37921
	Guangdong South Hongming Electronic	F	Max. 1000pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE 40036246, UL E154899
	SUCCESS	SE	Max. 1000pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE, 40008996 UL E114280
	KUNSHAN WANSHENG	CT7	Max. 1000pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE, 40012143 UL E249006

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	ELECTRONI CS CO LTD				
	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 1000pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE, 135256 UL E145038
Current sense Resistor (R924)	--	--	Min. 0.3 ohm, 2W	--	--
Photo Coupler (IC902)	Sharp	PC123	Dti = 0.7 mm, Int. cr = 5.0 mm, Ext. cr = 8.0 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2, UL1577	VDE 40008087, UL E64380
	Vishay Semiconductor	TCET1103	Dti = 0.6 mm, Int. cr = 4.7 mm, Ext. cr = 8.4 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2, UL1577	VDE 40028080 UL E76222
	Everlight Electronics Co., Ltd.	EL8X7 (X=1 or 2)	Dti = 0.5 mm, Int. cr = 6.0 mm, Ext. cr = 7.7 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2, UL1577	SGS (FI 27474 A1), UL E214129
	Lite-On	LTV-817	Dti = 0.4 mm, Int. cr = 4.0 mm, Ext. cr = 8.0 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2, UL1577	VDE 40015248 UL E113898
	TOSHIBA	TLP421F	Dti = 0.4 mm, Int. cr = thermal cycling test, Ext. cr = 8.0 mm, 3000 Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE 40010944 UL E67349
	Toshiba	TLP781, TLP781F	Dti = 0.4 mm, Int. cr = thermal cycling test, Ext. cr = 8.0 mm, 3000 Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE 40021173 UL E67349
	RENESAS	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di = 0.4mm, int. cr = thermal cycling 3. ext. cr = 8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE 40008862 UL E72422
Transformer (T901)	TPV	80GL22T-3-V 80TL22T-3-V	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-8375	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	JINGJIANG YAHUA	No.WF(c)	130°C	UL510	UL
-Insulation tape	JINGJIANG YAHUA	NO.CT(c)	130°C	UL510	UL
Transformer (T901)	YUVA	80GL22T-3-N 80TL22T-3-N	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Chang Chun	T375J	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	SYMBIO INC	NO.35661$	130°C	UL510	UL
	3M	NO.44(a)	130°C	UL510	UL
-Insulation tape	JINGJIANG YAHUA	NO.CT(c)	130°C	UL510	UL
	SYMBIO INC	NO.35660Y*%	130°C	UL510	UL
Transformer (T901)	Li Tai	80GL22T-3-L 80TL22T-3-L	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Chang Chun	T375J	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	SYMBIO INC	NO.35661$	130°C	UL510	UL
-Insulation tape	SYMBIO INC	NO.35660Y* d	130°C	UL510	UL
	SYMBIO INC	NO.35661$	130°C	UL510	UL
Transformer (T901)	Dadon / Jiangsu Channelon	80GL22T-3-H 80TL22T-3-H	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	SYMBIO INC	NO.35661$	130°C	UL510	UL
-Insulation tape	SYMBIO INC	No.35660Y* (%)	130°C	UL510	UL
	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T901)	TaiChang	80GL22T-3-S 80TL22T-3-S	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	JINGJIANG YAHUA	WF	130°C	UL510	UL
	JINGJIANG YAHUA	WF310	130°C	UL510	UL
-Insulation tape	JINGJIANG YAHUA	1350F-1	130°C	UL510	UL
	JINGJIANG YAHUA	JY25-A	130°C	UL510	UL
Power Supply with LED driver board, type No. 715G4497 by TPV					
AC-Inlet (CN901)	Inalways Corporation Co., Ltd.	0707-1, 0711-2, 0714	10A, 250 V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S SA-4S-1	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	DELIKANG/ Douling	CDJ-3, CDJ-3-1	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	Solteam Electronics Co., Ltd.	ST-01	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL

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	TECX	TU-301-AP, TU-301-S, TU-301-SP, TU-301-A	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	Yueqing Hongchang	DB-14	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	TECX	TU-301 series	10A, 250V, 70°C	IEC/ EN 60320-1	VDE
Fuse (F901)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc. Wickmann	392, 382-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C900, C902, C903) (Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Yinan Don	CT81	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Haohua	CT7	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Wansheng	CT7	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	TDK	CS, CD	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Samwha	SD	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Murata	KH, KX	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	JYA-NAY	JY, JN	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Success	SE, SB	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Hongming	F	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
X-Capacitor (C908) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Hua Jung	MKP	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	ENEC (Semko), UL
	Faratronic	MKP62	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Europtronic	MPX	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Europtronic	MPX2	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Liow Gu	GS-L	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	EPCOS	B3292#	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Arcotronics	R.46	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	ENEC(IMQ), UL
	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, int.cr= thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko, Nemko
	Vishay Semiconductor	TCET1103	Di=0.6mm, int.cr=4.7mm, ext.cr=8.4mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko
	Everlight Electronics Co., Ltd.	EL817	Di=0.5mm, int.cr=6.0mm, ext.cr=7.7mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko, Nemko
	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko
	Lite-on	LTV-817	Di=0.4mm, int.cr=4.0mm, ext.cr=8.0m, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL
	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Fimko, Nemko
	TOSHIBA	TLP421F	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko

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	TOSHIBA	TLP781F, TLP781	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko
Bridging Diode (BD901)	interchangeable	interchangeable	Min. 2.0A, min. 600Vac	--	--
Ripple Capacitor (C907)	interchangeable	interchangeable	20-180µF, min. 450 V, min. 105 °C	--	--
Transistor (Q901)	interchangeable	interchangeable	Min. 600V, min. 2.0A	--	--
Thermistors (NR901) (Optional)	interchangeable	interchangeable	Min. 3Ω, Max. 5 A at 25 °C	--	--
Current sensor resistor (R924)	interchangeable	DIP type	0.47Ω, 2 W	--	--
Bleeding resistors (R900, R901, R902)	interchangeable	interchangeable	0.91MΩ, Min.1/8W	--	--
Line Choke (L901) (optional)	Dadon	73G174-65-H	105°C	--	Tested in equipment
	ASET	73G174-65-X	105°C	--	Tested in equipment
	Litai	73G174-65-L	105°C	--	Tested in equipment
	TPV	73G174-65-V	105°C	--	Tested in equipment
	Taichang	73G174-65-S	105°C	--	Tested in equipment
	YUVA	73G174-65-N	105°C	--	Tested in equipment
	DARFON	73G174-65- DN	105°C	--	Tested in equipment
	TDK	73G174-65-T	105°C	--	Tested in equipment
Transformer (T901) (Alt.)	TPV	80GL22T-3-V	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-8375	Phenolic, V-0, 150°C	UL94	UL
Margin tape	SYMBIO INC	35661$	130°C	UL510	UL
	JINGJIANG YAHUA	WF(c)	130°C	UL510	UL
Insulation tape	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
	SYMBIO INC	35660Y*(%)	130°C	UL510	UL
Transformer (T901) (Alt.)	YUVA	80GL22T-3-N	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Chang Chun	T375J	Phenolic, V-0, 150°C	UL94	UL
Margin tape	SYMBIO INC	35661$	130°C	UL510	UL
	3M	44(a)	130°C	UL510	UL
Insulation tape	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
	SYMBIO INC	35660Y*(%)	130°C	UL510	UL
Transformer (T901) (Alt.)	DADON	80GL22T-3-H	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
Margin tape	SYMBIO INC	35661$	130°C	UL510	UL
Insulation tape	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
	SYMBIO INC	35660Y*(%)	130°C	UL510	UL
Transformer (T901) (Alt.)	TAICHANG	80GL22T-3-S	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
Margin tape	JINGJIANG JINGYI	WF310	130°C	UL510	UL
	JINGJIANG YAHUA	WF(c)	130°C	UL510	UL
Insulation tape	JIANGJING JINGYI	25-A	130°C	UL510	UL
	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
Transformer (T901) (Alt.)	CHENPING	80GL22T-3-CP	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820, PM-9630	Phenolic, V-0, 150°C	UL94	UL
Margin tape	SYMBIO INC	35661$	130°C	UL510	UL
	JINGJIANG YAHUA	WF(c)	130°C	UL510	UL
Insulation tape	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix C **(Modelo/Model: 215LM00041, *2270******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: AC 100-240V, 50/60Hz; 1.5A, Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013, CISPR 22:2008 (modified) Class B, CISPR 24: 2010, IEC 61000-3-2: 2014, IEC 61000-3-3 : 2013, IEC 61000-4-2: 2008, IEC 61000-4-3: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2005, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel for 21.5'' model	TPV	TPM215HW**-****** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 19.35W and backlight input voltage is 41.6V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	AUO	M215HTN** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 15.54W and backlight input voltage is 38.4V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M215H**-*** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 16.97W and backlight input voltage is 34.65V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215WF*-**** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 16.3W and backlight input voltage is 51.2V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215WF*-**** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 14.35W and backlight input voltage is 45.0V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	BOE	HR215WU*-*** (* can be 0-9, A-Z, a-z for marketing purpose)	21.5 inch TFT type, with LED back light, power consumption: 24.87W; LED Array Voltage: 41.6V.	IEC 60950-1	Tested in equipment
(Alternative)	BOE	HM215WU*-*** (* can be 0-9, A-Z, a-z for marketing purpose)	21.5 inch TFT type, with LED back light, power consumption: 17.19W; LED Array Voltage: 51.2V.	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215HT** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 15.82W; LED Array Voltage: 52.8V	IEC 60950-1	Tested in equipment
(Alternative)	AUO	M215HW** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 17W; LED Array Voltage: 52.8V.	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI	M215H*-L** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 12.55W; LED Array Voltage: 41.V.	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215WF* (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 16.0W; LED Array Voltage: 57.6V.	IEC 60950-1	Tested in equipment
(Alternative)	CPT	CLAA215FA** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 14.6W; LED Array Voltage: 41.6V.	IEC 60950-1	Tested in equipment
(Alternative)	BOE	HT215F**-*** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 16.56W; LED Array Voltage: 54.4V.	IEC 60950-1	Tested in equipment
(Alternative)	AUO	T215HVN**** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 16.55W; LED Array Voltage: 54.4V.	IEC 60950-1	Tested in equipment

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(Alternative)	TPV	TPM215WF* (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 14.9W; LED Array Voltage: 31.5V.	IEC 60950-1	Tested in equipment
Plastic enclosure	SAMSUNG SDI CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+), GC-0700(+), GC-1017(+), GC-0750(+), VE-1890(+), TP-1100(+), BF-0675(+), BF-0670(+), NH-1017(p), BF-0677(+), HS-7000(+), HG-0760(+), HR-1360(+)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Grand	D-150, D-1000	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	LG	HF-350, HF-380, AF312T1, AF342T, GN-5001TF(#), GN-5001RFD, GP-5008A-F, SE750(#), XG-568, XG-569C, GP-1000L, SE-750, GN-5001RF(T)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Chi Mei	PA-757(+), PH-88	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	King Fa	5197, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011(L65), GAR-011(HG6), CK-100	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Bayer	FR3005	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Teijin	TN-7500(v), TN-7500F(#), MN-3600H(#)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	STYRON	STYRON A-TECH 1400	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Haier	HRABS-RS, HRABS-HG, CR-3002	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	HIPS-2000	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
Metal enclosure for all types	Interchangeable	Interchangeable	Metal thickness: min. 0.5mm	--	Tested in equipment
Base stand	Interchangeable	Interchangeable	HB or better	UL 94	UL
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Power supply board: 715G6503 type A					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL

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(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Wickmann	392, 382-series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Cooper Bussmann	SR-5 series, SS-5 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
Y- Capacitor (C902 and C903, Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	TDK	CS, CD	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Murata	KH, KX	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL

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(Alternative)	Hongming	F	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Wansheng	CT7	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Haohua	CT7	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Samwha	SD	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Success	SB, SE	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
Y- Capacitor (C913) (Y1 type) (optional)	Walsin	AH	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Haohua	CT7	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	TDK	CD	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Murata	KX	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Success	SE, SB	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Hongming	F	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL

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X-Capacitor (C901) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Rong guang da	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Arcotronics	R.46	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	EPCOS	B3292#	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 0.2Ω at 25°C, min. 2A	IEC 60950-1	Tested in equipment
Bleeder Resistor (R907, R908, R909)	Interchangeable	Interchangeable	Max. 1MΩ, min. 1/4W	IEC 60950-1	Tested in equipment
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.600V, min.2A	IEC 60950-1	Tested in equipment
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150µF, max. 400V, 105°C	IEC 60950-1	Tested in equipment
Line Choke (L901) (Optional)	Dadon	73G174-192-H	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Prosperity Dielectrics	73G174-192-F	105°C	IEC 60950-1	Tested in equipment
(Alternative)	ASET	73G174-192-X	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Taichang	73G174-192-S	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Litai	73G174-192-L	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Darfon	73G174-192-DN	105°C	IEC 60950-1	Tested in equipment

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(Alternative)	YUVA	73G174-192-N	105°C	IEC 60950-1	Tested in equipment
Transformer (T902) (Alt.)	Channelon	380GL19P535H00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
Transformer (T902) (Alt.)	YUVA	380GL19P535N00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
Transformer (T902) (Alt.)	TPV	S80GL19P535V00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Furukawa	TEX-E	Max.130°C	IEC/EN 60950-1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
Power supply board: 715G6503 type B					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL

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(Alternative)	Wickmann	392, 382-series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Cooper Bussmann	SR-5 series, SS-5 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
Y- Capacitor (C902 and C903, Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	TDK	CS, CD	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Murata	KH, KX	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Hongming	F	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Wansheng	CT7	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Haohua	CT7	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Samwha	SD	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL

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(Alternative)	Success	SB, SE	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
Y- Capacitor (C913) (Y1 type) (optional)	Walsin	AH	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Haohua	CT7	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	TDK	CD	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Murata	KX	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Success	SE, SB	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Hongming	F	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
X-Capacitor (C901) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL

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(Alternative)	Hua Jung	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Rong guang da	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Arcotronics	R.46	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	EPCOS	B3292#	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 0.2Ω at 25°C, min. 2A	IEC 60950-1	Tested in equipment
Bleeder Resistor (R907, R908, R909)	Interchangeable	SMD type	Max. 1MΩ, min. 1/4W	IEC 60950-1	Tested in equipment
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.600V, min.2A	IEC 60950-1	Tested in equipment
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150µF, max. 400V, 105°C	IEC 60950-1	Tested in equipment
Line Choke (L901) (Optional)	Dadon	73G174-192-H	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Prosperity Dielectrics	73G174-192-F	105°C	IEC 60950-1	Tested in equipment
(Alternative)	ASET	73G174-192-X	105°C	IEC 60950-1	Tested in equipment
(Alternative)	TaiCheng	73G174-192-S	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Litai	73G174-192-L	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Darfon	73G174-192-DN	105°C	IEC 60950-1	Tested in equipment
(Alternative)	YUVA	73G174-192-N	105°C	IEC 60950-1	Tested in equipment
Transformer (T901) (Alt.)	LFDJ	380GL19P533J00	Class B	IEC 60950-1	Tested in equipment

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
(Alternative)	Chang Chun Plastics Co., Ltd.	T357HF	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	JINGJIANG YAHUA	No.WF	130°C	UL 510	UL
(Alternative)	3M COMPANY	44(a)	130°C	UL 510	UL
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL 510	UL
Transformer (T901) (Alt.)	YUVA	380GL19P533N00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	SYMBIO INC	No.35661$	130°C	UL510	UL
(Alternative)	3M COMPANY	44(a)	130°C	UL510	UL
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL 510	UL
Transformer (T901) (Alt.)	TPV	S80GL19P533V00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	SYMBIO INC	No.35661$	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.WF	130°C	UL510	UL
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL 510	UL
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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Validade / ***Expiration***
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June 5, 2027

Appendix D **(Modelo/Model: 185LM000**)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: 100-240Vac, 50/60 Hz, 1.5 A; Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32 : 2012, CISPR 24: 2010, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel for 18.5 inch model	TPV	TPM185B*-****** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 11.4W and backlight input voltage is 35.2V in specification.	IEC 60950-1	Tested in equipment
	AUO	M185XW** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 10.2W and backlight input voltage is 36V in specification.	IEC 60950-1	Tested in equipment
	AUO	M185XTN** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 7.8W and backlight input voltage is 25.2V in specification.	IEC 60950-1	Tested in equipment
	BOE	HM185WX*-*** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 10.68W and backlight input voltage is 32V in specification.	IEC 60950-1	Tested in equipment
	CHIMEI INNOLUX	M185B**-*** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 11.11W and backlight input voltage is 27.2V in specification.	IEC 60950-1	Tested in equipment
	L&T	LM185WH*-**** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 12.8W and backlight input voltage is 51.2V in specification.	IEC 60950-1	Tested in equipment
	SAMSUNG	LTM185AT** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 11.9W and backlight input voltage is 35.2V in specification.	IEC 60950-1	Tested in equipment
	TPV	TPM185WH* (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 11.8W and backlight input voltage is 38.5V in specification.	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 2.0mm thickness min. 60°C	UL 94	UL

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	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	HUIZHOU WOTE	2100	HB or better, 2.0mm thickness min. 60°C	UL 94	UL

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	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	STYRON	STYRON A-TECH 1200	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	CHI LIN TECHNOLOGY CO LTD	GA-1(aaa), GA-1535	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
Metal enclosure (except part under power board)	Interchangeable	Interchangeable	Metallic, thickness 0.6 mm min.	--	--
Metal enclosure (under power board)	Interchangeable	Interchangeable	Metallic, thickness 0.6 mm min.	--	--
Base stand (optional)	Interchangeable	Interchangeable	HB or better	UL 94	UL
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Power supply board: 715G5527					
AC-Inlet (CN901)	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S, SA-4S-1	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Shenzhen Delikang Electronics Technology Co. Ltd.	CDJ-3, CDJ-3-1	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co. Ltd.	ST-01	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co. Ltd.	VDE: SC04 UL: SC04-1BWW, SC04-2BTT	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Yueqing Hongchang Radio Co., Ltd	DB-14	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
Fuse (F901)	Conquer Electronics Co., Ltd.	MET series, MST, PTU	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc.	677 series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc./ LITTELFUSE WICKMANN WERKE	392, 382-series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann LLC	SR-5, SS-5 series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Fuse (F902) (optional)	Conquer Electronics Co., Ltd.	MET series, MST, PTU	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL

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	Littelfuse, Inc.	677 series	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc./ LITTELFUSE WICKMANN WERKE	392, 382-series	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann LLC	SR-5, SS-5 series	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc. Wickmann	392, 382-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin Technology Corp.	AC, AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	TDK Corporation	CS, CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Murata Mfg. Co., Ltd.	KH, KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Haohua Electronic Co	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Samwha Capacitor Co., Ltd.	SD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Success Electronics Co., Ltd.	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
X-Capacitor (X1 or X2 type) (C904) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Europtronic	MPX, MPX2	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Liow Gu	GS-L	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Arcotronics	R.46	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	ENEC(IMQ), UL
	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	EPCOS	B3292#	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Nanjing Tengen Rongguangda Electronics (Group) Co., Ltd.	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, int.cr= thermal cycling , ext. cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL

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	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, int.cr=6.0mm, ext.cr=7.7mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, int. cr= thermal cycling, ext. cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	Lite-on	LTV-817	Di=0.4mm, int.cr=4.0mm, ext.cr=8.0m, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	TOSHIBA	TLP781F TLP781	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	TOSHIBA	TLP421F	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	VISHAY Semiconductor GmbH	TCET1103-3034	Di=Min. 0.4mm, int. cr=thermal cycling , ext. cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 3Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R900, R901, R902)	Interchangeable	SMD type	Max. 1MΩ, min. 1/4W	--	--
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.600V, min.2A	--	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150 µF, min. 450V, 105°C	--	--
Line Choke (L901) (optional)	Dadon	73G174- 65-H	105°C	--	--
	TPV	73G174- 65-V	105°C	--	--
	DARFON	73G174- 65-DN	105°C	--	--
	TaiChang	73G174- 65-S	105°C	--	--
	TDK	73G174- 65-T	105°C	--	--
	Litai	73G174- 65-L	105°C	--	--
	YUVA	73G174- 65-N	105°C	--	--
	ASET	73G174- 65-X	105°C	--	--
Transformer (T901) (Alt.)	YUVA	80GL19P-39-N	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL 94	UL
Margin Tape	SYMBIO INC	35661 (c), 35660 (a), 35660Y (e)	130°C	UL 510	UL
	3M	44 (a)	130°C	UL 510	UL
Insulation Tape	SYMBIO INC	35660Y (e)	130°C	UL 510	UL
	JINGJIANG YAHUA	CT	130°C	UL 510	UL
Transformer (T901) (Alt.)	TPV	80GL19P-39-V	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL 94	UL
Margin Tape	SYMBIO INC	35661 (c), 35660 (a), 35660Y (e)	130°C	UL 510	UL
Insulation tape	JINGJIANG YAHUA	35660Y (e)	130°C	UL 510	UL
Transformer (T901) (Alt.)	TAICHANG	80GL19P-39-S	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL 94	UL
Margin tape	JINGJIANG YAHUA	WF* (c)(h)	130°C	UL 510	UL
Insulation Tape	JINGJIANG YAHUA	CT	130°C	UL 510	UL
Power supply board: 715G6503					
AC-Inlet (CN901)	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S, SA-4S-1	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL

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	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Shenzhen Delikang Electronics Technology Co. Ltd.	CDJ-3, CDJ-3-1	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co. Ltd.	ST-01	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co. Ltd.	VDE: SC04 UL: SC04-1BWW, SC04-2BTT	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Yueqing Hongchang Radio Co., Ltd	DB-14	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
Fuse (F901 in primary)	Conquer Electronics Co., Ltd.	MET series, MST, PTU	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc.	677 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc./ LITTELFUSE WICKMANN WERKE	392, 382-series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann LLC	SR-5, SS-5 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C903) (Y1 or Y2 type) (optional)	Walsin Technology Corp.	AC, AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	TDK Corporation	CS, CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Murata Mfg. Co., Ltd.	KH, KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Haohua Electronic Co	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Samwha Capacitor Co., Ltd.	SD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Success Electronics Co., Ltd.	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
Y- Capacitor (C902, C913) (Y1 type) (optional)	Walsin Technology Corp.	AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	TDK Corporation	CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Murata Mfg. Co., Ltd.	KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Haohua Electronic Co	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL

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	Samwha Capacitor Co., Ltd.	SD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Success Electronics Co., Ltd.	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
X-Capacitor (C901) (X1 or X2 type) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Europtronic	MPX, MPX2	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Liow Gu	GS-L	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Arcotronics	R.46	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	ENEC(IMQ), UL
	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	EPCOS	B3292#	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Nanjing Tengen Rongguangda Electronics (Group) Co., Ltd.	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 0.2Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R907, R908, R909)	Interchangeable	SMD type	Max. 1MΩ, min. 1/4W	--	--
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.600V, min.2A	--	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150 µF, min. 400V, 105°C	--	--
Line Choke (L901) (optional)	Dadon	73G174-192-H	105°C	--	--
	Prosperity Dielectrics	73G174-192-F	105°C	--	--
	ASET	73G174-192-X	105°C	--	--
	TaiChang	73G174-192-S	105°C	--	--
	Litai	73G174-192-L	105°C	--	--
	Darfon	73G174-192-DN	105°C	--	--
	YUVA	73G174-192-N	105°C	--	--
Transformer (T902) (Alt.)	Channelon	380GL19P535H00	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	Jingjiang	CT	130°C	UL 510	UL
	Symbio	35660Y (e)			
Transformer (T902) (Alt.)	YUVA	380GL19P535N00	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	Jingjiang	CT	130°C	UL 510	UL
	Symbio	35660Y (e)			

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Transformer (T902) (Alt.)	TPV	S80GL19P535V00	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Furukawa	TEX-E	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	Jingjiang	CT	130°C	UL 510	UL
	Symbio	35660Y (e)			
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix E **(Modelo/Model: 22B1, 22B1H, 22********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:* I/P: 19VDC, 1.31A Class Ⅲ; IP20

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32 : 2015, CISPR 24:2010/A1:2015, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPM215*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 9.3W; LED array voltage: 31V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	H*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 19.4W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	M*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 10.9W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.3W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 14.25W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 18.3W; LED array voltage: 34.1V)	IEC 60950-1	Tested in equipment
(Alternative)	INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.53W; LED array voltage: 36.66V)	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.21W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 13.62W; LED array voltage: 48.2V)	IEC 60950-1	Tested in equipment
(Alternative)	AUO	*215H****.* (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.55W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
Plastic enclosure	SAMSUNG SDI CO LTD (Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++), GC-1017(+), GC-0750(+), VE-1890(+), TN-1100(+), BF-0675(+), BF-0670(+), NH-1017SG(+), NH-1017(p), BF-0677(+), HS-7000(+), HG-0760(+), HR-1360(+)	HB or better, min. 1.6mm thickness	UL 94	UL E115797
(Alternative)	Grand	D-150, D-1000, D-1000A	HB or better, min. 1.6mm thickness	UL 94	UL E88637
(Alternative)	LG	HF350(#), HF-380(#), AF312T1, AF342T1, AF342(#), LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), SE750(#), XG568(#), XG569(#), GP-1000F(#), LUPOY GN-5001RF(T)	HB or better, min. 1.6mm thickness	UL 94	UL E67171
(Alternative)	Chi Mei	PA-757(+), PA-756S, PH-88, PC-110	HB or better, min. 1.6mm thickness	UL 94	UL E56070

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(Alternative)	King Fa	5197, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, HIPS-510 (o), CK-55111	HB or better, min. 1.6mm thickness	UL 94	UL E171666
(Alternative)	ALBIS	GP-35, GP-22, 495F	HB or better, min. 1.6mm thickness	UL 94	UL E80168
(Alternative)	Bayer	FR3000 series, FR3005 series	HB or better, min. 1.6mm thickness	UL 94	UL E41613
(Alternative)	Teijin	TN-7500(c), TN-7500F(#), MN-3600H(#), MN-3600V(#)	HB or better, min. 1.6mm thickness	UL 94	UL E98529
(Alternative)	STYRON	STYRON A-TECH 1400	HB or better, min. 1.6mm thickness	UL 94	UL E162447
(Alternative)	Haier	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 1.6mm thickness	UL 94	UL E230779
(Alternative)	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 1.6mm thickness	UL 94	UL E345434
(Alternative)	ORINKO	ABS-3070H	HB or better, min. 1.6mm thickness	UL 94	UL E328304
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y), YOUHO-1303B	HB or better, min. 1.6mm thickness	UL 94	UL E471190
(Alternative)	UNIC	UR-3006+	HB or better, min. 1.6mm thickness	UL 94	UL E471190
(Alternative)	SABIC	C6600	HB or better, min. 1.6mm thickness	UL 94	UL E207780
(Alternative)	WISTRON	GA35	HB or better, min. 1.6mm thickness	UL 94	UL E359575
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 1.6mm thickness	UL 94	UL E310240
(Alternative)	FORMOSA IDEMITSU PETROCHEMICAL CORP	#1900+(f2)	HB or better, min. 1.6mm thickness	UL 94	UL E238753
(Alternative)	Interchangeable	Interchangeable	HB or better, min. 1.6mm thickness	UL 94	UL
PCB	CHANG CHUN PLASTICS CO LTD	CCP-508	V-1 or better, min. 105°C	UL 94	UL E108591
(Alternative)	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
AC/DC Adapter	TPV Electronics (Fujian) Co., Ltd.	ADPC1925EX	I/P: 100-240Vac, max. 1.3A, 50-60Hz; O/P: DC 19V, 1.31A, 40 °C, 5000m Comply with LPS	IEC 60950-1:2005+A1+A2; EN 60950-1:2006+A11+A1+A12+A2	NEMKO CB (Certif. No. NO83042)
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão /** *Review*: **00**	**Validade /** ***Expiration***
6 de junho de 2024 *June 6, 2024*		5 de junho de 2027 *June 5, 2027*

Appendix F* (Modelo/Model: 24B1, 24B1H, 24*****)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 19VDC, 1.31 A; Class Ⅲ; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32 : 2015, CISPR 24:2010/A1:2015, IEC 61000-3-2: 2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
*LCD Panel with LED backlight type (for models 24********)*	TPV	TPM236W**-********* (* can be 0~9, A~Z, "." or blank)	23.6 inch TFT LCD (power consumption: 15.9 W; LED array voltage: 57.8V)	--	Tested in equipment
	L&T	LM238***-**** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.1W; LED Array Voltage: 38.8V	--	Tested in equipment
	BOE	MV238***-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 16.9W; LED Array Voltage: 51.5V	--	Tested in equipment
	LG Display	LM238WF*-**** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 17.76W; LED Array Voltage: 58.9V	--	Tested in equipment
	TPV	TPM238WF* (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 15.11W; LED Array Voltage: 52.7V	--	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E115797)
	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E88637)
	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E56070)
	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E80168)
	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E41613)

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	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E67171)
	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529, E244324)
	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E345434)
	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E73656)
	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E171666)
	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E230779)
	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E328304)

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	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E310240)
	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
	HUIZHOU WOTE	2100	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529)
	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E108538)
	STYRON	STYRON A-TECH 1200	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E162447)
	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E314268)
	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E103670)
	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E207780)
	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E205938)
*Power Adapter (for models 24********)*	TPV	ADPC1925EX	IP: 100-240 Vac, 50-60 Hz, 1.3A. OP: 19Vdc, 1.31A, LPS, 40˚C, Class I, altitude operating: 5000 m	IEC 60950-1: 2005+A1	CB by Nemko (certificate no. NO83042)
Alt.	L&T	STK025-19131T	IP: 100-240 Vac, 50-60 Hz, 1.3A. OP: 19Vdc, 1.31A, 40˚C, Class I, 5000m Comply with SELV and L.P.S.	IEC 62368-1: 2014	CB by TUV SUD (Certificate No. SG PSB-IV-02436M1)
PCB	FUJIAN MILKY-WAY PRINTED CIRCUIT BOARD INDUSTRIAL CO LTD	MW-2, MW-CEM1	Min. V-1 or better, min. 105 °C	UL 94, UL 796	UL (E168066)
Alt.	Interchangeable	Interchangeable	Min. V-1 or better, min. 105 °C	UL 94, UL 796	UL
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix G **(Modelo/Model: G2260VWQ6, 215LM00033)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A; Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013; CISPR 32: 2015, CISPR 24:2010, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3 : 2006+A1:2007+A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel for 21.5'' model	L&T	BM215WF*-**** (* can be 0-9, A-Z or blank, the suffix cannot be T2BB)	21.5'' panel with LED backlight The declared power consumption in specification is 17.3W.	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215WF*-T2BB (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 16.3W.	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215WF****** (* can be 0-9, A-Z, "-" or blank, no technical difference)	21.5'' panel with LED backlight The declared power consumption in specification is 14.95W.	IEC 60950-1	Tested in equipment
(Alternative)	AUO	M215HW0* (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 15.1W.	IEC 60950-1	Tested in equipment
(Alternative)	CHI MEI	M215H*-*** (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 15.28W.	IEC 60950-1	Tested in equipment
(Alternative)	TPV	TPM215HW0* (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 15.5W.	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215WF* (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 16.2W.	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215HT** (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 22.26W	IEC 60950-1	Tested in equipment
Plastic enclosure	Cheil	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+), GC-0700(+), GC-1017(+), VE-1890(+), TP-1100(+), BF-0675(+), BF-0670(+), HS-7000(+)	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Grand	D-150, D-1000	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	LG	HF-350, HF-380, AF-312T1, AF-342T1, GN-5001TF(#), GN-5001RFD, GP-5008A-F, SE750(#), XG-568, XG-569C, GP-1000L, SE-750	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Chi Mei	PA-757(+), PH-88	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	King Fa	5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, CK-100	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Basf	GP-35, GP-22, 495F	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Bayer	FR2000, FR3005	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Teijin	TN-7500(v), TN-7500F(#)	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	STYRON	STYRON A-TECH 1400	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Haier	HRABS-RS, HRABS-HG	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
Base stand	Interchangeable	Interchangeable	HB or better	UL 94	UL
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Speaker (2 sets) (optional) (for 21.5 inch models only)	Interchangeable	Interchangeable	Max. 8Ω, max. 4.5 W	--	Tested in equipment
For Switching Power Supply with DC/DC converter board type: 715G4497					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1	VDE, UL

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(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
Fuse F901	Littelfuse	382, 392	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	Conquer	MET MST-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	SAVE FUSETECH INC	SR-5 series, SS-5 series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	Walter	2000 series, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
Fuse F902 (sec. for LPS)	Littelfuse	382, 392	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	Conquer	MET MST-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	SAVE FUSETECH INC	SR-5 series, SS-5 series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	Walter	2000 series, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
Y- Capacitor (C900, C902, C903) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A, NS-B	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
X-Capacitor (C908) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	ENEC(Semko), UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Arcotronics	R.46	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, int.=4.0mm, ext.=8.0mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, int.=4.7mm, ext.=8.4mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	Everlight Electronics Co., Ltd.	EL817 EL1013	Di>0.4mm, int.>4.0mm, ext.>7.0mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	Lite-on	LTV-817	Di=0.7mm, int.=4.7mm, ext.=8.4mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1	Di>0.4mm, int.>4.0mm, ext.>7.0mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	TOSHIBA	TLP421F, TLP781F, TLP781	Di>0.4mm, int.>4.0mm, ext.>7.0mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Max. 5A, min. 3Ω, 25°C	--	Tested in equipment
Bleeder Resistor (R900, R901, R902)	Interchangeable	Interchangeable	Max. 680KΩ, min. 1/8W	--	Tested in equipment
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2.0A, 600Vac min.	--	Tested in equipment
Ripple Capacitor (C907)	Interchangeable	Interchangeable	100-180µF, min. 450V, 105°C	--	Tested in equipment
Transistor (Q901)	Interchangeable	Interchangeable	Min. 600V, min. 2.0A	--	Tested in equipment
Line Choke (L901) (optional)	Dadon	73G174-65-H	105°C	--	Tested in equipment
(Alternative)	TPV	73G174-65-V	105°C	--	Tested in equipment
(Alternative)	Taichang	73G174-65-S	105°C	--	--
(Alternative)	YUVA	73G174-65-N	105°C	--	--
(Alternative)	Yaxing	73G174-65-X			

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(Alternative)	Darfon	73G174-65-DN			
Transformer (T901)	Dadon	80GL22T-3-H	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
(Alternative)	YUVA	80GL22T-3-N	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
(Alternative)	TPV	80GL22T-3-V	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
(Alternative)	CHENPING	80GL22T-3-CP	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
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June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix H **(Modelo/Model: 315LM00019, AG322FCX)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:* I/P: 20V d.c., 2.25 A; Class Ⅲ; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2012 Class B, CISPR 24:2010, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPT320B*-****.* (* can be 0-9, A-Z, a-z, "-" or blank)	32 inch panel with LED backlight The declared power consumption is 47.35W and backlight input voltage is 50.4V in specification.	--	Tested in equipment
Alt.	TPV	TPT315B*-****.* (* can be 0-9, A-Z, a-z, "-" or blank for marketing purpose only)	31.5 inch panel with LED backlight The declared power consumption is 35.14W and backlight input voltage is 47.6V in specification.	--	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E115797)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E88637)
Alt.	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL(E56070)
Alt.	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E80168)
Alt.	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E41613)
Alt.	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529, E244324)
Alt.	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E345434)

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Alt.	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E73656)
Alt.	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E230779)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E328304)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
Alt.	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E310240)
Alt.	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
Alt.	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
Alt.	HUIZHOU WOTE	2100	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529)

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Alt.	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E108538)
Alt.	STYRON	STYRON A-TECH 1200	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E162447)
Alt.	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E314268)
Alt.	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E103670)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E207780)
Alt.	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E205938)
Alt.	CHI LIN	GA-1(aaa), GA-1535	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E177071)
AC/DC Adapter	TPV Electronics (Fujian) Co., Ltd.	ADPC2045	I/P: 100-240Vac, 1.5A, 50-60Hz; O/P: DC 20V, 2.25A; 40 °C, 5000m Comply with LPS	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013	TUV CB (Certif. No. JPTUV-064333)
Fuse F7001, F7002 (on main board 715G8722 for LPS)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Littelfuse Phils. Inc.	TE5 400 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Conquer	MET series, MST series, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Power Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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Appendix I **(Modelo/Model: 22P1, **22P1********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A; Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2015 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPM215*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 12.42W; LED array voltage: 47.6V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	H*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 19.4W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	M*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 10.9W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.3W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 14.25W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 18.3W; LED array voltage: 34.1V)	IEC 60950-1	Tested in equipment
(Alternative)	INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.53W; LED array voltage: 36.66V)	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.21W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 13.62W; LED array voltage: 48.2V)	IEC 60950-1	Tested in equipment
(Alternative)	AUO	*215H****.* (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.55W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
Heat shrinkable tube used on metal pillar near C907	DONGGUAN SALIPT CO LTD	SALIPT S-901-600, SALIPT S-HPT-600	125°C, 600V, min. 0.4mm thickness	--	UL
Switching mode power supply board: 715G7300 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Fuse (F901)	Littelfuse, Inc. Wickmann	382-series, 392	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL

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(Alternative)	Littelfuse, Inc.	TE5 400	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
(Alternative)	Conquer	MET, MST, PTU	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A, NS-B	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	Europtronic	MPX, MPX2	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F, TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Thermistor (NR901)	JIANGSU XINGSHUN ELECTRONICS CO.,LTD	8D2-14	Min. 5Ω at 25°C, min. 2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 5Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R907, R908, R909)	FENGHUA	RVS-06	Max. 1MΩ, min. 1/4W	--	--
(Alternative)	Interchangeable	Interchangeable	Max. 1MΩ, min. 1/4W	--	--
Current sensor resistor (R931)	CAIZHI	MOF2WS	Min. 0.825Ω, 2W	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 0.825Ω, 2W	--	--
Bridging Diode(BD901)	LITEON	KBP208G-C	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor(C907)	KINGNICHI	PW2W470MLT1236DLRV	50-150μF, max. 450V, 105°C	--	--
(Alternative)	Interchangeable	Interchangeable	50-150μF, max. 450V, 105°C	--	--
Transistor (Q901)	AUK	SMK0465F	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Line Choke (L901) (Optional)	ASET	73G-174-192-X	105°C	--	--
(Alternative)	DADON	73G-174-192-H	105°C	--	--
(Alternative)	TAICHANG	73G-174-192-S	105°C	--	--
(Alternative)	FRONTIER	73G-174-192-F	105°C	--	--
(Alternative)	LI TAI	73G-174-192-L	105°C	--	--
(Alternative)	YUVA	73G-174-192-N	105°C	--	--
(Alternative)	DARFON	73G-174-192-DN	105°C	--	--

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Certificado de Conformidade

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Transformer (T902) (Alt.)	Channelon	380GL19P535H	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	YUVA	380GL19P535N	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	TPV	S80GL19P535V	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Furukawa	TEX-E	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	LFDJ	380GL19P535J	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	PHOENIX	380GL19P535P	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B+@	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT*(c)(g)	130°C	UL510	UL
Power Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Appendix J **(Modelo/Model: 24P1, **24P1********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A; Class Ⅰ; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2015 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	AUO	M240UAN**** (*can be 0-9, A-Z, "." or blank for marketing purpose).	24 inch TFT LCD (power consumption: 15.3W; LED array voltage: 43.5V)	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM240*** (*can be 0-9, a-z, A-Z or blank for marketing purpose).	24 inch TFT LCD (power consumption: 16.9W; LED array voltage: 40.3V)	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM240**** (*can be 0-9, a-z, A-Z or blank for marketing purpose).	24 inch TFT LCD (power consumption: 15.9W; LED array voltage: 41.6V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	MV240*** (*can be 0-9, a-z, A-Z or blank for marketing purpose).	24 inch TFT LCD (power consumption: 15.6W; LED array voltage: 40.3V)	IEC 60950-1	Tested in equipment
(Alternative)	TPV	TPM240***-***** (*can be 0-9, a-z, A-Z or blank for marketing purpose).	24 inch TFT LCD (power consumption: 16.65W; LED array voltage: 44.8V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM238***-**** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT LCD (power consumption: 12.1W; LED Array Voltage: 38.8V)	--	Tested in equipment
(Alternative)	BOE	MV238***-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT LCD (power consumption: 16.9W; LED Array Voltage: 51.5V)	--	Tested in equipment
(Alternative)	LG Display	LM238WF*-**** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT LCD (power consumption: 17.76W; LED Array Voltage: 58.9V)	--	Tested in equipment
(Alternative)	TPV	TPM238WF* (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT LCD (power consumption: 15.11W; LED Array Voltage: 52.7V)	--	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI)(Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance

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(Alternative)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL E88637 and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL E56070 and tested with appliance
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL E80168 and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS] (Bayer)	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL E41613 and tested with appliance
(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL E67171 and tested with appliance
(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL E171666 and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL E230779 and tested with appliance
(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL E345434 and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL E328304 and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL E359575 and tested with appliance

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(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL E135175 and tested with appliance
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(#####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL E471190 and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL E310240 and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL E98529 and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, min. 2.0mm thickness	UL 94	UL E108538 and tested with appliance
(Alternative)	TRINSEO EUROPE GMBH (STYRON)	STYRON A-TECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL E162447 and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL E314268 and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL E103670 and tested with appliance
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL E207780 and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL E205938 and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL E177071 and tested with appliance
PCB	CHANG CHUN PLASTICS CO LTD	CCP-508	V-1 or better, min. 105°C	UL 94	UL
(Alternative)	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Switching mode power supply board: 715G7610 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Primary Switch (SW901) (Optional)	Rong Feng Industrial Co., Ltd.	RF-1003	VDE: 10(4)A, 250Vac UL: 10A, 250Vac	IEC/EN 61058-1, UL 1054	VDE, UL
(Alternative)	Solteam Electronics Co Ltd	MR-21 series	ENEC: 6A, 250Vac UL:10A, 125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	MR-21S	ENEC: 6A, 250Vac UL:10A, 125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	OR-L series, OR-P series	ENEC: 6A, 250Vac UL: 10A/125Vac, 6A/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	MR-22 series	ENEC: 12(4)A, 250Vac UL: 12A,125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Chily	3024 series	VDE:16(4)A, 250Vac UL: 15A,125/250Vac	IEC/EN 61058-1, UL 1054	VDE, UL
(Alternative)	Ningbo Yinzhou Lihe Switch Factory	RL3-4	VDE: 10(4), 250Vac UL: 16A, 125Vac	IEC/EN 61058-1, UL 1054	VDE, UL

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Fuse (F9901 in primary)	Littelfuse, Inc. Wickmann	382-series, 392	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
(Alternative)	Conquer	MET, MST, PTU	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Fuse (F901 in secondary)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
(Alternative)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C9903, C9904) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A, NS-B	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C9902) Y1 type (optional)	Walsin	AH	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	Samwha	SD	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C9901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Thermistor (NR9901)	JIANGSU XINGSHUN ELECTRONICS CO.,LTD	8D2-14	Min. 5Ω at 25°C, min. 2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 5Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R9901, R9902, R9903)	FENGHUA	RVS-06	Max. 1MΩ, min. 1/4W	--	--
(Alternative)	Interchangeable	Interchangeable	Max. 1MΩ, min. 1/4W	--	--
Current sensor resistor (R916)	Tzaiyuan	MOF2WS0R43JT52	Min. 0.39Ω, 2W	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 0.39Ω, 2W	--	--
Bridging Diode (BD9901)	LITEON	KBP208G-C	Min.500V, min.2A	--	--

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(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C901, C902)	RUBYCON	470PKZ002S	47-150µF, max. 450V, 105°C	--	--
(Alternative)	Interchangeable	Interchangeable	47-150µF, max. 450V, 105°C	--	--
Transistor (Q901)	AUK	SMK0465F	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Line Choke (L9902) (Optional)	JIANGSU CHANNELON	373G0174563H	105°C	--	--
(Alternative)	LIANFENG DONGJJIN	373G0174563J	105°C	--	--
(Alternative)	ASET	373G0174563X	105°C	--	--
(Alternative)	LIANZHEN ELECTRONICS	373G0174563Z	105°C	--	--
Transformer (T901)	PHOENIX	380GL32P547P	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	SUMITOMO BAKELITE CO.,LTD	PM-9820	Phenolic, V-0, 150 °C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B	130°C, Class B	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T901) (Alt.)	LIANFENG DONGJIN	380GL32P547J	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	SUMITOMO BAKELITE CO.,LTD	PM-9820	Phenolic, V-0, 150 °C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B	130°C, Class B	IEC 60950-1 UL 60950-1	VDE, UL
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Power Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix K **(Modelo/Model: 9P1, **9P1*******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:* I/P: 100-240V~, 50/60Hz, 1.5A; Class I ; IP20

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2015 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel (for 18.5 inch models)	CHIMEI INNOLUX	M185***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 9.85W; LED array voltage: 25.6V)	IEC 60950-1	Tested in equipment
(Alternative)	AUO	M185XTN**** (*can be 0-9, A-Z, "." or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 7.85W; LED array voltage: 21.7V)	IEC 60950-1	Tested in equipment
(Alternative)	TPV	TPM185***-**** (*can be 0-9, A-Z, "." or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 6.55W; LED array voltage: 17.4V)	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI)(Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance
(Alternative)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL E88637 and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL E56070 and tested with appliance
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL E80168 and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS] (Bayer)	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL E41613 and tested with appliance

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(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL E67171 and tested with appliance
(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL E171666 and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL E230779 and tested with appliance
(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL E345434 and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL E328304 and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL E359575 and tested with appliance
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL E135175 and tested with appliance
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL E471190 and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL E310240 and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL E98529 and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, min. 2.0mm thickness	UL 94	UL E108538 and tested with appliance

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(Alternative)	TRINSEO EUROPE GMBH (STYRON)	STYRON A-TECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL E162447 and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL E314268 and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL E103670 and tested with appliance
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL E207780 and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL E205938 and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL E177071 and tested with appliance
PCB	CHANG CHUN PLASTICS CO LTD	CCP-508	V-1 or better, min. 105°C	UL 94	UL
(Alternative)	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Heat shrinkable tube (used on metal pillar near C907 on metal enclosure type A)	DONGGUAN SALIPT CO LTD	SALIPT S-901-600, SALIPT S-HPT-600	125°C, 600V, min. 0.4mm thickness	--	UL
Switching mode power supply board: 715G7300 type A by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Fuse (F901)	Littelfuse, Inc. Wickmann	382-series, 392	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
(Alternative)	Conquer	MET, MST, PTU	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional) (on 715G7300 type A)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A, NS-B	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional) (on 715G7300 type A)	Walsin	AH	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko

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(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Thermistor (NR901)	JIANGSU XINGSHUN ELECTRONICS CO.,LTD	8D2-14	Min. 5Ω at 25°C, min. 2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 5Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R907, R908, R909)	FENGHUA	RVS-06	Max. 1MΩ, min. 1/4W	--	--
(Alternative)	Interchangeable	Interchangeable	Max. 1MΩ, min. 1/4W	--	--
Current sensor resistor (R931)	CAIZHI	MOF2WS	Min. 0.825Ω, 2W	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 0.825Ω, 2W	--	--
Bridging Diode (BD901)	LITEON	KBP208G-C	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C907 on 715G7300 type A)	KINGNICHI	PW2W470MLT1236DLR V	47-150µF, max. 450V, 105°C	--	--
(Alternative)	Interchangeable	Interchangeable	50-150µF, max. 450V, 105°C	--	--
Transistor (Q901)	AUK	SMK0465F	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Line Choke (L901) (on 715G7300 type A) (Optional)	ASET	73G-174-192-X	105°C	--	--
(Alternative)	DADON	73G-174-192-H	105°C	--	--
(Alternative)	TAICHANG	73G-174-192-S	105°C	--	--
(Alternative)	FRONTIER	73G-174-192-F	105°C	--	--
(Alternative)	LI TAI	73G-174-192-L	105°C	--	--
(Alternative)	YUVA	73G-174-192-N	105°C	--	--
(Alternative)	DARFON	73G-174-192-DN	105°C	--	--
Transformer (T902) (Alt.)	Channelon	380GL19P535H	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL

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Transformer (T902) (Alt.)	YUVA	380GL19P535N	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	TPV	S80GL19P535V	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Furukawa	TEX-E	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	LFDJ	380GL19P535J	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	PHOENIX	380GL19P535P	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B+@	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT*(c)(g)	130°C	UL510	UL
Power Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
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5 de junho de 2027
June 5, 2027

Appendix L **(Modelo/Model: AG251********, 250LM000**)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 4.5A or 3.25A, 20 Vdc, Class Ш; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2015/COR1:2016 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2004, IEC 61000-4-5: 2005, IEC 61000-4-6: 2008, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
AC/DC adapter	TPV Electronics (Fujiang) Co., Ltd	ADPC2090	Input : 100-240 V~, 50-60 Hz, 1.3 A Output: 20 Vdc, 4.5 A, SELV	IEC60950-1:2005+A1:2009 + A2:2013 EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013	CB by TUV RH (17038425 001 and 17038425 002)
Plastic Enclosure	LOTTE	VH-0810(+); VH-0890(+); NH-1017(p); VE-0812(+); NH-1000T(+)(&); BF-0677(+); BF-0675(+); BF-0670(+); GC-0700(+); GC-0750(+);HS-7000(+); SD-0150(+);NE-1030(+);HR-1360(+); HG-0760(+);LX-0951(+);LX-0957(+); VE-1890K, TP-1100(+), NH-1017T NH-1017(+), NH-1000T+, BF-0670F	HB or better	UL94	UL
Alt.)	Chi Mei	PA-757(+); PH-88HT(+)	HB or better	UL94	UL
Alt.)	Grand	D-150, D-1000A	HB or better	UL94	UL
Alt.)	TEIJIN	TN-7500(c), TN-7500F(#), MN-3600H(#), MN-3600V(#)	HB or better	UL94	UL
Alt.)	Haier	HRABS-RS; HRABS-HG; CR-3002	HB or better	UL94	UL
Alt.)	UNIC TECHNOLOGY CORP	UR-3006+ (RXX), UR-200+	HB or better	UL94	UL
Alt.)	LG	AF312T1; GN-5001TF(#); LUPOY GN-5001RF(T); LUPOY GN-5008HF(#); HF350(#); HF380(#); SE885(#); SE750(#); XG568(#); XG569(#); HF388(#); LUPOY GP-1000; LUPOY GP-1000(m)(#); LUPOY GP-1000(#), AF-342T GN-5001TF, GN-5001RF, GP-1000L	HB or better	UL94	UL
Alt.)	TEIJIN	TN-7500(c), TN-7500F(#), MN-3600H(#), MN-3600V(#)	HB or better	UL94	UL

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Alt.)	KingFa	4418; HF-606; HF-626; FRABS-518; JH960 6(M); FRHIPS-960; 5197; HIPS-5197; HIPS-4418; HIPS-3399; HIPS-CM(ee); HIPS-HG(ee); HIPS-510 (o); HIPS-550; CK-61(M) (##); RS-(hh)0; HP-126; ABS-600; ABS-122; GAR-322; GAR-332; GAR-220; H12; G360; GAR-011; CK-55(M) (##); CK-58(M) (##); GAR-011C; GAR-011(ww); CK-100, FRABS-518 RD-900, RS-900, GAR-011(L85) GAR-011(L65), GAR-011(HG6) RS-300, RS-400	HB or better	UL94	UL
Alt.)	STYROLUTION	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better	UL94	UL
Alt.)	STYRON	STYRON A-TECH 1400	HB or better	UL94	UL
Alt.)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better	UL94	UL
Alt.)	DOOSAN CORPORATION ELECTROMATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better	UL94	UL
Alt.)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	HIPS-2000; ABS-3070H	HB or better	UL94	UL
Alt.)	Basf	GP-35, GP-22	HB or better	UL94	UL
Alt.)	WISTRON	GA35	HB or better	UL94	UL
Alt.)	HINGLONG	HL-ABSPCR35/65/85	HB or better	UL94	UL
Alt.)	WOTE	2100	HB or better	UL94	UL
Alt.)	GUO HENG	YOUHO(1302)(B), YOUHO(1303)(B)	HB or better	UL94	UL
Alt.)	SABIC	C6600	HB or better	UL94	UL
Alt.)	CHIMEI	PA-756S	HB or better	UL94	UL
Alt.)	COVESTRO DEUTSCHLAND AG	FR2000, FR3005	HB or better	UL94	UL
Alt.)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better	UL94	UL
Alt.)	Interchangeable	Interchangeable	HB or better	UL94	UL
Stand	Interchangeable	Interchangeable	HB or better	UL94	UL
PCB	Interchangeable	Interchangeable	Min. V-1 105°C	UL796	UL
LCD panel (LED backlight)	AUO	M250HTN**.* (*can be 0~9, A~Z, blank for marking purpose)	All 25” TFT glass is minimum 0.4mm thickness	UL 60950-1 IEC60950-1	UL, Test in the equipment
Fuse (F981,F982)(Located on mainboard for LPS)	Littelfuse/ Wickmann	392, 382	T4AL, 250Vac	IEC 60127, UL248	VDE,UL
Alt.)	Littelfuse	0663 series	T4AL, 250Vac	IEC 60127, UL248	VDE,UL

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Alt.)	Conquer	MET,MST	T4AL, 250Vac	IEC 60127, UL248	VDE,UL
Alt.)	SAVE FUSETECH INC	SR-5 series, SS-5 series	T4AL, 250Vac	IEC 60127, UL248	VDE,UL
Alt.)	Suzhou Walter	2000, 2010 series	T4AL, 250Vac	IEC 60127, UL248	VDE,UL
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
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June 5, 2027

Appendix M (Modelo/Model: 24G2, **24G2******, 27G2, **27G2********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class Ⅰ; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012 / CISPR 32:2015/COR1:2016, CISPR 24:2010, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2004 / IEC 61000-4-4: 2012, IEC 61000-4-5: 2005 / IEC 61000-4-5 : 2014+A1:2017, IEC 61000-4-6: 2008, IEC 61000-4-6: 2008 / IEC 61000-4-6 : 2013, IEC 61000-4-11: 2004 / IEC 61000-4-11 : 2004+A1:2017

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel with LED backlight (for 27.0 inch models) (Flat)	TPV	TPM270***-****.* (*can be 0-9, A-Z or blank for marketing purpose).	27.0 inch TFT curve panel (power consumption: 29.49W; LED array voltage: 44.8V)	--	Tested in equipment
LCD Panel with LED backlight (for 23.8 inch models) (Flat)	TPV	TPM238***-****.* (*can be 0-9, A-Z or blank for marketing purpose).	23.8 inch TFT curve panel (power consumption: 16.5W; LED array voltage: 54V)	--	Tested in equipment
Plastic Enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, thickness 2.0mm min.	UL 94	UL
	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, thickness 2.0mm min.	UL 94	UL
	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, thickness 2.0mm min.	UL 94	UL
	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, thickness 2.0mm min.	UL 94	UL
	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, thickness 2.0mm min.	UL 94	UL

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	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, thickness 2.0mm min.	UL 94	UL
	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, thickness 2.0mm min.	UL 94	UL
	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, thickness 2.0mm min.	UL 94	UL
	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, thickness 2.0mm min.	UL 94	UL
	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, thickness 2.0mm min.	UL 94	UL
	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c), GA35, NC30	HB or better, thickness 2.0mm min.	UL 94	UL
	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, thickness 2.0mm min.	UL 94	UL
	GUO HENG (DONGGUAN)	YOUHO(#####)(Y)	HB or better, thickness 2.0mm min.	UL 94	UL
	HUIZHOU WOTE	2100	HB or better, thickness 2.0mm min.	UL 94	UL
	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, thickness 2.0mm min.	UL 94	UL

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	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, thickness 2.0mm min.	UL 94	UL
	STYRON	STYRON A-TECH 1200	HB or better, thickness 2.0mm min.	UL 94	UL
	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, thickness 2.0mm min.	UL 94	UL
	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, thickness 2.0mm min.	UL 94	UL
	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, thickness 2.0mm min.	UL 94	UL
	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, thickness 2.0mm min.	UL 94	UL
	CHI LIN TECHNOLOGY CO LTD	GA-1(aaa), GA-1535	HB or better, thickness 2.0mm min.	UL 94	UL
Switching Power Supply Board 715G9611 by TPV					
AC-Inlet (CN901)	Inalways Corporation Co., Ltd.	0707-1, 0711-2, 0714	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	ZhangJia Ganghuajie Electronics Co., Ltd.	SA-4S,	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	DELIKANG/ Douling	CDJ-3, CDJ-3-1	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co., Ltd.	ST-01	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	TECX	TU-301 series	10A, 250V, 70°C	IEC/ EN 60320-1	VDE
	Yueqing Hongchang	DB-14	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc. Wickmann	392, 382-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Fuse (F902 in secondary for L.P.S.)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc. Wickmann	392, 382-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C920, C921) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	TDK	CS, CD	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL

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	Murata	KH, KX	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Matsushita	NS-A, NS-B	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	SUCCESS	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
Y- Capacitor (C900) Y1 type (optional)	Walsin	AH	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Wansheng	CT7	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	TDK	CD	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Murata	KX	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Matsushita	NS-A	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	JYA-NAY	JN	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Hongming	F	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Yinan Don's	CT81	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	SUCCESS	SB, SE	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
X-Capacitor (C914) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Faratronic	MKP62	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Europtronic	MPX, MPX2	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	ENEC (Semko), UL
	Hua Jung	MKP	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Liow Gu	GS-L	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Arcotronics	R.46	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	ENEC(IMQ) UL
	EPCOS	B3292#	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di>0.4mm, int = thermal cycling 3. , ext.>8.0mm, 5000 Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40008087, UL E64380
	Everlight Electronics Co., Ltd.	EL817, EL817M UL : EL8X7 (X=1 or 2)	Di>0.5mm, int. cr=thermal cycling 3. , ext. cr>7.7mm, 3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 132249, UL E214129
	Vishay Semiconductor	TCET1103	Di>0.5mm, int. cr >6.0mm, ext. cr >7.7mm, 3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40028080, UL E76222
	Lite-on	LTV-817	Di > 0.6mm, int. cr=thermal cycling 3. , ext. cr > 8.0mm, 4800Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40015248, UL E113898
	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di>0.4mm, int. cr=thermal cycling 3. , ext. cr > 8.0mm, 5000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40008862, UL E72422
	TOSHIBA	TLP781F, TLP781	Di>0.5mm, int. cr=thermal cycling 3. , ext. cr > 8.0mm, 4800Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40021173, UL E67349
	TOSHIBA	TLP421F	Di >0.4mm, int. cr=thermal cycling 3. , ext. cr > 8.0mm, 5000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40010944, UL E67349
Line Choke (L901) (Optional)	CHANNELON	373G0174577H	105 °C	--	Tested in equipment
	LDFJ	373G0174577J	105 °C	--	Tested in equipment
	ASET	373G0174577X	105 °C	--	Tested in equipment
Transformer (T901)	Phoenix	380GL19P0170P	Class B	IEC/EN 60950-1	Tested in equipment

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Alt.	LIANFENG DONGJJIN	380GL19P0170J	Class B	IEC/EN 60950-1	Tested in equipment
Alt.	TAICHANG	380GL19P0170S	Class B	IEC/EN 60950-1	Tested in equipment
Alt.	LITAI	380GL19P0170L	Class B	IEC/EN 60950-1	Tested in equipment
Alt.	YUVA	80GL19P-17-N	Class B	IEC/EN 60950-1	Tested in equipment
-Bobbin	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, min. 0.45mm thick	UL94	UL
Alt.	GREAT LEOFLON INDUSTRIAL CO., LTD	TRW(B)	V-0, 150°C, min. 0.45mm thick	UL94	UL
Alt.	CHANG CHUN PLASTICS CO., LTD.	T200NA	V-0, 150°C, min. 0.45mm thick	UL94	UL
-Triple insulation wire	SUZHOU VDE YUSHENG ELECTRONIC CO LTD	TIW-B	Reinforced insulation, 130°C	IEC/EN 60950-1, UL 2353	VDE, UL
Alt.	Cosmolink Co Ltd	TIW-M	Reinforced insulation, 130°C	IEC/EN 60950-1, UL 2353	VDE, UL
-Insulation tape	JingJiang YaHua Pressure Sensitive Glue Co., Ltd	CT	PET film insulating tape, 130°C	UL510	UL
Alt.	SYMBIO INC	35660Y*(%)	PET film insulating tape, 130°C	UL510	UL
-Tube	GREAT HOLDING INDUSTRIAL CO., LTD.	TFL	PTFE, 200°C, VW-1	UL224	UL
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix N **(Modelo/Model: 323FCX, 323QCX, **323********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012 / CISPR 32:2015/COR1:2016 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5 : 2014+A1:2017, IEC 61000-4-6: 2013, IEC 61000-4-8:2009, IEC 61000-4-11 : 2004+A1:2017

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPM315WF* (*can be 0-9, A-Z or blank for marketing purpose).	31.5 inch TFT LCD (power consumption: 36.7W; LED array voltage: 42V)	IEC 60950-1	Tested in equipment
(Alternative)	TPV	TPM315WQ* (*can be 0-9, A-Z or blank for marketing purpose).	31.5 inch TFT LCD (power consumption: 48.84W; LED array voltage: 42V)	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI) (Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance
(Alternative)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL E88637 and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL E56070 and tested with appliance
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL E80168 and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS] (Bayer)	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL E41613 and tested with appliance
(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL E67171 and tested with appliance

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(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL E171666 and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL E230779 and tested with appliance
(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL E345434 and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL E328304 and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL E359575 and tested with appliance
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL E135175 and tested with appliance
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(#####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL E471190 and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL E310240 and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL E98529 and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065, GP-22	HB or better, min. 2.0mm thickness	UL 94	UL E108538 and tested with appliance
(Alternative)	TRINSEO EUROPE GMBH (STYRON)	STYRON ATECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL E162447 and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL E314268 and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTROMATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL E103670 and tested with appliance

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(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL E207780 and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL E205938 and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL E177071 and tested with appliance
AC Inlet	Solteam	ST-01, SC04	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Hongchang	DB-14-4, DB-14-05	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Primary input wire (L/N)	Interchangeable	Interchangeable	Min. 20AWG, 600V, VW-1, 105°C	UL 758	UL
Earthing wire	Interchangeable	Interchangeable	Min. 18AWG, 600V, VW-1, 105°C	UL 758	UL
LED light source (on rear enclosure)	Everlight Electronics Co., Ltd.	5050 RGC+IC	DC 5V, in compliance with Exempt Group	IEC 62471:2006 EN 62471:2008	SGS (Report No. OC-2019-30025)
Fuse (F701, F702 on DC input of main board 715G9960 for L.P.S.)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	TE5 400 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Conquer	MET series, MST series, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Switching mode power supply board: 715GA321 by TPV					
Primary connector (CN901)	J.S.T	VH series	7 A, 250 Vac	IEC/EN 61984	VDE 40012096 Tested with appliance
(Alternative)	J.S.T	VT series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	M3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	W7913 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Pontronics	3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Jowle	A3963 series	7 A, 250 Vac	--	Tested with appliance

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Fuse (F9901)	Littelfuse, Inc. Wickmann	382-series, 392	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3	VDE
(Alternative)	Littelfuse, Inc.	TE5 400	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Conquer	MET, MST, PTU	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
Y- Capacitor (C9915, C9916) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C9917, C9919) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C9911) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	Murata	KX	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C9918, C9920) (optional)	Ultra Tech Xiphi	HQX	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	EPCOS	B3292#	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U9102, U9401)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F, TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Discharge IC (U9104)	Leadtrend Technology Corp.	LD5760GR	IP: 100-250V~, 47-63Hz	IEC 60950-1+A1+A2	Nemko CB (Ref. Certif. No. NO84030)
Line Choke (L9901, L9902) (Optional)	CHANNELON	373G0174575H	105°C	--	--
(Alternative)	LIANZHEN	373G0174575Z	105°C	--	--
PFC Choke (L9801)	YUVA	373G0174315N	105°C	--	--
(Alternative)	ASET	373G0174315X	105°C	--	--
(Alternative)	CHENPING	373G0174315CP	105°C	--	--

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Transformer(T9102)(Alternative)	TPV	380GL32P530H	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
- Triple Wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, UL 2353	VDE, UL
Transformer (T9102) (Alternative)	YUVA	380GL32P530N	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
- Triple Wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, UL 2353	VDE, UL
Bleeder Resistor (R9165)	Interchangeable	Interchangeable	Max. 10kΩ, min. 1/4W	--	--
Bridging Diode (BD9901)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C9814, C9815)	Interchangeable	Interchangeable	47µF, max. 450V, 105°C	--	--
Transistor (Q9801, Q9101, Q9102)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Thermistor (TH9903, TH9904)	Interchangeable	Interchangeable	Min. 3Ω at 25°C, min. 2A	--	--
Switching mode power supply board: 715GA451 by TPV					
Primary connector (CN901)	J.S.T	VH series	7 A, 250 Vac	IEC/EN 61984	VDE 40012096 Tested with appliance
(Alternative)	J.S.T	VT series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	M3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	W7913 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Pontronics	3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Jowle	A3963 series	7 A, 250 Vac	--	Tested with appliance
Fuse (F901 in primary)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE
(Alternative)	Littelfuse Phils. Inc.	TE5 400 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Conquer	MET series, MST series, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL

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(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
Fuse (F902 in secondary for L.P.S.)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	TE5 400 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Conquer	MET series, MST series, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
Y- Capacitor (C920, C921) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN, JY	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C900) Y1 type (optional)	Walsin	AH	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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X-Capacitor (X1 or X2 type) (C914) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, FI, UL
(Alternative)	Europtronic	MPX2	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	EPCOS	B3292#	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics	R.46	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	FARAD	PXK	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F, TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Line Choke (L901) (optional)	CHANNELON	73G174-241-H	105°C	--	--
(Alternative)	YUVA	73G174-241-N	105°C	--	--
(Alternative)	ASET	73G174-241-X	105°C	--	--
(Alternative)	CHENPING	73G174-241-CP	105°C	--	--
Transformer (T901)	Phoenix	380GL19P0170P	Class B	IEC/EN 60950-1	Tested with appliance
(Alternative)	LIANFENG DONGJJIN	380GL19P0170J	Class B	IEC/EN 60950-1	Tested with appliance
(Alternative)	TAICHANG	380GL19P0170S	Class B	IEC/EN 60950-1	Tested with appliance
(Alternative)	LITAI	380GL19P0170L	Class B	IEC/EN 60950-1	Tested with appliance
- Bobbin	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, min. 0.45mm thick	UL94	UL
(Alternative)	GREAT LEOFLON INDUSTRIAL CO., LTD	TRW(B)	V-0, 150°C, min. 0.45mm thick	UL94	UL
(Alternative)	CHANG CHUN PLASTICS CO., LTD.	T200NA	V-0, 150°C, min. 0.45mm thick	UL94	UL
- Triple insulation wire	SUZHOU VDE YUSHENG ELECTRONIC CO LTD	TIW-B	Reinforced insulation, 130°C	IEC/EN 60950-1, UL 2353	VDE, UL

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(Alternative)	Cosmolink Co Ltd	TIW-M	Reinforced insulation, 130°C	IEC/EN 60950-1, UL 2353	VDE, UL
- Insulation tape	JingJiang YaHua Pressure Sensitive Glue Co., Ltd	CT	PET film insulating tape, 130°C	UL510	UL
(Alternative)	SYMBIO INC	35660Y*(%)	PET film insulating tape, 130°C	UL510	UL
- Tube	GREAT HOLDING INDUSTRIAL CO., LTD.	TFL	PTFE, 200°C, VW-1	UL224	UL
Thermistor (TH901)	Interchangeable	Interchangeable	Min. 3Ω at 25°C, min. 5A	--	--
Bleeder Resistor (R916, R917, R918)	Interchangeable	Interchangeable	Max. 680kΩ, min. 1/4W	--	--
Bridging Diode (BD901, BD902)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C902, C903)	Interchangeable	Interchangeable	50-150µF, max. 450V, 105°C	--	--
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix O **(Modelo/Model: 22P2, 22P2********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class Ⅰ; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012 / CISPR 32:2015/COR1:2016, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5 : 2014+A1:2017, IEC 61000-4-6: 2013, IEC 61000-4-8:2009, IEC 61000-4-11 : 2004+A1:2017

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPM215*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 12.42W; LED array voltage: 47.6V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	H*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 19.4W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	M*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 10.9W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215W**-**** (*can be 0-9, A-Z or blank for Marketing purpose).	21.5 inch TFT LCD (power consumption: 16.3W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 14.25W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 18.3W; LED array voltage: 34.1V)	IEC 60950-1	Tested in equipment
(Alternative)	INNOLUX	INNOLUX M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.53W; LED array voltage: 36.66V)	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.21W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 13.62W; LED array voltage: 48.2V)	IEC 60950-1	Tested in equipment
(Alternative)	AUO	*215H****.* (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.55W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI) (Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance
(Alternative)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL E88637 and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL E56070 and tested with appliance

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(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL E80168 and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS] (Bayer)	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL E41613 and tested with appliance
(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL E67171 and tested with appliance
(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL E171666 and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL E230779 and tested with appliance
(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL E345434 and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL E328304 and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL E359575 and tested with appliance
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL E135175 and tested with appliance

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(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL E471190 and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL E310240 and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL E98529 and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065, GP-22	HB or better, min. 2.0mm thickness	UL 94	UL E108538 and tested with appliance
(Alternative)	TRINSEO EUROPE GMBH (STYRON)	STYRON ATECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL E162447 and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL E314268 and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTROMATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL E103670 and tested with appliance
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL E207780 and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL E205938 and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL E177071 and tested with appliance
Switching mode power supply board: 715G7300 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Fuse (F901)	Littelfuse, Inc. Wickmann	382-series, 392	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.)	Littelfus, Inc.	TE5 400	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
Alt.)	Conquer	MET, MST, PTU	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.)	Cooper Bussmann	SR-5, SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL

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Alt.)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Matsushita	NS-A, NS-B	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	JYA-NAY	JN	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Matsushita	NS-A	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Success	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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X-Capacitor (X1 or X2 type) (C901)(optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Europtronic	MPX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Europtronic	MPX2	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Arcotronics (KEMET)	R.46	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC, UL
Alt.)	TDK	B3292	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Farad	PXK	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Alt.)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Alt.)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Alt.)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
Alt.)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
Alt.)	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
Alt.)	TOSHIBA	TLP781F, TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Alt.)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Line Choke (L901)(Optional)	ASET	73G-174-192-X	105°C	--	--
Alt.)	DADON	73G-174-192-H	105°C	--	--
Alt.)	TAICHANG	73G-174-192-S	105°C	--	--
Alt.)	FRONTIER	73G-174-192-F	105°C	--	--
Alt.)	LI TAI	73G-174-192-L	105°C	--	--
Alt.)	YUVA	73G-174-192-N	105°C	--	--
Alt.)	DARFON	73G-174-192- DN	105°C	--	--
Transformer (T902) (Alt.)	Channelon	380GL19P535H	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Transformer (T902) (Alt.)	YUVA	380GL19P535N	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	TPV	S80GL19P535V	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Furukawa	TEX-E	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	LFDJ	380GL19P535J	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	PHOENIX	380GL19P535P	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B+@	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT*(c)(g)	130°C	UL510	UL
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix P (Modelo/Model: 27B1,27B1HM,27B1******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 19Vdc, 1.31A, Class III, IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2012 Class B, CISPR 24:2010, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel with LED backlight type (for 27 inch models)	TPV	TPM270W**-******** (* can be 0~9, A~Z, "." Or blank)	27 inch TFT LCD (power consumption: 20.9 W; LED array voltage: 54V	--	Tested in equipment
(Alternative)	BOE	MV270F**-*** (* can be 0~9, A~Z, "." or blank)	27 inch TFT LCD (power consumption: 10.6 W; LED array voltage: 59V	--	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M270HGE-*** (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 22.72W; LED Array Voltage: 60V	--	Tested in equipment
(Alternative)	SAMSUNG	LTM270HP** (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 21.3W; LED Array Voltage: 47.0V	--	Tested in equipment
(Alternative)	LG Display	LM270WQ* (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 24.1W; LED Array Voltage: 54.7V	--	Tested in equipment
(Alternative)	INNOLUX	M270K**-*** (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 27.9W; LED Array Voltage: 36.3V	--	Tested in equipment
(Alternative)	L&T	LM270W**-**** (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 14.75W; LED Array Voltage: 47.3V	--	Tested in equipment
Enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E115797)
(Alternative)	GRAND PACIFIC PETROCHEMIC AL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E88637)
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E56070)
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E80168)
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E41613)

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(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E67171)
(Alternative)	GRAND PACIFIC PETROCHEMIC AL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529, E244324)
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E345434)
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E73656)
(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E171666)
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E310240)
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
(Alternative)	HUIZHOU WOTE	2100	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529)
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E108538)
(Alternative)	STYRON	STYRON A- TECH 1200	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E162447)
(Alternative)	TOTAL PETROCHEMIC ALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E314268)

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(Alternative)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E103670)
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(V S), C6600E (VS)(X)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E207780)
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E205938)
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E177071)
Power Adapter	L&T	STK025-19131T	IP: 100-240 Vac, 50-60 Hz, 1.3A. OP: 19Vdc, 1.31A, 40˚C, Class I, 5000m Comply with SELV and L.P.S.	IEC 62368-1: 2014	CB by TUV SUD (Certificate No. SG PSB-IV-02436M1)
(Alternative)	TPV	ADPC1925EX	IP: 100-240 Vac, 50-60 Hz, 1.3A. OP: 19Vdc, 1.31A, LPS, 40 ˚C , Class I, altitude operating: 5000 m	IEC 60950-1: 2005+A1	CB by Nemko (certificate No. NO83042)
PCB	FUJIAN MILKY-WAY PRINTED CIRCUIT BOARD INDUSTRIAL CO LTD	MW-2, MW-CEM1	Min. V-1 or better, min. 105°C	UL 94, UL 796	UL (E168066)
(Alternative)	Interchangeable	Interchangeable	Min. V-1 or better, min. 105°C	UL 94, UL 796	UL
Cord set	Interchangeable	Interchangeable	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix Q (Modelo/Model: U27P2,27P2********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A, Class I, IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (ed.2); am1, am2, CISPR 22: 2008, CISPR 24: 2010 + A1: 2015, CISPR 32: 2015+A1:2019, Class B, IEC 61000-3-2: 2018, Class D, IEC 61000-3-3: 2013 + A1: 2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+ A1: 2017, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Componente/Component	Fabricante/ Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
LCD Panel	TPV	TPM270WF*-****** (*can be 0-9, A-Z or blank for marketing purpose).	27 inch TFT LCD (power consumption: 21.32W; LED array voltage: 51V)	IEC 60950-1	Tested in equipment
(Alternative)	PANDA	LM270**** (*can be 0-9, A-Z or blank for marketing purpose).	27 inch TFT LCD (power consumption: 27.08W; LED array voltage: 51V)	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI) (Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance
(Alternative)	GRAND PACIFIC PETROCHEMIC AL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL (E88637) and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL (E56070) and tested with appliance
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL (E80168) and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL (E41613) and tested with appliance

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(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL (E67171) and tested with appliance
(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL (E171666) and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL (E230779) and tested with appliance

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(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL (E345434) and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL (E328304) and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL (E359575) and tested with appliance
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL (E135175) and tested with appliance
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL (E471190) and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL (E135175) and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL (E98529) and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, min. 2.0mm thickness	UL 94	UL (E108538) and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	STYRON A- TECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL (E162447) and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL (E314268) and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL (E103670) and tested with appliance
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(V S), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL (E207780) and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL (E205938) and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL (E177071) and tested with appliance
Mylar sheet	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	SICHUAN LONGHUA FILM CO LTD	PC-770F, PC-770F-A, PC-770	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1860B, KLX FRPC-1870B	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL

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(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECOC, DFR117ECOB	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	JINGMEN GORUN TECHNOLOGY CO LTD	HF70	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP BK-10	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	KUNSHAN DOBESTY OPTOELECTRONIC MATERIALS CO LTD	PC9842B	min. 0.4mm, thickness, min. V-1, 80°C	UL 94	UL
(Alternative)	SHENZHEN TEESUN TECHNOLOGY CO LTD	FR370, FR370F, FE383	min. 0.4mm, thickness, min. V-1, 80°C	UL 94	UL
PCB	Interchangeable	Interchangeable	Min. V-1 or better, min. 130°C	UL 94, UL 796	UL
Cord set	Interchangeable	Interchangeable	----	NBR 14136, NBR NM 60884-1	INMETRO
Switching mode power supply board: 715GB227 by TPV (to be used together with mainboard 715GA732)					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	ENEC, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D, SA-4S 9	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14 Series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Power switch (SW901) (optional)	Rong Feng Industrial Co., Ltd.	RF-1003	VDE: 10(4)A, 250Vac UL: 10A, 250Vac	IEC/EN 61058-1, UL 1054	VDE, UL
(Alternative)	Solteam Electronics Co Ltd	MR-21 series	ENEC: 6A, 250Vac UL:10A, 125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	MR-21S	ENEC: 6A, 250Vac UL:10A, 125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	OR-L series, OR-P series	ENEC: 6A, 250Vac UL: 10A/125Vac, 6A/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL

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(Alternative)	Solteam Electronics Co Ltd	MR-22 series	ENEC: 12(4)A, 250Vac UL: 12A,125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Chily	3024 series	VDE:16(4)A, 250Vac UL: 15A,125/250Vac	IEC/EN 61058-1, UL 1054	VDE, UL
(Alternative)	Ningbo Yinzhou Lihe Switch Factory	RL3-4	VDE: 10(4), 250Vac UL: 16A, 125Vac	IEC/EN 61058-1, UL 1054	VDE, UL
Fuse (F901)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3	VDE
(Alternative)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Fuse (F902) (sec. for LPS)	Littelfuse, Inc. Wickmann	382-series, 392	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3	VDE
(Alternative)	Conquer	MET MST-series, PTU	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C901, C902) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	Hongming	F	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C903, C922) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL

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(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1 PS2561L-1 PS2561L1-1 PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Line Choke (L901A) (Optional) (For power board 715GB227 type A)	CHANNELON	373G0174563H	105°C	--	--
(Alternative)	LDFJ	373G0174563J	105°C	--	--
(Alternative)	LZ	373G0174563Z	105°C	--	--
Line Choke (L901A) (Optional) (For power board 715GB227 type B)	JIANGSU CHANNELON	73G174-65-H	105 °C	--	--
(Alternative)	YUVA	73G174-65-N	105 °C	--	--
(Alternative)	TPV	S73G17465V	105 °C	--	--
(Alternative)	Xiamen TDK	73G174-65-T	105 °C	--	--
(Alternative)	ASET	73G174-65-X	105 °C	--	--

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(Alternative)	TAICHANG	73G174-65-S	105 °C	--	--
Transformer (T901) ((Alternative)	CHANNELON	380GL32P559H	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	CHANG CHUN	T200NA	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Transformer (T901) ((Alternative)	LFDJ	380GL32P559J	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	CHANG CHUN	T200NA	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Transformer (T901) ((Alternative)	PHOENIX	380GL32P559P	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9750	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	YUSHENG	TIW-B(x)	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Bleeder Resistor (R901, R902, R903, R933, R934, R935)	Interchangeable	Interchangeable	Max. 1.3MΩ, min. 1/4W	--	--
Current sensor resistor (R916)	Interchangeable	Interchangeable	Min. 0.33Ω, 2W	--	--
Bridging Diode (BD901, BD902) (Optional)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C904)	Interchangeable	Interchangeable	45-150µF, max. 450V, 105°C	--	--

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix R (Modelo/Model: 25G3ZM, 25G3******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A, Class I, IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (ed.2); am1, am2, CISPR 22: 2008, CISPR 24: 2010 + A1: 2015, CISPR 32: 2015+A1:2019, Class B, IEC 61000-3-2: 2018, Class D, IEC 61000-3-3: 2013 + A1: 2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+ A1: 2017, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Componente/Component	Fabricante/ Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
LCD Panel	AUO	M250H****.* (*can be 0-9, A-Z or blank for marketing purpose).	24.5 inch TFT LCD (power consumption: 16.82W; LED array voltage: 51.7V)	--	Tested in equipment
Alt.)	LG Display	LM245W** (*can be 0-9, A-Z or blank for marketing purpose).	24.5 inch TFT LCD (power consumption: 21.8W; LED array voltage: 52.2V)	--	Tested in equipment
Alt.)	TPV	TPM245W**-****** (*can be 0-9, A-Z or blank for marketing purpose).	24.5 inch TFT LCD (power consumption: 17.2W; LED array voltage: 54.0V)	--	Tested in equipment
Tube used to wrap metal chassis pillar	JIANGSU PEARL SILICONE RUBBER MATERIAL CO LTD	TMC-8750A series, HD-87	V-0, 150°C, min. thickness 0.6mm	UL 94, UL746	UL E231325 and tested with appliance
Alt.)	SHENZHENSHI SENMUSI TECHNOLOGY CO LTD	SMS	V-0, 150°C, min. thickness 0.6mm	UL 94, UL746	UL E477535 and tested with appliance
Switching mode power supply board: 715GC023					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC16/FI/20/10036, UL E200241
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40003610, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 9, SA-4S 6	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 7	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4D	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	TUV R 50274698 0001-0002, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40028101, UL E102641
Alt.)	Kunshan DLK Electronics	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40010513, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40015913, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-7, CDJ-7 1	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	SE-ENEC-2001967, UL E317189
Alt.)	TECX	TU-301 series	10A, 250Vac	ANSI/UL60320-1	UL E220004

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Alt.)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14-05, DB-14-15, DB-14-07, DB-14-11-L, DB-14-14-L, DB-14-23	10A, 250Vac	IEC/EN 60321-1, ANSI/UL60320-1	VDE 40028645, UL E327347
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0714-1, 0711-2	10A, 250Vac	ANSI/UL60320-1	UL E94191
Alt.)	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC, UL, TUV mark
Fuse (F901) on primary	Littelfuse Inc.	382	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R50310551 0001-0004, UL E10480
Alt.)	Conquer	MET	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017157, UL E82636
Alt.)	Conquer	MST	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R503717560001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018790, UL E220181
Alt.)	Walter	2010 Serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T4AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T4AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092

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Alt.)	Walter	ICP-Series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T4AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003
Fuse (F902, F903) on secondary for L.P.S.	Littelfuse Inc.	382	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018250, UL E67006
Alt.)	Littelfuse Inc.	392	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50310551 0001-0004, UL E10480
Alt.)	Conquer	MET	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017155, UL E82636
Alt.)	Conquer	MST	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 503717560001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40020046, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018787, UL E220181
Alt.)	Walter	2010 Serie(s)	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092

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Alt.)	Walter	ICP-Series	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003
Y- Capacitor (C920, C921) Y1 or Y2 type (optional)	Walsin	AC	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280

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Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C900) Y1 type (optional)	Walsin	AH	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 3300pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C914) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.47µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596

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Alt.)	Europtronic	MPX	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.47µF, Min. 275Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT9700014 1, UL E97797
Alt.)	TDK	B3292	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.47µF, Min. 275Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	Jianghao	CBB62B	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123 (UL), PC123 Option Y (VDE)	Di more than 0.4mm, int = thermal cycling test, ext. more than 8.0mm, 5000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40008087, UL E64380
Alt.)	Vishay Semiconductor	TCET1103-3034	Di more than 0.5mm, int = thermal cycling test, ext. cr more than 7.7mm, 4000Vac, 100°C.	EN 60747-5-5	VDE 40028080
Alt.)	Everlight Electronics Co., Ltd.	EL817	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 8.0mm, 4000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 132249, UL E214129
Alt.)	Everlight Electronics Co., Ltd.	EL817M (VDE), EL817 (UL)	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 8.0mm, 4000Vac, 110°C.	IEC/EN 60747-5-5	VDE 132249, UL 214129
Alt.)	TOSHIBA	TLP781F, TLP781	Di more than 0.5mm, int. cr =thermal cycling test, ext. cr more than 6.5mm, 4800Vac, 115°C.	EN 60747-5-5, ANSI/UL 1577	VDE 40021173, UL E67349
Alt.)	TOSHIBA	TLP421F	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.0mm, 5000Vac, 110°C.	IEC/EN 60747-5-5	VDE 40010944
Alt.)	RENESAS ELECTRONICS CORPORATION	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, 5000Vac, 100°C.	EN 60747-5-5, ANSI/UL 1577	VDE 40008862, UL E72422
Alt.)	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.1mm, 4000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40028391, UL E214129
Alt.)	Lite-On	LTV-817	Di more than 0.6mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, 4800Vac, 115°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40015248, UL E113898
Alt.)	Interchangeable	Interchangeable	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, min. 4000Vac, min. 100°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE, UL
Line Choke (L901) (Optional)	ASET	373G0174558X	130°C	--	--
Alt.)	LIANFENG	373G0174558J	130°C	--	--

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Alt.)	Taichang	373G0174558S	130°C	--	--
Transformer (T901)	PHOENIX	380GL19P0170P	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E332529, VDE40033527
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	LIANFENG	380GL19P0170J	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	TPV	80GL19P-17-N	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	SYMBIO INC	NO. 35660Y*d	130°C	UL 510	UL E50292
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	Taichang	380GL19P0170S	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	GREAT LEOFLON INDUSTRIAL CO.□LTD	TRW(B)	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E211989, VDE 136581
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	LI TAI	380GL19P0170L	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	CHANG CHUN PLASTICS CO. LTD	200NA	Phenolic, V-0, 150°C	UL94	UL E59481
-Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
- Insulation tape (Alt.)	SYMBIO INC	NO. 35660Y*d	130°C	UL 510	UL E50292

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-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Rating information of components which are not critical components on power board 715GC023					
P.C.B	Interchangeable	Interchangeable	V-1 or better Min. 130°C.	UL 796	UL
Current sensing Resistor (R919)	Interchangeable	Interchangeable	Min. 0.3Ω, min. 1/10W	--	--
Thermistor (TH901)	Interchangeable	Interchangeable	Min. 3Ω at 25°C, min. 2A	--	--
Bridging Diode (BD901, BD902)	Interchangeable	Interchangeable	Min.600V, min.2.0A	--	--
Ripple Capacitor (C902, C903)	Interchangeable	Interchangeable	47-180μF, max. 450V, 105°C	--	--
Bleeder Resistor (R916, R917, R918)	Interchangeable	Interchangeable	Each Max. 680KΩ, Min.1/4W	--	--
Transistor (Q901)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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June 6, 2024

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June 5, 2027

Appendix S **(Modelo/Model: **24B30********, **24B35********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 19VDC, 1.31A; Class III; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013; CISPR 32:2015+A1:2019, CISPR 35: 2016, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6:2013/COR1:2015, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
External power supply	TPV Electronics (Fujian) Co., Ltd.	ADPC1925EX	Input: 100-240 V AC, 50 - 60 Hz, 1,3 A, Class II; Output: 19,0 V DC, 1,31 A, 25,0 W, Tma = 40 °C, PS2, Altitude: 5000m	IEC 62368-1:2014; EN 62368-1:2014 + A11:2017	Nemko (CB certificate No. NO106527; CB report No. 373441)
Alt.	Ten Pao Industrial Co., Ltd.	S025ANP1900131	input: 100-240 V AC, 50 /60 Hz, 0,6 A, Class II; Output: 19,0 V DC, 1,31 A, 25,0 W, Tma = 40 °C, Outputs comply with LPS, Altitude: 5000m	IEC 62368-1:2018	TUV Rheinland (CB Cert.: JPTUV-149645, report No.: CN23WCFE001)
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	V-0, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, Min. 60 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, Min. 60 °C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5mm, 130 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0mm, Min. 60 °C	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E88637)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50 °C	ANSI/UL 94	UL (E314268)

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Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	V-2 or Better, Min. thickness: 0,75 mm, 60 °C	ANSI/UL 94	UL (E207780)
Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##)	HB or Better, Min. thickness: 1,0 mm, 50 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(II)	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee)	HB or Better, Min. thickness: 1,3 mm, 50 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35) (a), UR-3006+(R90) (a), UR-3006+(RXX) (a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG(+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR35/65/85	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E345434)

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Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(####)(Y), YOUHO13(##)(YY)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E471190)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO.,LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E514505)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO., LTD	Ecorex® RN - +(R #)	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H(#)	HB or Better, Min. thickness: 0,45 mm, 80 °C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60 °C	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125 °C	ANSI/UL 94	UL (E238753)
Alt.	Interchangeable	Interchangeable	HB or Better, Min. thickness: 0,45 mm, Min. 50 °C	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	Min. V-1, 105 °C	UL 796	UL
LCD Panel	TPV	TPM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	TPV	TPT238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	AUO	M238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	AUO	LM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	AUO	P238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	L&T	LM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	LGD	LM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	INNOLUX	M238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	PANDA	LM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	BOE	MV238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	SHARP	LQ238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	SAMSUNG	LTM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	BOE	ME238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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Appendix T **(Modelo/Model: 27G2E1, 27G2********, C27G2********, C*27G2********, Q27G2********, U27G2********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2015 + A1:2019 Class B, CISPR 35:2016, IEC 61000-3-2:2018, IEC 61000-3-3: 2013 + A1:2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11 : 2020

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 oC	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	V-0, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80 oC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, Min. 60 oC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105 oC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60 oC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, Min. 60 oC	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6mm, 60 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6mm, 50 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5mm, 130 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0mm, Min. 60 oC	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E88637)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50 oC	ANSI/UL 94	UL (E314268)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	V-2 or Better, Min. thickness: 0,75 mm, 60 oC	ANSI/UL 94	UL (E207780)
Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##),	HB or Better, Min. thickness: 1,0 mm, 50 oC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(II)	HB or Better, Min. thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee)	HB or Better, Min. thickness: 1,3 mm, 50 oC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E171666)

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60 oC	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35) (a), UR-3006+(R90) (a), UR-3006+(RXX) (a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG(+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 50 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50 oC	ANSI/UL 94	UL (E115797)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR35/65/85	HB or Better, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E345434)
Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(#####)(Y), YOUHO13(##)(YY)	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E471190)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO.,LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E514505)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO., LTD	Ecorex® RN - +(R #)	HB or Better, Min. thickness: 0,8 mm, 60 oC	ANSI/UL 94	UL (E514505)

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Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H(#)	HB or Better, Min. thickness: 0,45 mm, 80 oC	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60 oC	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125 oC	ANSI/UL 94	UL (E238753)
Alt.	Interchangeable	Interchangeable	HB or Better, Min. thickness: 0,45 mm, Min. 50 oC	ANSI/UL 94	UL
Internal metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 0,5 mm	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Base stand (optional)	LOTTE CHEMICAL CORPORATION	SD-0150	HB or Better, thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	Interchangeable	Interchangeable	HB or Better, thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	V-1 or better, Min. 130 oC	UL 796	UL
Insulation Sheet (between power board and LCD panel or between power board and metal cover or metal enclosure to cover the openings)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	Polycarbonate, min. thickness: 0,4mm, V-0, 80 oC	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	Polycarbonate, min. thickness: 0,4 mm, V-0, 110 oC	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	Polycarbonate, min. thickness: 0,4 mm, V-0, 130 oC	ANSI/UL 94	UL (E199019)
Alt.	Sichuan Longhua Film Co Ltd	PC-770, PC-770 A, PC-870 A, PC-770-60B, PC-770-60B-A, PC-770-63B, PC-770-63B-A, PC-770-65B, PC-770-65B-A, PC-770-83, PC-770-83B, PC-770-83F, PC-770F, PC-770F-A	Polycarbonate, min. thickness: 0,4mm, V-0, 80 oC	ANSI/UL 94	UL (E254551)
Alt.	KunShan Dobesty Optoelectronic Materials Co Ltd	PC9821B, PC9832B, PC9842B, DB98HD, DB98	Polycarbonate, min. thickness: 0,4mm, V-0, 80 oC	ANSI/UL 94	UL (E339070)
Alt.	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	Polycarbonate, min. thickness: 0,4mm, V-0, 80 oC	ANSI/UL 94	UL (E249605)
Alt.	JINGMEN GORUN TECHNOLOGY CO LTD	HF70, HE70(x)(#)	Polycarbonate, thickness: 0,40 mm min. V-0, 80 oC	ANSI/UL 94	UL (E305163)

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Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F TS-FR383H, TS-FR360H	Polycarbonate, thickness: 0,40 mm min. V-0, 80 oC	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR1365, TS-FR1363, TS-FR1360, TS-FR1362, TS-FR160Y, TS-FR1370F, TS-FR1370, TS-FR1383, TS-FR1370-32, TS-FR1383-13	Polycarbonate, thickness: 0,40 mm min. V-0, 125 oC	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	Polycarbonate, thickness: 0,4 mm min. V-0, 125 oC	ANSI/UL 94	UL (E357515)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-870BF, KLX FRPC-870BH, KLX FRPC-870BFH, KLX FRPC-83B, KLX FRPC-83, KLX FRPC-F70, KLX FRPC-700B, KLX FRPC-700BF, KLX FRPC-60, KLX FRPC-60H, KLX FRPC-63, KLX FRPC-63H, KLX FRPC-65, KLX FRPC-65H, KLX FRPC-1870B	Polycarbonate, thickness: 0,4 mm min. V-0, 80 oC	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1860, KLX FRPC-1860B, KLX FRPC-1860-83, KLX FRPC-1860-83B, KLX FRPC-1860-1, KLX FRPC-1860-NTC, KLX FRPC-1860B-NTC, KLX FRPC-1860B-3, KLX FRPC-1870B-K, KLX FRPC-1860B-HY, KLX FRPC-1860-HY, KLX FRPC-1860B-K, KLX FRPC-1860-K, KLX FRPC-1860W	Polycarbonate, thickness: 0,4 mm min. V-0, 80 oC	ANSI/UL 94	UL (E315185)

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Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1880, KLX FRPC-1880B, KLX FRPC-1880-83, KLX FRPC-1880-83B, KLX FRPC-1880-1, KLX FRPC-1880B-1, KLX FRPC-1880-2, KLX FRPC-1880B-2, KLX FRPC-1880-3, KLX FRPC-1880B-3, KLX FRPC-1880-NTC, KLX FRPC-1880B-NTC, KLX FRPC-1880B-HY, KLX FRPC-1880-HY, KLX FRPC-1880B-K, KLX FRPC-1880-K, KLX FRPC-1860-YM, KLX FRPC-1860B-YM, KLX FRPC-1880-YM, KLX FRPC-1880B-YM, KLX FRPC-1880W, KLX FRPC-1880W-1, KLX FRPC-1860B-KS, KLX FRPC-1860-KS, KLX FRPC-1880-KS, KLX FRPC-1880B-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 125 oC	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP BK-10-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 110 oC	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1890B,KLX FRPC-1890, KLX FRPC-1890-83, KLX FRPC-1890-83B, KLX FRPC-1890-1, KLX FRPC-1890B-1, KLX FRPC-1890-2, KLX FRPC-1890B-2,KLX FRPC-1890B-2, KLX FRPC-1890-3, KLX FRPC-1890B-3, KLX FRPC-1890-NTC, KLX FRPC-1890B-NTC, KLX FRPC-1890B-HY, KLX FRPC-1890-HY, KLX FRPC-1890B-K, KLX FRPC-1890-K, KLX FRPC-1890-YM, KLX FRPC-1890B-YM KLX FRPC-1890W, KLX FRPC-1890W-1, KLX FRPC-1890B-KS, KLX FRPC-1890-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 115 oC	ANSI/UL 94	UL (E315185)
Alt.	NANTONG HUAPU PHOTOELECTRIC MATERIAL CO., LTD	HPC-EFR87X	Polycarbonate, thickness: 0,4 mm min. V-0, 80 oC	ANSI/UL 94	UL (E508063)
Alt.	Interchangeable	Interchangeable	Polycarbonate, thickness: 0,4 mm, min. V-0, Min. 80 oC	ANSI/UL 94	UL
LCD Panel	TPV	TPM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	TPV	TPT270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	AUO	M270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance

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Alt.	AUO	LM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	AUO	P270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	L&T	LM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	LGD	LM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	INNOLUX	M270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	PANDA	LM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	BOE	MV270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	SHARP	LQ270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	SAMSUNG	LTM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	BOE	ME270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Adhesive for mylar sheet between power board and metal enclosure	SYMBIO	DS50-A, DS50L	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	3M	55235, 55236, 9448A, 55230, 9495MP	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10, LA9120	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	NITTO DENKO CORP	GA835	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	TESA SE	68646	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	RIALS CORP	G4000	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance

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Alt.	FUJIAN YOUYI ADHESIVE TAPE GROUP CO., LTD	YS310	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Speaker (Optional)	Interchangeable	Interchangeable	4Ω, 2,5W *2	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
For power board 715GC023					
AC-Inlet (CN901)	Solteam	ST-01 (For ENEC) ST-01A ST-01C (For VDE) ST-01 Series (For UL)	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	ENEC (ENEC16/FI/20/10036) VDE (40015691) UL (E200241)
Alt.	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1 (For VDE), SA-4S 7, SA-4S 9 (For TUV), SA-4S 6, SA-4S 12 (For UL)	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40003610) TUV (R 50293856) UL (E154342)
Alt.	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40028101) UL (E102641)
Alt.	Kunshan DLK Electronics Technology Co., Ltd	CDJ-3	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40010513) UL (E217394)
Alt.	Kunshan DLK Electronics Technology Co., Ltd	CDJ-3-1	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40015913) UL (E217394)
Alt.	INALWAYS ELECTRONICS INC	0707-1, 0711-2, 0714	10A, 250Vac	UL 60320-1	UL (E94191)
Alt.	TECX-UNIONS TECHNOLOGY CORP	TU-301 series	10A, 250Vac	UL 60320-1	UL (E220004)
Alt.	Yueqing Hongchang Radio Co., Ltd	DB-14 series	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40028645) UL (E327347)
Alt.	Solteam Incorporation	SC04 (For ENEC), SC04-1BWW, SC04-2BTT	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	ENEC (ENEC16/FI/20/10040) UL (E200241)

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Alt.	Interchangeable	Interchangeable	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	EU / UL certification mark
Fuse (F901 on primary)	Cooper Bussmann LLC	SR-5	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Littelfuse Inc.	382	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018249) UL (E67006)
Alt.	Littelfuse Inc.	392	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)
Alt.	Cooper Bussmann LLC	SS-5	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MET	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017157) UL (E82636)
Alt.	Conquer Electronics Co., Ltd.	MST	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	Suzhou Walter Electronic Co. Ltd.	2000	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018790) UL (E56092)

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Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)
Alt.	Interchangeable	Interchangeable	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Fuse (F902, F903 in secondary)	Cooper Bussmann LLC	SR-5	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Littelfuse Inc.	382	T5AL, 250Vac	UL 248-1 UL 248-14	UL (E67006)
Alt.	Littelfuse Inc.	392	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)
Alt.	Cooper Bussmann LLC	SS-5	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MET	T5AL, 250Vac	UL 248-1 UL 248-14	UL (E82636)
Alt.	Conquer Electronics Co., Ltd.	MST	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	Suzhou Walter Electronic Co. Ltd.	2000	T5AL, 250Vac	UL 248-1 UL 248-14	UL (E56092)
Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)

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Alt.	Interchangeable	Interchangeable	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Y-cap (C920, C921, C944) (optional)	TDK CORPORATION	CD	Max. 1000 pF, 250 Vac, Min. 85°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029780) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KX	Max. 1000 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AH	Max. 1000 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001804) UL E146544
Alt.	JYA-NAY CO LTD	JN	Max. 1000 pF, AC 400 / 250 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	UL (E201384)
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 1000 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SB	Max. 1000 pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 1000 pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40012143) UL (E249006)
Alt.	Interchangeable	Interchangeable	Max. 1000 pF, Min. 250Vac, 85°C min. Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	EU / UL certification mark
Y-cap (C900) (optional)	TDK CORPORATION	CD	Max. 3300 pF, 250/ 400 Vac, Min. 85°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029780) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KX	Max. 3300 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AH	Max. 3300 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001804) UL E146544
Alt.	JYA-NAY CO LTD	JN	Max. 3300 pF, AC 400 / 250 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	UL (E201384)

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Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 3300 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SB	Max. 3300 pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 3300 pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40012143) UL (E249006)
Alt.	Interchangeable	Interchangeable	Max. 3300 pF, Min. 250Vac, 85°C min. Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	EU / UL certification mark
X- Cap. (C914) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0,47µF, AC 250/275/280/300/ 305/310V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40015608) UL (E183780)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,47µF, AC 275V; Min. 105 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40018238) UL (E211347)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,47µF, AC 275/305 V; 110 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40025981) UL (E211347)
Alt.	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0,47µF, 275 / 305 /310 VAC, X2 type, Min. 105 °C	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40000358) UL (E186600)
Alt.	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0,47µF, 275/300/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	ENEC (V4413) UL (E97797)
Alt.	LIOW GU ELECTRONICS INDUSTRY CO LTD	GS-L	Max. 0,47µF, 250/275/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40023391) UL (E186321)
Alt.	TDK (Zhuhai FTZ) Co., Ltd.	B3292	Max. 0,47µF, 305Vac; 105°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40010694) UL (E97863)
Alt.	NANJING TENGEN RONG GUANG DA ELECTRONICS (GROUP) CO LTD	MKP	Max. 0,47µF, AC 250 V / 275 / 305 / 310 V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40028680) UL (E200596)
Alt.	SHENZHEN JINGHAO CAPACITOR CO LTD	CBB62B	Max. 0,47µF, AC 250 / 280 / 305 V, Min.; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40018690) UL (E252286)

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Alt.	Interchangeable	Interchangeable	Max. 0,47µF, 250Vac Min.; 100°C Min.	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	UL / EU certification mark
Optocoupler (U902)	Lite-on	LTV-817	Ext. cr ≥7,0 mm, Dti ≥ 0,4 mm, 105°	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40015248) UL (E113898)
Alt.	Sharp	PC123	Ext. cr ≥6,4 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008087) UL (E64380)
Alt.	VISHAY Semiconductor GmbH	TCET1103-3034	Ext. cr ≥ 8,4 mm, Dti ≥ 0,4 mm, 100°	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40028080)
Alt.	Everlight Electronics Co., Ltd.	EL817M, EL817	Ext. cr ≥ 7,6 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (132249) UL (E214129)
Alt.	TOSHIBA CORP	TLP781, TLP781F	Ext. cr ≥ 6,5 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40021173) UL (E67349)
Alt.	TOSHIBA CORP	TLP421F, TLP421	Min. Ext. cr ≥ 7,0 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40010944) UL (E67349)
Alt.	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Min. Ext. cr ≥ 8,1 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40028391) UL (E214129)
Alt.	RENESAS	PS2561DL1-1, PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1	Min. Ext. cr ≥ 7,1 mm, Dti ≥ 0,4 mm, 100° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008862) UL (E72422)
Alt.	Interchangeable	Interchangeable	Min. Ext. cr ≥ 6,4 mm, Dti ≥ 0,4 mm, 100° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	UL / EU certification mark
Line Choke (L901) (Optional)	ASET	373G0174558X	105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	LIANFENG	373G0174558J	105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Transformer (T901)	PHOENIX	380GL19P0170P	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	PHOENIX	PH01024600	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance

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Alt.	LFDJ	380GL19P0170J	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	LFDJ	BCK-35-L01379	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
- Bobbin	SUMITOMO BAKELITE CO., LTD	PM-9820	V-0, 150 °C	UL 94	UL (E41429)
- Magnet Winding	PROSPERITY ELECTRIC WIRE & CABLE CO	UEW	130°C	ANSI/UL 1446	UL (E196072)
- Alt.	HENG YA ELECTRIC KUN SHAN LTD	TYPU-130(UEW/QA-B), TYA1-130(UEW/QA-B)	130 °C	ANSI/UL 1446	UL (E245514)
- Alt.	SHANDONG SAINT ELECTRIC CO LTD	*UEW/130, QA-*/130, *UEW/130 Litz, QA-*/130 Litz, MW75-C	130 °C	ANSI/UL 1446	UL (E194410)
- Alt.	GUANGZHOU WANBAO ENAMELLED WIRE CO LTD	xUEW-130, QA-x/130	130°C	ANSI/UL 1446	UL (E167402)
- Alt.	Interchangeable	Interchangeable	130°C	ANSI/UL 1446	UL
- Triple insulation wire	KBI COSMOLINK CO., LTD.	TIW-M (For VDE), TIW-M(XX) (For UL)	Reinforced insulation, 130°C	EN 62368-1: 2014 + A11:2017 IEC 62368-1: 2014 ANSI/UL 2353	VDE (138053) UL (E213764)
- Alt.	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B* (For VDE), TIW-B* (For UL)	Reinforced insulation, 130°C	EN 62368-1: 2014 + A11:2017 IEC 62368-1: 2014 ANSI/UL 2353	VDE (40033527) UL (E332529)
- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (c)(g)	PET film insulating tape, 130°C	CAN/UL 510A	UL (E165111)
- Tube	GREAT HOLDING INDUSTRIAL CO., LTD.	TFL	PTFE, 200°C, VW-1	UL 224	UL (E156256)
- Alt.	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TT-L	PTFE, 200°C, VW-1	UL 224	UL (E180908)
Bleeding resistors (R916, R917, R918)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series,	Max. 680 kohm, 1/4 W	IEC 62368-1: 2014	CB of Nemko NO99693
Alt	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	Max. 680 kohm, 1/4 W	IEC 62368-1: 2014	CB of Nemko NO99692
Alt	YAGEO	RV0603, RV0805, RV1206	Max. 680 kohm, 1/4 W	IEC 62368-1: 2014	CB of UL certificate no. DK-64853-UL
Alt	TZAIYUAN	HSMD********* SMD*********	Max. 680 kohm, 1/4 W	IEC 62368-1: 2010	CB of UL certificate no. DK-29431-A1-UL
Alt.	Tzai Yuan Enterprise Co., Ltd.	MGUL1/4Wseries	Max. 680 kohm, 1/4 W	IEC 62368-1: 2014	CB issued by UL (CB cert No. DK-69874-UL)

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Alt.	Interchangeable	Interchangeable	Max. 680 kohm, 1/4 W	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
For main board 715GE142					
Limited current IC (U545)	Global Mixed-mode Technology Inc.	G509H10NTP1G	DC 2,7V – 5,5V; Continuous operating current of 1,0A	IEC 62368-1:2018 EN IEC 62368-1:2020 + A11: 2020 ANSI/UL 2367	[redacted] (CB report No. CN213HMD 001; CB certificate No. JPTUV-126218) UL (E232223)

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix U **(Modelo/Model: 24B3HMF2, **24B3*******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class Ⅰ; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2015 + A1:2019 Class B, CISPR 35:2016, IEC 61000-3-2:2018, IEC 61000-3-3: 2013 + A1:2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11: 2020

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
Plastic material of enclosure	Grand	D-1000A, D-150	HB or better, min. 1.5mm thickness	UL 94	UL (E88637)
Alt.)	LG CHEM LTD	LUPOY GN- 5001TF(#), LUPOY GN-5001RF(T), LUPOY GN-5008HF(#), LUPOY GN-2101F(m)(f1), XG568(#), XG569(#), GP-1000(m)(#), SE885(#), AF365(&), AF368(#), AF358	HB or better, min. 1.5mm thickness	UL 94	UL (E67171)
Alt.)	LOTTE CHEMICAL CORPORATION	VH-0810(+), VE-1890(+), EN-1052(+), VH-0815(+), VH-0819(+), HM-1100(+), VE-0819F, NH-1017T, NH-1017SG(+), VE-0812(+), NH-1000T(+)(&), NE-1030(+), LS-1159(r), LS-1159SF, LS-1159F, NH-1036, GC-1017(RR30), SD-0150(+), BF-0677(+), BF-0675(+), BF-0670F, GC-0700(+++)(RR28), LX-0951(+), LX-0957(+), HG-0760(+), NH-1027HF, NH-1027(+), SD-0150T, GC-1036(RR35), SC-1220R, ABF-0200E, ABF-1030NH	HB or better, min. 1.5mm thickness	UL 94	UL (E115797)

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Alt.)	KingFa	HF-606, HF-626, FRABS-518, JH960 6(M) (ccc) (##), FRHIPS-960, CK-572(M1) (##), FRABS-518C, 5197, RS-(hh)0, GAR-011C, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-55(M) (##), HP-126, CK-61(M) (##), HIPS-510 (o), HIPS-550	HB or better, min. 1.5mm thickness	UL 94	UL (E171666)
Alt.)	Covestro Deutschland AG [PC Resins]	FR3005, GF9011 MF + (z), FR3050 +	HB or better, min. 1.5mm thickness	UL 94	UL (E41613)
Alt.)	TEIJIN	TN-7500(c)	HB or better, min. 1.5mm thickness	UL 94	UL (E98529)
Alt.)	TEIJIN	MN-3600H(#)	HB or better, min. 1.5mm thickness	UL 94	UL (E244324)
Alt.)	SAMYANG	TRILOY:210NHF (@), 210NHF	HB or better, min. 1.5mm thickness	UL 94	UL (E121254)
Alt.)	CHI MEI	PC-540A, PA-765A, PA-756S, PA-757(+)	HB or better, min. 1.5mm thickness	UL 94	UL (E56070)
Alt.)	ORINKO	HIPS-2230(N), ABS-3070(T), HIPS-2000, ABS-340(X), ABS900F23	HB or better, min. 1.5mm thickness	UL 94	UL (E328304)
Alt.)	SABIC	C6600	HB or better, min. 1.5mm thickness	UL 94	UL (E207780)
Alt.)	Haier	HRABS-RS, HRABS-HG	HB or better, min. 1.5mm thickness	UL 94	UL (E230779)
Alt.)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106	HB or better, min. 1.5mm thickness	UL 94	UL (E103670)
Alt.)	INEOS STYROLUTION POLYMERS (FOSHAN) COMPANY LIMITED	3441, 260-XX	HB or better, min. 1.5mm thickness	UL 94	UL (E314268)
Alt.)	WISTRON	GA(M)(b)(c), NC(N)(a), GA85	HB or better, min. 1.5mm thickness	UL 94	UL (E359575)
Alt.)	HINGLONG	HL-ABS- PCR35/65/85	HB or better, min. 1.5mm thickness	UL 94	UL (E345434)
Alt.)	WOTE	2100	HB or better, min. 1.5mm thickness	UL 94	UL (E310240)
Alt.)	GUO HENG	YOUHO(#####)(Y), YOUHO13(##)(Y Y), YOUHE26(##)	HB or better, min. 1.5mm thickness	UL 94	UL (E471190)
Alt.)	UNIC	UR-3006+(RXX), UR-200+, UR-7085+(R90), UP-700+	HB or better, min. 1.5mm thickness	UL 94	UL (E135175)
Alt.)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 1.5mm thickness	UL 94	UL (E205938)
Alt.)	CHI LIN	GA-1(aaa)	HB or better, min. 1.5mm thickness	UL 94	UL (E177071)
Alt.)	FUHENG	HIPS-568, FH-101, FH-102	HB or better, min. 1.5mm thickness	UL 94	UL (E234833)
Alt.)	QING DAO GON TECHNOLOGY CO.,LTD.	ABS21(xx)G-A, ABS2030A, ABS20(xx)B	HB or better, min. 1.5mm thickness	UL 94	UL (E330547)
Alt.)	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	AC2820-A	HB or better, min. 1.6mm thickness	UL 94	UL (E162823)
Alt.)	Chongqing Gengye New Materials Technology Co Ltd	Ecorex® RN - + (R #), GU-022	HB or better, min. 1.5mm thickness	UL 94	UL (E514505)
Alt.)	Interchangeable	Interchangeable	HB or better, min. 1.5mm thickness	ANSI/UL 94	UL
Internal metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 0,5 mm	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance

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Base stand (optional use)	Interchangeable	Interchangeable	Metallic covered by the HB or better plastic	--	--
PWB	Interchangeable	Interchangeable	V-1 or better, Min. 105 oC	UL 796	UL
Mylar sheet (Located between power supply board and panel) (between power board and metal enclosure)	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E249605)
Alt.)	SICHUAN LONGHUA FILM CO LTD	PC-770F, PC-770F-A, PC-770	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E254551)
Alt.)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR117ECOC, DFR117ECOB, DFR117ECO, DFR3A(d)	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E199019)
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC- 1880B, KLX FRPC- 1860B, KLX FRPC- 1870B, KLX FRPC- 870B, KLX PP BK-10, KLX PP BK-10- KS	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E315185)
Alt.)	JINGMEN GORUN TECHNOLOGY CO LTD	HF70	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E305163)
Alt.)	KUNSHAN DOBESTY OPTOELECTRONIC MATERIALS CO LTD	PC9842B, PC9821B, PC9832B, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E339070)
Alt.)	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E329660)
LCD Panel	TPV	TPM238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 14.98W; LED Array Voltage: 31.9V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	LG Display	LM238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 17.76W; LED Array Voltage: 58.9V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	L&T	LM238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.1W; LED Array Voltage: 38.8V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	BOE	MV238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.04W; LED Array Voltage: 46.4V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance

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Alt.)	AUO	M238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.17W; LED Array Voltage: 44.86V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	INNOLUX	M238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 14.19W; LED Array Voltage: 32V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Adhesive for mylar sheet	SYMBIO	DS50-A, DS50L	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	3M	55236, 9448A, 55230, 9495MP	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10, LA9120	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	NITTO DENKO CORP	GA835	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	TESA SE	68646	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	DEXERIALS CORP	G4000	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	FUJIAN YOUYI ADHESIVE TAPE GROUP CO., LTD	YS310	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Tube used to wrap metal chassis pillar	JIANGSU PEARL SILICONE RUBBER MATERIAL CO LTD	TMC-8750Aseries, HD-87	V-0, 150°C, min. thickness 0.6mm	UL 94, UL746	UL E231325 and tested with appliance
Alt.)	DONGJUE SILICONE (NANJING) CO LTD	NE-Z150	V-0, 150°C, min. thickness 1.8mm	UL 94, UL746	UL E236040
Switching mode power supply board: 715GE360 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC16/FI/20/10036, UL E200241
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40003610, UL E154342
Alt.)	ZHANGJIAGANG HUAJIE ELECTRONIC CO LTD	SA-4S 9, SA-4S 6, SA-4S 7, SA-4S 12	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 502938560001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4D	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	TUV R 502746980001-0002, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40028101, UL E102641

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Alt.)	Kunshan DLK Electronics	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40010513, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40015913, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-7, CDJ-7 1	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	SE-ENEC-2001967, UL E317189
Alt.)	TECX	TU-301 series	10A, 250Vac	ANSI/UL60320-1	UL E220004
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0714-1, 0711-2	10A, 250Vac	ANSI/UL60320-1	UL E94191
Alt.)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14-05, DB-14-15, DB-14-07, DB-14-11-L, DB-14-14-L, DB-14-23, DB-14-14, DB-14-05E, DB-14-15-L-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40028645, UL E327347
Alt.)	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE, ENEC, TUV, UL
Fuse (F901) on primary	Littelfuse Inc.	382	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 503105510001-0004, UL E10480
Alt.)	Conquer	MET	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017157, UL E82636
Alt.)	CONQUER ELECTRONICS CO LTD	MST	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636

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Alt.)	Conquer	PTU	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 503717560001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018787, UL E220181
Alt.)	Walter	2010	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T3.15AL, 250Vac	EN 60127-1, EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 504066050001-0003, UL E56092
Alt.)	Walter	2040	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 504263560001-0002, UL E56092
Alt.)	Walter	ICP	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003

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Alt.)	Better	244	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 503357640001-0003, UL E300003
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua Electronic Co.	CT7	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SB	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861

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Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua Electronic Co.	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.47µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596
Alt.)	Europtronic	MPX	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.47µF, Min. 275Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT97000141, UL E97797

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Alt.)	TDK	B3292	Max. 0.47μF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.47μF, Min. 275Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	SHENZHEN JINGHAO CAPACITOR CO LTD	CBB62B	Max. 0.47μF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.47μF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Bleeder Resistor (R907, R908, R909)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06********* series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB issued by NEMKO (CB report No. REP014995 and CB cert No. NO127737)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06********* series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB issued by NEMKO (CB report No. REP014996 and CB cert No. NO127738)
Alt.)	Yageo Corporation	RV1206XX- 07155ML (The first X can be D,F or J. the secondary X can be R or K)	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB issued by UL(CB report No. E491387-4787887815-1 Original, CB cert No. DK- 64853-UL)
Alt.)	Tzai Yuan Enterprise Co., Ltd.	HSMD1206*****, SMD1206*****	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB issued by UL (CB report No. DK-88747- A1-UL)
Alt.)	Interchangeable	Interchangeable	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB
Line Choke (L901) (Optional)	TAICHANG	373G0174600S	130°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	LIANFENG	373G0174600J	130°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	CHANNELON	373G0174600H	130°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Transformer (T901)	CHANNELON	380GL32P760H / CLT-116004	Class 130 material (B)	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
-Bobbin	CHANG CHUN PLASTICS CO.,LTD	T200HF	Phenolic, V-0, 150°C	UL94	UL E59481
-Triple insulation wire	KBI COSMOLINK CO., LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL E156256

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Transformer (T901) Alt.)	LF	380GL32P760J / BCK-30-L01625	Class 130 material (B)	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
-Bobbin	CHANG CHUN PLASTICS CO.,LTD	T200HF	Phenolic, V-0, 150°C	UL94	UL E59481
-Triple insulation wire	KBI COSMOLINK CO., LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	PHOENIX	380GL32P760P / PH01087700-1	Class 130 material (B)	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
-Bobbin	SUMITOMO BAKELITE CO., LTD	PM-9750, PM-9823	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B* (UL), TIW-B (VDE)	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E332529, VDE 40033527
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL E156256
Current sensing Resistor (R911)	Interchangeable	Interchangeable	Min. 15kΩ, min. 1/10W	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 8Ω at 25°C, max. 5A	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.500V, min.2.0A	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Ripple Capacitor (C907)	Interchangeable	Interchangeable	10-150µF, max. 450V, 105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix V **(Modelo/Model: 22B3HMF, 22B3********, Q22B3********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2015 + A1:2019 Class B, CISPR 35:2016, IEC 61000-3-2:2018, IEC 61000-3-3: 2013 + A1:2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11: 2020

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	V-0, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	HB or Better, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E207780)
Alt.	CHI MEI CORPORATION	PA-757(+), PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350, HF380	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP-1000(Z), GP-1000L	HB or Better thickness: 1,5mm, 130 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better thickness: 1,6mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568, XG568(#)	HB or Better thickness: 1,6mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569C, XG569(#)	HB or Better thickness: 1,5mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better thickness: 1,0mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GN-1002F(m)	HB or Better thickness: 1,5mm, 80 °C	ANSI/UL 94	UL (E67171)
Alt.	LOTTE CHEMICAL CORPORATION	SD-0150(+), BF-0677(+), BF-0675(+), GC-0700(+++), LX-0951(+), LX-0957(+), HG-0760(+), SD-0150T, ABF-0200E, NH-1027HF, NH-1027(+)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670F, BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	GC-1036, LS-1159SF, LS-1159F, NH-1036, GC-1036, ABF-1030NH, NH-1017SG(+)	V-0 or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E88637)
Alt.	KINGFA SCI & TECH CO LTD	5197	HB or Better Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E171666)

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Alt.	KINGFA SCI & TECH CO LTD	GAR-011 C, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-55111, HP-126	HB or Better Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	CK-61506 RS-900, RS-300, RS-400, RS-(hh)0	HB or Better Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	JH960 6(M), JH960 6(M) (ccc) (##), JH960-6(M) (ccc) (##), JH960 62(M4), JH960 62(M4) (ccc) (##), JH960-62(M4) (ccc) (##)	5VB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E230779)
Alt.	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106	V-0, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E103670)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441, 260-XX	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA1(e), GA35, NC30, GA65, GA85, GC(t) (t) – Replace the one, two, three or four numbers and/or letters to denote to serial number	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E359575)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E310240)
Alt.	UNIC	UR-200+ (+: A to Z), UR-3006+(R35), UR-3006+(R90), UR-3006+(RXX) UP-700+	HB or Better Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E205938)
Alt.	CHI LIN TECHNOLOGY CO LTD	GA-1535 GA-1(aaa)	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E177071)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E234833)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(xx)G-A, ABS2030A, ABS20(xx)B	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR35/65/85	HB or Better Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E345434)

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Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(1302)(B), YOUHO(1303)(B), YOUHO(1304)(B), YOUHO(1333)(B), YOUHO(#####)(Y),YOUHO(1303)(OP), YOUHO13(##)(YY) YOUHO1312B	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E471190)
Alt.	Chongqing Gengye New Materials Technology Co Ltd	GU-022	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E514505)
Alt.	Interchangeable	Interchangeable	HB or Better Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL
Internal metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 0,5 mm	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Base stand (optional)	LOTTE CHEMICAL CORPORATION	SD-0150(+)	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	Interchangeable	Interchangeable	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	V-1 or better, Min. 105 °C	UL 796	UL
Insulation Sheet (between power board and LCD panel, between power board and metal cover)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	Polycarbonate, min. thickness: 0,4 mm, V-0, 110 °C	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	Polycarbonate, min. thickness: 0,4 mm, V-0, 130 °C	ANSI/UL 94	UL (E199019)
Alt.	Sichuan Longhua Film Co Ltd	PC-770 series PC-770, PC-770 A, PC-870 A PC-770-60B, PC-770-60B-A, PC-770-63B, PC-770-63B-A, PC-770-65B, PC-770-65B-A, PC-770-83, PC-770-83B, PC-770-83F, PC-770F, PC-770F-A	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E254551)
Alt.	KunShan Dobesty Optoelectronic Materials Co Ltd	PC9821B, PC9832B, PC9842B, DB98HD, DB98, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E339070)
Alt.	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E249605)
Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX FRPC-1880 series	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E315185)

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Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-1860B, KLX FRPC-83	Polycarbonate, thickness: 0,40 mm, V-0, 80 °C	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX FRPC-1890 series	Polycarbonate, thickness: 0,4 mm min. V-0, 115 °C	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX PP BK-10-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 110 °C	ANSI/UL 94	UL (E315185)
Alt.	JINGMEN GORUN TECHNOLOGY CO LTD	HF70, HE70(x)(#)	Polycarbonate, thickness: 0,40 mm min. V-0, 80 °C	ANSI/UL 94	UL (E305163)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F TS-FR383H, TS-FR360H	Polycarbonate, thickness: 0,40 mm min. V-0, 80 °C	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR1370	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E357515)
Alt.	NANTONG HUAPU PHOTOELECTRIC MATERIAL CO., LTD	HPC-EFR87X	Polycarbonate, thickness: 0,4 mm min. V-0, 80 °C	ANSI/UL 94	UL (E508063)
Alt.	Interchangeable	Interchangeable	Polycarbonate, thickness: 0,4 mm min. V-0, Min. 80 °C	ANSI/UL 94	UL
LCD Panel	LG Display	LM215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	AUO	M215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	BOE	MV215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	TPV VISION INNOVATOR	TPM215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Adhesive for mylar sheet between power board and metal enclosure	SYMBIO	DS50-A, DS50L	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	3M	55235, 55236, 9448A, 55230, 9495MP	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10, LA9120	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance

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Alt.	NITTO DENKO CORP	GA835	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	TESA SE	68646	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	RIALS CORP	G4000	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	FUJIAN YOUYI ADHESIVE TAPE GROUP CO., LTD	YS310	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Silicone Rubber	ONGJUE SILICONE (NANJING) CO LTD	NE-Z150	Min. thickness: 1,8 mm, 150°C, V-0	UL 94	UL (E236040)
For power board model No. 715GD928:					
AC-Inlet (CN901)	Solteam	ST-01 (For ENEC) ST-01A ST-01C (For VDE) ST-01 Series (For UL)	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	ENEC (ENEC16/FI/20/10036) VDE (40015691) UL (E200241)
Alt.	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1 (For VDE), SA-4S 7, SA-4S 9 (For TUV), SA-4S 6, SA-4S 12 (For UL)	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40003610) TUV (R 50293856) UL (E154342)
Alt.	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40028101) UL (E102641)
Alt.	Kunshan DLK Electronics Technology Co., Ltd (For VDE) SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD (For UL)	CDJ-3	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40010513) UL (E217394)
Alt.	Kunshan DLK Electronics Technology Co., Ltd (For VDE) SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD (For UL)	CDJ-3-1	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40015913) UL (E217394)
Alt.	INALWAYS ELECTRONICS INC	0707-1, 0711-2, 0714	10A, 250Vac	UL 60320-1	UL (E94191)
Alt.	TECX-UNIONS TECHNOLOGY CORP	TU-301 series	10A, 250Vac	UL 60320-1	UL (E220004)
Alt.	Yueqing Hongchang Radio Co., Ltd	DB-14 series	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40028645) UL (E327347)
Alt.	Solteam Incorporation	SC04 (For ENEC), SC04-1BWW, SC04-2BTT	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	ENEC (ENEC16/FI/20/10040) UL (E200241)

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Alt.	Interchangeable	Interchangeable	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	EU / UL certification mark
Fuse (F901)	Cooper Bussmann LLC	SR-5	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Littelfuse Inc.	392	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)
Alt.	Cooper Bussmann LLC	SS-5	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MST	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)
Alt.	Interchangeable	Interchangeable	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Y-cap (C902, C903, C934) (optional)	TDK CORPORATION	CD	Max. 1000pF, 250 Vac, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40029780) UL (E37861)
Alt.	TDK CORPORATION	CS	Max. 1000pF, 250/ 300 Vac, 125 °C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40029781) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KH	Max. 1000 pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40002796) UL (E37921)

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Alt.	Murata Mfg. Co., Ltd.	KX	Max. 1000 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AC	Max. 1000pF, AC 250/300V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40001829) UL (E146544)
Alt.	Walsin Technology Corp.	AH	Max. 1000pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40001804) UL E146544
Alt.	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 1000pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40036246) UL (E154899)
Alt.	JYA-NAY CO LTD	JY	Max. 1000pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	UL (E201384)
Alt.	JYA-NAY CO LTD	JN	Max. 1000pF, AC 400 / 250 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	UL (E201384)
Alt.	Haohua Electronic Co.	CT7	Max. 1000pF, AC250/275/300V,125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40013601) UL (E233106)
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 1000pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SE	Max. 1000pF, AC 250/300 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (122995) UL (E114280)
Alt.	Success Electronics Co., Ltd.	SB	Max. 1000pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 1000pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40012143) UL (E249006)
Alt.	XIAMEN WANMING ELECTRONICS CO LTD	CK	Max. 1000pF, 250/300/400/500 Vac, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	ENEC (ENEC-04533) UL (E221839)
Alt.	Interchangeable	Interchangeable	Max. 1000pF, Min. 250Vac, Min. 85 °C, Y1/Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	EU / UL certification mark

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X- Cap. (C901) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0,33 µF, AC 250/275/280 /300/305/310V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40015608) UL (E183780)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,33 µF, AC 275V; Min. 105 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40018238) UL (E211347)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,33 µF, AC 275/305 V; 110 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40025981) UL (E211347)
Alt.	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0,33 µF, 275 / 305 /310 VAC, X2 type, Min. 105 °C	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40000358) UL (E186600)
Alt.	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0,33 µF, 275/300/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	ENEC (V4413) UL (E97797)
Alt.	LIOW GU ELECTRONICS Industry Co Ltd	GS-L	Max. 0,33 µF, 250/275/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40023391) UL (E186321)
Alt.	TDK (Zhuhai FTZ) Co., Ltd.	B3292	Max. 0,33 µF, 305Vac; 105°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40010694) UL (E97863)
Alt.	NANJING TENGEN RONG GUANG DA ELECTRONICS (GROUP) CO LTD	MKP	Max. 0,33 µF, AC 250 V / 275 / 305 / 310 V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40028680) UL (E200596)
Alt.	SHENZHEN JINGHAO CAPACITOR CO LTD	CBB62B	Max. 0,33 µF, AC 250/280/ 305V, Min. 110°C X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40018690) UL (E252286)
Alt.	Interchangeable	Interchangeable	Max. 0,33 µF, Min. 250Vac Min. 105°C, X1 or X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	UL / EU certification mark
Optocoupler (U902)	Lite-on	LTV-817	Ext. cr ≥7,0 mm, Dti ≥ 0,4 mm, 105°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40015248) UL (E113898)
Alt.	Sharp	PC123	Ext. cr ≥6,4 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008087) UL (E64380)
Alt.	VISHAY Semiconductor GmbH	TCET1103-3034	Ext. cr ≥ 8,4 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015	VDE (40028080)

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Alt.	Everlight Electronics Co., Ltd.	EL817M, EL817	Ext. cr ≥ 7,6 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (132249) UL (E214129)
Alt.	TOSHIBA CORP	TLP781, TLP781F	Ext. cr ≥ 6,5 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40021173) UL (E67349)
Alt.	TOSHIBA CORP	TLP421F, TLP421	Min. Ext. cr ≥ 7,0 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40010944) UL (E67349)
Alt.	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Min. Ext. cr ≥ 8,1 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40028391) UL (E214129)
Alt.	RENESAS	PS2561DL1-1, PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1	Min. Ext. cr ≥ 7,1 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008862) UL (E72422)
Alt.	Interchangeable	Interchangeable	Min. Ext. cr ≥ 6,4 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	UL / EU certification mark
Line Choke (L901) (Optional)	LFDJ	373G0174557J	105°C	IEC/EN 62368-1	Tested With appliance
Alt.	HA	373G0174557H	105°C	IEC/EN 62368-1	Tested With appliance
Transformer (T901)	PHOENIX	380GL32P830P	Class B	IEC/EN 62368-1	Tested With appliance
Alt.	LF	380GL32P830J	Class B	IEC/EN 62368-1	Tested With appliance
Alt.	HA	380GL32P830H	Class B	IEC/EN 62368-1	Tested With appliance
- Bobbin	SUMITOMO Bakelite Co Ltd	PM-9750, PM-9823,	V-0, 150 °C	UL 94	UL (E41429)
- Alt.	CHANG CHUN Plastics Co Ltd	T200HF	V-0, 150 °C	UL 94	UL (E59481)
- Magnet Winding	NINGBO JINTIAN NEW MATERIAL CO LTD	xUEW/130, QA-x/130 (MW75-C)	130°C	ANSI/UL 1446	UL (E227047)
- Alt.	BAIYIN YIZHI CHANGTONG SUPER MICRO-WIRE CO., LTD	xUEW/130 (MW75-C)	130°C	ANSI/UL 1446	UL (E363385)
- Alt.	DONG GUAN YIDA INDUSTRIAL CO LTD	xUEW/155, QA-x/155	155 °C	ANSI/UL 1446	UL (E344055)
- Alt.	SHANDONG SAINT Electric Co Ltd	*UEW/130, QA-*/130, *UEW/130 Litz, QA-*/130 Litz, MW75-C	130 °C	ANSI/UL 1446	UL (E194410)
- Alt.	HENG YA ELECTRIC KUN SHAN LTD	TYPU-130(UEW/QA-B)	130 °C	ANSI/UL 1446	UL (E245514)
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B*	Reinforced insulation, 130°C	EN 62368-1: 2014 + A11:2017 IEC 62368-1: 2014 ANSI/UL 2353	VDE (40033527) UL (E332529)
- Alt.	KBI COSMOLINK CO., LTD.	TIW-M	Reinforced insulation, 130°C	ANSI/UL 2353 IEC 62368-1: 2014	VDE (138053) UL (E213764)

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Certificado de Conformidade

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Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
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- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (c)(g)	PET film insulating tape, 130°C	CAN/UL 510A	UL (E165111)
- Tube	GREAT HOLDING Industrial Co Ltd	TFL	PTFE, 200°C, VW-1	UL 224	UL (E156256)
- Alt.	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-L	PTFE, 200°C, VW-1	UL 224	UL (E180908)
Bleeding resistors (R907, R908, R909)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series (The "#" can be L or K represent resistor grade, L=Mohm grade or K=Kohm grade; the "xxx" can be any numeric represent the 3-digit resistor code for resistor value)	Max. 620K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by NEMKO (CB report No. 336992 and CB certificate No. NO99692)
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series (The "#" can be L or K represent resistor grade, L=Mohm grade or K=Kohm grade; the "xxx" can be any numeric represent the 3-digit resistor code for resistor value)	Max. 620K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by NEMKO (CB report No. 337017 and CB certificate No. NO99693)
Alt.	Yageo Corporation	RV1206 series	Max. 620K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by UL (CB report No. E491387-4787887815-1 and CB certificate No. DK-64853-UL)
Alt.	Tzai Yuan Enterprise Co., Ltd.	HSMD1206 series, *SMD1206 * series (The * denote the tolerance, which can be "F", "G" or "J")	Max. 620K ohm, 1/4 W	IEC 62368-1:2010	CB issued by UL (CB report No. OFF-12CA24616-A-1, OFF-12CA24616-A-1 am1 and E354677-12CA24616-A-1. CB certificate No.DK-29431-UL, DK-29431-A1-UL and DK-29431-A1-M1-UL)
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06********* series	Max. 620K ohm, 1/4 W	IEC 62368-1: 2018	CB issued by NEMKO (CB report No. REP014996 and CB certificate No. NO127738)
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06********* series	Max. 620K ohm, 1/4 W	IEC 62368-1: 2018	CB issued by NEMKO (CB report No. REP014995 and CB certificate No. NO127737)
Alt.	Interchangeable	Interchangeable	Max. 620K ohm, 1/4 W	IEC/EN 62368-1	CB report & certification issued by NCB

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão /** *Review*: **00**	**Validade /** ***Expiration***
6 de junho de 2024 *June 6, 2024*		5 de junho de 2027 *June 5, 2027*

Appendix W (Modelo/Model: 22B30HM2, 22B35HM2, **22********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:*
DC Input: 19 V d.c., 1,31 A; Class III; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 62368-1:2018, CISPR 32:2015+AMD1:2019, CISPR 35:2016, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A2:2021, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014+AMD1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
External power supply	TPV Electronics (Fujian) Co., Ltd.	ADPC1925EX	Input: 100-240 VAC, 50 - 60 Hz, 1,3 A, Class II; Output: 19,0 VDC, 1,31 A, Tma= 40°C, PS2, Altitude: 5000m	IEC 62368-1:2014; EN 62368-1:2014 +A11:2017	(CB certificate No. NO106527; CB report No. 373441)
External power supply	Ten Pao Industrial Co., Ltd.	S025ANP1900131	Input: 100-240 VAC, 50 - 60 Hz, 0,6 A, Class II; Output: 19,0 VDC, 1,31 A, 25,0 W, Tma = 40°C, PS2, Altitude:5000m	IEC 62368-1:2018	(CB certificate No. JPTUV-149645; CB report No. CN23WCFE 001)
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5 mm, 130 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E88637)

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Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	HB or Better, Min. thickness: 0,75 mm, 60 °C	ANSI/UL 94	UL (E207780)
Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##)	HB or Better, Min. thickness: 1,0 mm, 50°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(ll)	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPSCM(ee), HIPSHG(ee)	HB or Better, Min. thickness: 1,3 mm, 50°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35)(a), UR-3006+(R90)(a), UR-3006+(RXX)(a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	AFE5000N, AFE5100N, 9004BKGA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG (+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50°C	ANSI/UL 94	UL (E115797)

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Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABSPCR35/ 65/85	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E345434)
Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(####) (Y), YOUHO13(##) (YY)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E471190)
Alt.	RUNYE(CHONGQIN G) NEW MATERIALS CO., LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	RUNYE(CHONGQIN G) NEW MATERIALS CO., LTD	Ecorex® RN - + (R #)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H (#)	HB or Better, Min. thickness: 0,45 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60°C	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125°C	ANSI/UL 94	UL (E238753)
Alt.	Interchangeable	Interchangeable	HB or Better, Min. thickness: 0,45 mm, 50°C	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	Min. V-1, 105 °C	UL 796	UL
LCD Panel	LG Display	LM215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank	21,5” with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	AUO	M215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank))	21,5” with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	BOE	MV215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	TPV VISION INNOVATOR	TPM215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	L&T	BM215********** (* can be 0~9, A~Z, “.”, “- “, sign absence or blank)	21,5inch (54.6cm) TFT LCD with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	CHIMEI INNOLUX	M215********** (* can be 0~9, A~Z, “.”, “-“, sign absence or blank)	21,5inch (54.6cm) TFT LCD with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	CPT	CLAA215********** (* can be 0~9, A~Z, “.”, “- “, sign absence or blank)	21,5inch (54.6cm) TFT LCD with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	L&T	LM215********** (* can be 0~9, A~Z, “.”, “- “, sign absence or blank)	21,5inch (54.6cm) TFT LCD with LED backlight	IEC/EN 62368-1	Tested With appliance

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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June 5, 2027

Appendix X (Modelo/Model: 27B30H, 27B35H, **27********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:*
DC Input: 19 V d.c., 1,31 or 2,0 A; Class III; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 62368-1:2018, CISPR 32:2015+AMD1:2019, CISPR 35:2016, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A2:2021, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014+AMD1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
External power supply	TPV Electronics (Fujian) Co., Ltd.	ADPC1925EX	Input: 100-240 VAC, 50 - 60 Hz, 1,3 A, Class II; Output: 19,0 VDC, 1,31 A, Tma= 40°C, PS2, Altitude: 5000m	IEC 62368-1:2014; EN 62368-1:2014 +A11:2017	Nemko (CB certificate No. NO106527; CB report No. 373441)
External power supply	TPV Electronics (Fujian) Co., Ltd.	ADPC1938EX	Input: 100-240 VAC, 50 - 60 Hz,1,3 A, Class II; Output: 19,0 VDC, 2,0 A, Tma =40°C, PS2, Altitude: 5000m	IEC 62368-1:2014; EN 62368-1:2014 +A11:2017	Nemko (CB certificate No. NO106527; CB report No. 373441)
External power supply	Ten Pao Industrial Co., Ltd.	S025ANP1900131	Input: 100-240 VAC, 50 - 60 Hz, 0,6 A, Class II; Output: 19,0 VDC, 1,31 A, 25,0W, Tma = 40°C, PS2, Altitude:5000m	IEC 62368-1:2018	(CB certificate No. JPTUV-149645; CB report No. CN23WCFE 001)
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50°C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80°C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105°C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, 60°C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6 mm, 50°C	ANSI/UL 94	UL (E67171)

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Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5 mm, 130°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E88637)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50°C	ANSI/UL 94	UL (E314268)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	HB or Better, Min. thickness: 0,75 mm, 60°C	ANSI/UL 94	UL (E207780)
Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##)	HB or Better, Min. thickness: 1,0 mm, 50°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(ll)	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPSCM (ee), HIPSHG (ee)	HB or Better, Min. thickness: 1,3 mm, 50°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	AR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35) (a), UR-3006+(R90) (a), UR-3006+(RXX)(a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG (+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E115797)

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Certificado de Conformidade

Certificate of Conformity

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June 5, 2027

Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50°C	ANSI/UL 94	UL (E115797)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABSPCR35/ 65/85	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E345434)
Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO (####) (Y), YOUHO13(##) (YY)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E471190)
Alt.	RUNYE (CHONG QING) NEW MATERIALS CO., LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	RUNYE (CHONG QING) NEW MATERIALS CO., LTD	Ecorex® RN - + (R #)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H (#)	HB or Better, Min. thickness: 0,45 mm, 80°C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60°C	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125°C	ANSI/UL 94	UL (E238753)
Alt.	Interchangeable	Interchangeable	HB or Better, Min. thickness: 0,45 mm, 50°C	ANSI/UL 94	UL
PCB	Interchangeable	Interchangeable	Min. V-1, 105°C	UL 796	UL
LCD Panel	L&T	LM270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	M270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	P270**********(* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	LM270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1268

Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão / *Review*: **00**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Alt.	INNOLUX	M270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	TPV	TPM270********** *** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	TPV	TPT270********** ** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	BOE	MV270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	BOE	ME270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	SHARP	LQ270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	SAMSUNG	LTM270********** *** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	LGD	LM270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	Panda	LM270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1269

	Ref. Certif. No.
	JPTUV-125241-M1

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product	LCD monitor (LED Backlight)
Name and address of the applicant	TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian, P.R. China
Name and address of the manufacturer	TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian, P.R. China
Name and address of the factory	See additional page(s)
Ratings and principal characteristics	I/P: 100-240VAC, 50/60Hz, 1.5A or 2.0A; Class I
Trademark (if any)	AOC
Customer's Testing Facility (CTF) Stage used	CTF Stage 1
Model / Type Ref.	27E2, 27E2********, 27P2, 27P2********, Q27P2, Q27P2********, U27P2, U27P2********, U27E2********, Q27E2********, U27N3********, Q27N3********, 27N3******** (* can be 0-9, A-Z, a-z, -, \, /, + or blank)
Additional information (if necessary may also be reported on page 2)	For model differences, refer to the test report. Re-issue of JPTUV-125241 dated 16.07.2021, due to first modification.
A sample of the product was tested and found to be in conformity with	IEC 62368-1:2018 See Test Report for National Differences
As shown in the Test Report Ref. No. which forms part of this Certificate	CN21218I 002

This CB Test Certificate is issued by the National Certification Body

TÜVRheinland®

TÜV Rheinland Japan Ltd.
Global Technology Assessment Center
4-25-2 Kita-Yamata, Tsuzuki-ku
Yokohama 224-0021, Japan
Phone + 81 45 914-3888
Fax + 81 45 914-3354
Mail: info@jpn.tuv.com
Web : www.tuv.com

Date: 2022-05-09

Signature: Aegean Li

Disclaimer: This is an electronically released document. The authenticity of this certificate can be verified on the IECEE Website "http://certificates.iecee.org"

1. TPV Electronics (Fujian) Co., Ltd.
   Rongqiao Economic and
   Technological Development Zone
   Fuqing City
   Fujian, P.R. China

2. TPV Electronics (Fujian) Co., Ltd.
   Shangzheng, Yuan Hong Road
   Fuqing City
   Fujian
   P.R. China

3. TPV Electronics (Fujian) Co., Ltd.
   Optoelectronic Park,
   Rongqiao Economic and
   Technological Development Zone,
   Fuqing City, 350301 Fujian, P.R. China

4. L&T Display Technology (Fujian) Ltd.
   Optoelectronic Park, Rongqiao
   Economic and Technological
   Development Zone
   Fuqing, 350301 Fujian, P.R. China

5. TPV Display Technology (China) Co., Ltd.
   No. 106 Jinghai 3 Rd.,
   BDA
   100176 Beijing
   P.R. China

6. TPV Display Technology (Wuhan)
   Co., Ltd.
   Unique No. 11, Zhuankou Development
   District of Economic Technological
   Development Zone, 430056 Wuhan City, P.R. China

7. TPV Display Technology (Beihai)
   Co., Ltd.
   China Electronic Beihai Industry
   Park, Northeast of the Crossing
   Between Taiwan Road and Jilin Road, Beihai City, Guangxi, P.R. China

Additional information (if necessary) Report Ref. No. : CN21218I 002

Date: 2022-05-09 Signature: Aegean Li

Disclaimer: This is an electronically released document. The authenticity of this certificate can be verified on the IECEE Website "http://certificates.iecee.org"

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1271

8. Trend Smart CE Mexico S de RL de CV
   Avenida Sor Juana Ines de la Cruz
   de 19602 Nueva Tijuana,
   22435 Tijuana Baja California
   MEXICO

9. Envision Indústria de Produtos
   Eletrônicos Ltda.
   Av. Torquato Tapajós, 2236,
   Flores - CEP 69058-830 - Manaus/AM
   Brazil

10. TPV Technology (Thailand) Co., Ltd.
    No.267 Mu7,
    Tha Tum Sub- District,
    Si Maha Pho District,
    Prachin Buri Province, Thailand

11. GeneTouch Corporation
    No. 9, Neixi Rd., Luzhu Dist.,
    Taoyuan City 33852
    Taiwan

12. Dixon Technologies (India) Ltd.
    EMC-2, Shed No. 2,4,5,6 & 7, Near
    Tirupati Airport, Village Govindhavaram, Munagalapalem Post,
    Revenue Vikruthamala, Yerpedu Mandelam,
    District-Chittoor, Andhra Pradesh, 517526, India

13. Fábrica Austral de Productos Eléctricos
    S.A.
    Islas Malvinas 1180,
    Rio Grande (9420), Provincia de Tierra del Fuego,
    Antártida e Islas del Atlántico Sur, Argentina

Additional information (if necessary) Report Ref. No. : CN21218I 002

Date: 2022-05-09 Signature: Aegean Li

Disclaimer: This is an electronically released document. The authenticity of this certificate can be verified on the IECEE Website "http://certificates.iecee.org"

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1272

CERTIFICATE OF CONFORMITY

This Certificate indicates that the Applicant has satisfied the Intertek requirements for the application of the EPA ENERGY STAR Mark to the model(s) described in the Product(s) Covered section of the referenced Compliance Report when made in accordance with the conditions set forth in the Energy Efficiency Certification Agreement, the Certification Report and the Program Manual. This certificate is issued subject to the Applicant attaining, and remaining in, compliance with any separate EPA ENERGY STAR Program requirements necessary for use of the ENERGY STAR Mark. This document is the property of Intertek Testing Services and is not transferable.

Company:	Top Victory Electronics (Taiwan) Co., Ltd.	**OEM name:**	Top Victory Electronics (Taiwan) Co.,Ltd.
Address:	10F.,No.230,Liancheng Rd. Zhonghe City. Taipei Country 23553	**Address:**	10F.,No.230,Liancheng Rd. Zhonghe City. Taipei Country 23553
Country:	Taiwan	**Country:**	Taiwan
Contact:	David.Cheng	**Contact:**	David.Cheng
Phone:	+886-2-82261668-2375	**Phone:**	+886-2-82261668-2375
FAX:	+886-2-82261668-2375	**FAX:**	+886-2-82261668-2375
Email:	David.cheng@tpv-tech.com	**Email:**	David.cheng@tpv-tech.com

3rd-party Report Issuing Office: INTERTEK TESTING SERVICES LTD., SHANGHAI

Control Number: *4002603* **Authorized by:** Giovanna Daimondi

for L. Matthew Snyder, Certification Manager

This document supersedes all previous Certificate of Conformity for the noted Report Number.

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Intertek Testing Services NA Inc.
545 East Algonquin Road, Arlington Heights, IL 60005
Telephone 800-345-3851 or 847-439-5667 Fax 312-283-1672
www.intertek.com

Standard(s):	ENERGY STAR® Program Requirements for Displays Version 8.0
Product:	Display (LCD Monitor)
Models:	27E2DA(27E2);27E2QAE(27E2);27P2Q(27P2);27P2C(27P2)

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1273

1.0 Reference and Address			
Report Number	200302963SHA-003	Original Issued: 16-Apr-2020	Revised: None
Standard(s)	ENERGY STAR® Program Requirements for Displays Version 8.0		

Applicant	Top Victory Electronics (Taiwan) Co.,Ltd.	Manufacturer	TPV Electronics(Fujian) Co., Ltd
Address	10F.,No.230,Liancheng Rd. Zhonghe City. Taipei Country 23553	Address	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province
Country	Taiwan	Country	P.R.China
Contact	David.Cheng	Contact	Winter.Feng
Phone	+886-2-82261668-2375	Phone	+86-591-85285555
FAX	+886-2-82261668-2375	FAX	+86-591-85285447
Email	David.cheng@tpv-tech.com	Email	winter.feng@tpv-tech.com
Manufacturer 2	TPV Display Technology (Beihai) Co.,Ltd	Manufacturer 3	TPV Display Technology (China) Co., Ltd.
Address	China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road Beihai City,Guangxi	Address	No.106 Jinghai 3 Rd., BDA, Beijing City
Country	China	Country	China
Contact	Yin Tao	Contact	Nancy.Shang
Phone	18277949678	Phone	86(10)64326699-8312
FAX	86-779-2232270	FAX	NA
Email	yin.tao@tpv-tech.com	Email	lijia.shang@tpv-tech.com
Manufacturer 4	L&T Display Technology (Fujian) Ltd.	Manufacturer 5	TPV Display Technology(Wuhan)Co.,Ltd
Address	Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian	Address	Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan
Country	China	Country	China
Contact	Shan Xu	Contact	Zhe.Zhou
Phone	86(591)8651-5556	Phone	86(27)-6884 3822
FAX	86(591)8651-5556	FAX	86(27)-6884 3822
Email	shan.xu@lntdisplayfj.com	Email	zhe.zhou@tpv-tech.com

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Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1274

2.0 Product Description					
Product	Display (LCD Monitor)				
Brand Name	AOC				
Description	The product covered by this report is a Display (LCD Monitor)				
Models	27E2DA(27E2);27E2QAE(27E2);27P2Q(27P2);27P2C(27P2)				
Model Similarity	Model Name:27E2DA, 27E2QAE, 27P2Q,27P2C Model Number:27E2,27P2 27E2 is equipped with rotatable pivot and 27P2 without rotatable pivot. Different model name means different sales region.				
Ratings	100-240Vac,50/60Hz,1.5A				
Other Ratings	NA				
Date Available	10/25/2019	Market Availability	Yes	OEM	TPV Electronics(Fujian) Co. Ltd
Major Markets	Canada,Japan,Taiwan,United States				
Trans Type	Initial Certification: Model Meets ENERGY STAR Requirements				
Notes	NA				
Additional Model Details (Optional)	Model Name and Number	Identifying Information			
Original Certificate Actual Issued Date for Model Tested (Only Applies to Revised Reports)					NA

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1275

3.0 Product Photographs

Photo 1 - External View (front)

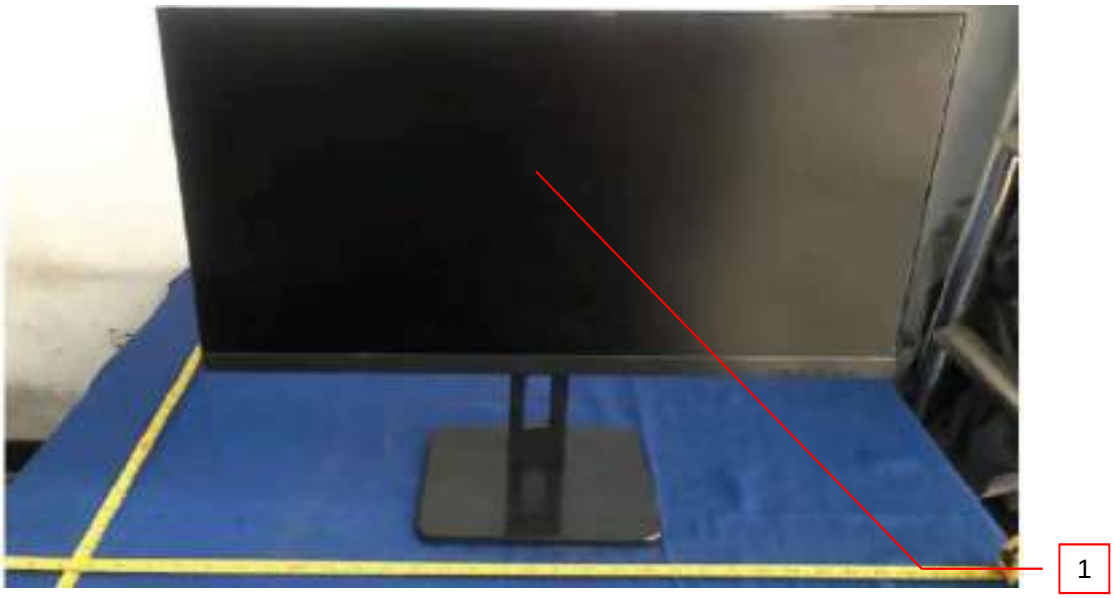


Photo 2 - External View (back)



Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1276

3.0 Product Photographs

Photo 3 - Main Board (715G9494)

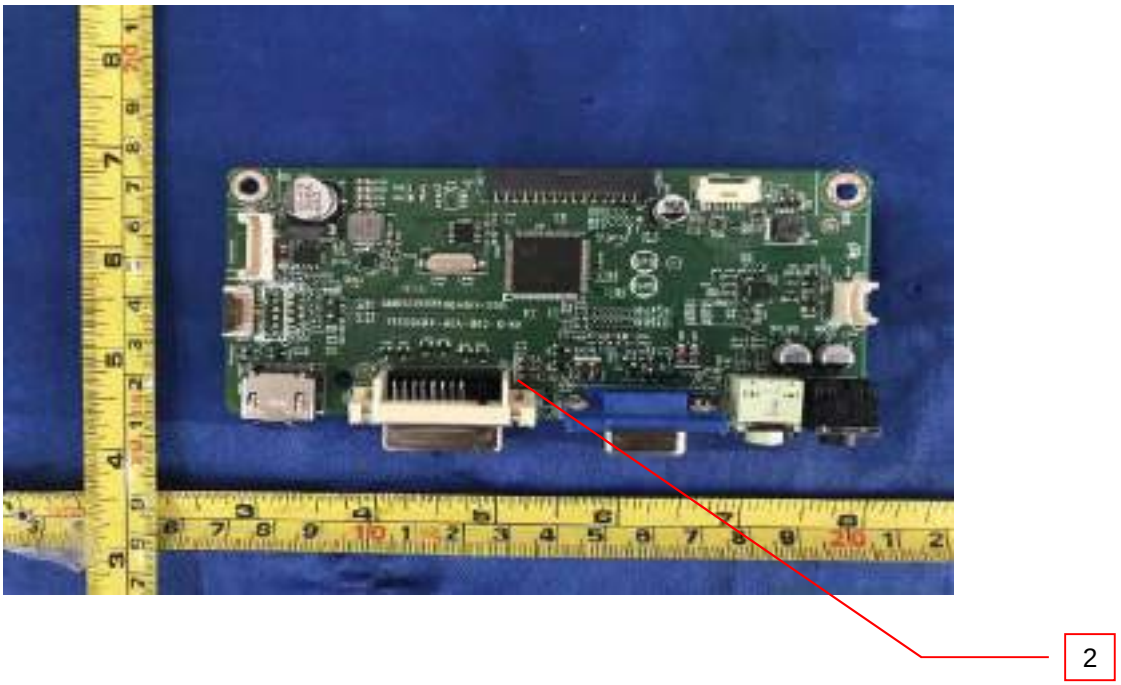


Photo 4- Main Board (715G9483)



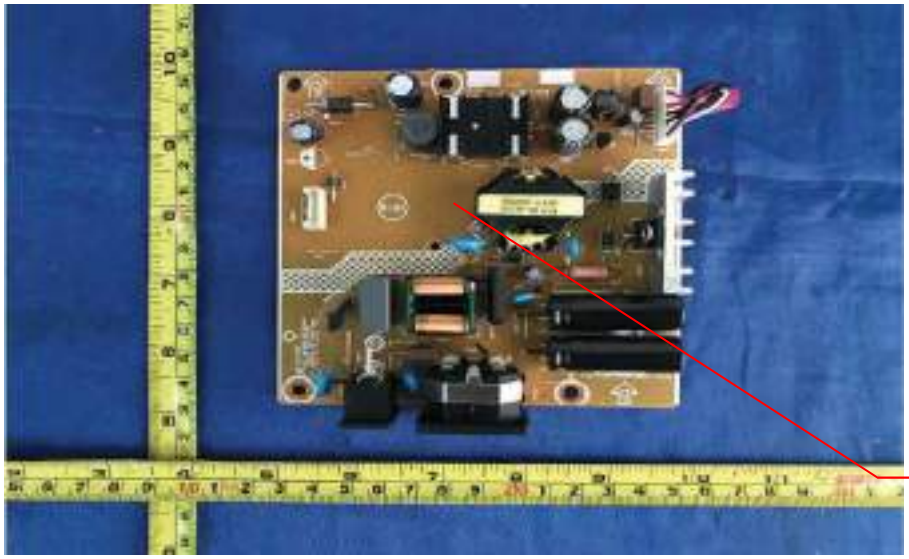
Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1277

3.0 Product Photographs

Photo 5- Main Board (715G9496)



Photo 6- Power Board (715G7610)



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4.0 Critical Components

Photo #	Item no.[1]	Name	Manufacturer/ trademark[2]	Type / model[2]	Technical data and securement means	Mark(s) of conformity [3]
1	1	LCD panel	TPV	TPM270WF1	27 inch,TFT type,with LED backlight	NR
3	2	Main Board	TPV	715G9494	I/P: 19Vdc, 2.5A 715G9494 is tested type.	NR
4	3			715G9483		NR
5	4			715G9496		NR
6	5	Power Board	TPV	715G7610	I/P:AC100-240V,50/60Hz,1.5A; O/P:max.19Vdc,2.5A	NR

NOTES:

1) Not all item numbers are indicated (called out) in the photos, as their location is obvious.

2) “Various“ means any type, from any manufacturer that complies with the "Technical data and securement means" and meets the "Mark(s) of conformity" can be used.

3) Indicates specific marks to be verified, which assures the agreed level of surveillance for the component. "NR" - indicates: a) Unlisted and only visual examination is necessary or b) marks are not required to be verified.

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5.0 Critical Unlisted CEC Components

Periodic Evaluation of Critical Unlisted Components by the Intertek Component Evaluation Centers (CEC) is not required under the INTERTEK ENERGY STAR Program.

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6.0 Critical Features
Critical Features/Components - An essential part, material, subassembly, system, software, or accessory of a product that has a direct bearing on the product's conformance to applicable requirements of the ENERGY STAR® Program Requirements. Listed Component - A component part, which has been previously Listed or Certified by an accredited Certification Organization with no restrictions and is used in the intended application within its ratings. Recognized Component - A component part, which has been previously evaluated by an accredited certification body with restrictions and must be evaluated as part of the basic product considering the restrictions as specified by the Conditions of Acceptability. Unlisted Component - A part that has not been previously evaluated to the appropriate designated component standard. It may also be a Listed or Recognized component that is being used outside of its evaluated Listing or component recognition.
Construction Details - For specific construction details, reference should be made to the photographs and descriptions. All dimensions are approximate unless specified as exact or within a tolerance. In addition to the specific construction details described in this Report, the following general requirements also apply.
1. Product Safety Compliance - NA
2. EMI Compliance - NA
3. Schematics - NA
4. Installation, Operating and Safety Instructions - Instructions for installation and use of this product are provided by the manufacturer. Refer to Illustration No.1-2 for details.
5. Package Markings - NA
6. Warranty Information - NA
7. Marking Label - Refer to Illustration No.3.for details.

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7.0 Illustrations

Illustration 1 - Installation and Safety instruction



Safety

National Conventions

The following subsections describe notational conventions used in this document.

Notes, Cautions, and Warnings

Throughout this guide, blocks of text may be accompanied by an icon and printed in bold type or in italic type. These blocks are notes, cautions, and warnings, and they are used as follows:

NOTE: A NOTE indicates important information that helps you make better use of your computer system.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates the potential for bodily harm and tells you how to avoid the problem. Some warnings may appear in alternate formats and may be unaccompanied by an icon. In such cases, the specific presentation of the warning is mandated by regulatory authority.

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Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1282

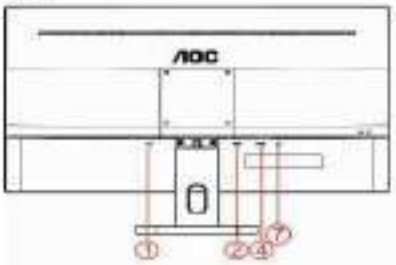
7.0 Illustrations

Illustration 2 - Installation and Safety instruction (Continued)

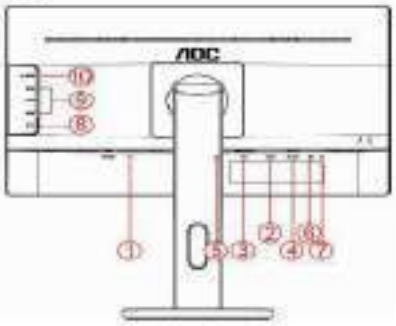
Connecting the Monitor

Cable Connections In Back of Monitor and Computer.

27E1H



27P1



1. Power
2. HDMI
3. DVI
4. Analog (D-Sub 15-Pin VGA cable)
5. DP
6. Audio in
7. Earphone out
8. USB upstream
9. USB downstream
10. USB charging

To protect equipment, always turn off the PC and LCD monitor before connecting.

1. Connect the power cable to the AC port on the back of the monitor.
2. Connect one end of the 15-pin D-Sub cable to the back of the monitor and connect the other end to the computer's D-Sub port.
3. (Optional – Requires a video card with HDMI port) - Connect one end of the HDMI cable to the back of the monitor and connect the other end to the computer's HDMI port.
4. (Optional – Requires a video card with DVI port) - Connect one end of the DVI cable to the back of the monitor and connect the other end to the computer's DVI port.
5. (Optional – Requires a video card with DP port) - Connect one end of the DP cable to the back of the monitor and connect the other end to the computer's DP port.
6. (Optional – Requires a video card with USB port) - Connect one end of the USB cable to the back of the monitor and connect the other end to the computer's USB port.
7. (Optional)Connect the audio cable to audio in port on the back of the monitor.
8. Turn on your monitor and computer.
9. Video content supporting resolution: VGA/DVI/HDMI/DP.

If your monitor displays an image, installation is complete. If it does not display an image, please refer Troubleshooting.

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Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1283

7.0 Illustrations

Illustration 3 - Marking Label



Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1284

8.0 Test Summary						
Evaluation Period	4/16/2020-4/16/2020				Project No.	200302963SHA
Sample Rec. Date	1-Apr-2020	Condition	Prototype		Sample ID.	0200401-87-078
Test Location	Intertek Testing Services Shanghai Limited EPA ID(1105997) Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China					
Test Procedure	Testing Lab				Test type	Qualification
Determination of the result includes consideration of measurement uncertainty from the test equipment and methods. The product was tested as indicated below with results in conformance to the relevant test criteria.						
The following requirements were evaluated:						

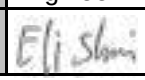
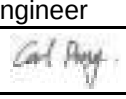
Required Submittal Information	Submittal Data
Model Name and/or Number tested	27E2DA(27E2)
Date tested	04/16/2020
Serial number of Unit tested	1 sample
ENERGY_STAR_Specification_Version*	8.0
Product_Type*	Monitor
Tiled_Display_System	
Maximum_Tiled_Configuration	
Panel_Type*	Other
Other_Panel_Type	TFT LCD
Diagonal_Screen_Size_in*	27
Screen_Area_sq_in*	311.67
Display_Contrast_Ratio*	1000
Native_Vertical_Resolution_lines*	1920
Native_Horizontal_Resolution_lines*	1080
Total_Native_Resolution_megapixels*	2.1
Native_Pixel_Density_Dp_pixels_sq_in*	6653
As_Tested_Screen_Refresh_Rate_Hz*	60
Maximum_Screen_Refresh_Rate_Hz*	60
Enhanced_Performance_Criteria*	No
Color_Gamut	
Reported_Contrast_Ratio_at_85_deg_Left_Horiz_Viewing_Angle	
Reported_Contrast_Ratio_at_85_deg_Right_Horiz_Viewing_Angle	
High_Dynamic_Range_HDR*	N/A
Other_Available_Interfaces	
Other_Features	
Signal_Interface*	HDMI 1.4
Other_Interface	
USB_C_with_Power_Delivery_Supported*	No
Maximum_Power_Delivery_W	
Other_Power_Source	
Does_Model_Have_a_Forced_Menu_at_Initial_Start_up*	No
Maximum_Measured_Luminance_cd_m_2*	327.9
Maximum_Reported_Luminance_cd_m_2*	250
As_shipped_Luminance_cd_m_2	296
As_tested_Luminance_cd_m_2*	200
On_Mode_Power_at_12_Lux_at_115_Volts_W	
On_Mode_Power_at_300_Lux_at_115_Volts_W	
Measured_On_Mode_Power_at_115_Volts_W	14.62
Reported_On_Mode_Power_at_115_Volts_W	14.62
Maximum_On_Mode_Power_Limit_for_Signage_Certification_W	
Measured_Sleep_Mode_Power_at_115_Volts_W	0.27
Reported_Sleep_Mode_Power_at_115_Volts_W	0.27
Measured_Disconnected_Sleep_Mode_Power_at_115_Volts_W	
Maximum_Sleep_Mode_Power_Limit_for_Signage_Certification_W	
Number_of_Sleep_Modes_in_Addition_to_Default_Sleep_Mode*	0
Other_Mechanism_for_Automatically_Entering_Sleep_or_Off_Mode	
Default_Delay_Time_to_Sleep_min	5

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8.0 Test Summary	
Measured_Off_Mode_Power_at_115_Volts_W	0.21
Reported_Off_Mode_Power_at_115_Volts_W	0.21
Measured_Total_Energy_Consumption_at_115_Volts_kWh	46.36
Reported_Total_Energy_Consumption_at_115_Volts_kWh	46.36
Max_Total_Energy_Consumption_Limit_for_Monitor_kWh	52.06
On_Mode_Power_at_12_Lux_at_230_Volts_W	
On_Mode_Power_at_300_Lux_at_230_Volts_W	
Measured_On_Mode_Power_at_230_Volts_W	14.51
Measured_Sleep_Mode_Power_at_230_Volts_W	0.28
Measured_Disconnected_Sleep_Mode_Power_at_230_Volts_W	
Measured_Off_Mode_Power_at_230_Volts_W	0.23
Measured_Total_Energy_Consumption_at_230_Volts_kWh	46.08
True_Power_Factor_PF_During_On_Mode_Testing_at_115_Volts_W	0.54
True_Power_Factor_PF_During_On_Mode_Testing_at_230_Volts_W	0.43
Color_Spaces_Supported*	sRGB
Available_Signal_or_Data_Interfaces*	DVI,HDMI,VGA
Model_Features*	Built-In Speakers
Features_Enabled_in_Default_On_Mode*	Built-In Speakers
Features_Enabled_in_Default_Sleep_Mode*	None
Wireless_Technologies_Supported*	None
Ethernet_Supported*	None
Power_Source*	Ac to dc internal power supply
Mechanism_for_Automatically_Entering_Sleep_or_Off_Mode*	Display Power Management Signaling
On_Mode_Power_at_12_Lux_at_100_Volts_50Hz_W	
On_Mode_Power_at_300_Lux_at_100_Volts_50Hz_W	
Measured_On_Mode_Power_at_100_Volts_50Hz_W	14.66
Measured_Sleep_Mode_Power_at_100_Volts_50Hz_W	0.27
Measured_Disconnected_Sleep_Mode_Power_at_100_Volts_50Hz_W	
Measured_Off_Mode_Power_at_100_Volts_50Hz_W	0.21
Measured_Total_Energy_Consumption_at_100_Volts_50Hz_kWh	46.48
On_Mode_Power_at_12_Lux_at_100_Volts_60Hz_W	
On_Mode_Power_at_300_Lux_at_100_Volts_60Hz_W	
Measured_On_Mode_Power_at_100_Volts_60Hz_W	14.66
Measured_Sleep_Mode_Power_at_100_Volts_60Hz_W	0.27
Measured_Disconnected_Sleep_Mode_Power_at_100_Volts_60Hz_W	
Measured_Off_Mode_Power_at_100_Volts_60Hz_W	0.21
Measured_Total_Energy_Consumption_at_100_Volts_60Hz_kWh	46.48

8.1 Signatures

A representative sample of the product covered by this report has been evaluated and found to comply with the applicable requirements of the standards indicated in Section 1.0.

Completed by:	Eli Shui	Reviewed by:	Carl Dong
Title:	Engineer	Title:	Engineer
Signature:		Signature:	

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9.0 Correlation Page For Multiple Listings			
The following products, which are identical to those identified in this report except for model number and Company name.			
BASIC LISTEE	Top Victory Electronics (Taiwan) Co., Ltd.		
Address	10F.,No.230,Liancheng Rd. Zhonghe City. Taipei Country 23553		
Country	Taiwan	EPA ID	1065104
Product	Display (LCD Monitor)		
Contact	David.Cheng		
Phone	+886-2-82261668-2375		
FAX	+886-2-82261668-2375		
Email	David.cheng@tpv-tech.com		

MULTIPLE LISTEE 1	None			
Address				
Country		EPA ID		
Contact				
Phone				
FAX				
Email				
Brand Name				
Date Available		Market Availability		OEM
Major Markets				
Trans Type				
Notes				
ASSOCIATED MANUFACTURER				
Address				
Country				

MULTIPLE LISTEE 1 MODELS		BASIC LISTEE MODELS
Additional Model Details (Optional)	Model Name and Number	Identifying Information

MULTIPLE LISTEE 2	None			
Address				
Country		EPA ID		
Contact				
Phone				
FAX				
Email				
Brand Name				
Date Available		Market Availability		OEM
Major Markets				
Trans Type				
Notes				
ASSOCIATED MANUFACTURER				
Address				
Country				

MULTIPLE LISTEE 2 MODELS		BASIC LISTEE MODELS
Additional Model Details (Optional)	Model Name and Number	Identifying Information

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10.0 General Information

The Applicant has agreed to produce products in accordance with the requirements of this report and to maintain compliance with all ENERGY STAR Product Specification requirements.

Changes to Product Design / Alternate Components

As part of this agreement, the Applicant also has agreed to notify Intertek and to request authorization prior to making any changes to the product (including but not limited to using alternate parts, components or materials) which may effect compliance with the ENERGY STAR Product Specification. Those parts, components or materials identified as critical have been listed in Section 4.0 of this report.

Product Surveillance

Under this Program, market surveillance is conducted on an annual basis. For each Product Type defined in the EPA ENERGY STAR Program, Intertek will select 10% of those certified products for Verification Testing in accordance with the requirements of the EPA ENERGY STAR Product Specification.

The primary source for products under Verification Testing will be the retail market. Applicants whose products are selected for Verification Testing are required to provide a list of locations where the product might be obtained. The Applicant is responsible for the cost of procurement and the Verification Tests. Should products not be readily available on the retail market, the Applicant is required to provide access to distribution warehouses to allow selection of those products. Should the product not be available on the retail market or if procurement from the retail market is not feasible, then alternate arrangements for Verification Testing will be made by the Intertek Certification Body.

As a general rule under the Verification Testing requirements, the products must achieve energy values within 5% of the required Tier Limit.

Compliance with ENERGY STAR Product Specifications under Verification Testing

Products found non-compliant with ENERGY STAR Product Specification under Verification Testing, will be reported to the EPA within 48 hours and the product removed from the ENERGY STAR Program. If it is determined during Verification Testing that changes have been made to product design or critical components, the Certification Body may increase Verification Testing frequency of those products.

10.1 Evaluation of Unlisted Components

Because Unlisted Components are uncontrolled, and they do not fall under a third party follow up program, Intertek may require these components to be tested and/or evaluated at least once annually, more often for certain components, as part of the independent certification process. The Unlisted Components in Section 5.0 require testing and/or evaluation as indicated.

Note to Intertek Follow Up Inspector: The Component Evaluation Center, CEC, will notify you in writing when these components must be selected and sent to the CEC for re-evaluation

Ship the samples to:
Intertek Testing Services Shanghai Limited
ETL Component Evaluation Center
Building No. 86, 1198 Qinzhou Road (North)
Shanghai 200233, China
Attn: Ms. Angela Han
Sample Disposition: Due to the destructive nature of the testing, all samples will be discarded at the conclusion of testing unless, the manufacturer specifically requests the return of the samples. The request for return must accompany the initial component shipment.

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11.0 Manufacturing and Production Tests

Manufacturing and Production tests are not required under the INTERTEK ENERGY STAR Program. However, Intertek encourages the use of such ongoing product testing to ensure compliance with the EPA ENERGY STAR Product Specifications.

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12.0 Revision Summary				
The following changes are in compliance with the declaration of Section 8.1:				
Date/ Proj # Site ID	Project Handler/ Reviewer	Section	Item	Description of Change
				None

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Certificate of Conformity

Certificado/Certificate
UL-BR 24.0764

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Reconhecer que o Solicitante/Acknowledge that the Certificate Holder

ENVISION INDÚSTRIA DE PRODUTOS ELETRONICOS LTDA

avaliou o produto/has had

MONITOR LCD / *LCD MONITOR*

ao qual atende aos requisitos do Programa de Certificação/evaluated and meets the requirements of the certification program

REQUISITOS DE AVALIAÇÃO DA CONFORMIDADE ANEXOS À PORTARIA INMETRO Nº 304 DE 06 DE NOVEMBRO DE 2023 /
CONFORMITY ASSESSMENT REQUIREMENTS ATTACHED TO INMETRO ORDINANCE Nº 304 AS OF NOV 06, 2023

e pode ostentar o Selo de Identificação da Conformidade do Sistema Brasileiro de Avaliação da Conformidade (SBAC) sobre o(s) produto(s) relacionado(s) neste certificado./
and can display the Conformity Identification Seal of the Brazilian Conformity Assessment System (SBAC) on the product(s) listed in this certificate.

Rafael Parada
Program Owner

UL do Brasil Certificações, organismo acreditado pela Coordenação Geral de Acreditação do INMETRO – CGCRE, segundo o registro Nº OCP-0029./
UL do Brasil Certificações, Certification Body accredited by Coordenação Geral de Acreditação do INMETRO - CGCRE according to the register Nr OCP-0029.

Certificado de conformidade válido somente acompanhado das páginas de 1 a 211
Certificate of Conformity valid only if accompanied from pages 1 to 211

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Solicitante/Certificate Holder (1635977)	**ENVISION INDúSTRIA DE PRODUTOS ELETRONICOS LTDA** Rodovia Anhanguera, km 26,5 – Armazém II, 4, 5 e 6 – Jardim Jaraguá 05275-000, SÃO PAULO, SP, Brazil C.N.P.J.: 04.176.689/0003-22
Fabricante/Manufacturer (227862)	**ENVISION INDúSTRIA DE PRODUTOS ELETRONICOS LTDA** Av Torquato Tapajos 2236, Flores, Manaus/AM, 69058-830, Brazil CNPJ: 04.176.689./0001-60
Modelo de certificação/ Certification model	5
Norma(s) aplicável(is)/ Applicable standards	See appendix for detials
Identificação UL/ UL identification	BR2467 / Vol.3 / Sec. 27, 28, 29, 30, 31, 32, 36, 22, 23, 24, 25, 38, 40, 41, 46, 48, 54, 56, 58, 60, 61, 62, 63, 64, 65, 71, 72, **75**
Quantidade importada/ Quantity imported	N/A
Unidade de medida/ Measurement unit	N/A
Lote ou No. de série/ Lot or serial number	N/A
Número e data da licença de importação/Number and import license date	N/A

Identificação da família/modelo/lote de produto(s) certificado(s)/Identification of the family/model/lot of certified product(s):

Marca/ Brand name	**Modelo/** Model	**Descrição/** Description	**Código de barras/** Bar code number
AOC	236LM00014, *2470*****	(* = A to Z, a to z, 0 to 9, "+", "-", "/", "\" or blank. Represent different enclosure color and sales regions for marketing purpose only, no technical difference)	N/A
AOC	G2460PF, 240LM00010, G2460VQ6, 240LM00016	N/A	N/A
AOC	215LM00041, *2270******	(* can be 0-9, A-Z, a-z,-, \, /, + or blank for marketing purpose)	N/A
AOC	185LM000**	(* can be 0-9, A-Z, a-z, -, \, /, + or blank for marketing purpose.)	N/A
AOC	22B1, 22B1H, 22********	(* can be 0-9, A-Z, a-z, –, \, /, + or blank, represent different enclosure colour for marketing purpose)	N/A
AOC	24B1, 24B1H, 24B1XHM, 24****************	(The symbol"*" can be 0-9, AZ, a-z, "+", "-", "/", "\" or blank, which is not influencing on safety.)	N/A
AOC	G2260VWQ6, 215LM00033	N/A	N/A
AOC	315LM00019, AG322FCX	N/A	N/A
AOC	22P1, **22P1********	(* can be 0-9, A-Z, a-z, -, \, /, + or blank, represents different enclosure color for marketing purpose)	N/A

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AOC	24P1, **24P1********	(* can be 0-9, A-Z, a-z, -, \, /, + or blank, represents different enclosure color for marketing purpose)	N/A
AOC	9P1, **9P1********	(* can be 0-9, A-Z, a-z, -, \, /, + or blank, represents different enclosure color for marketing purpose)	N/A
AOC	AG251********, 250LM000**	(The * in the model name can be 0 to 9, A to Z or blank for marketing use only.)	N/A
AOC	24G2, **24G2********	(The symbol "*" can be 0-9, A-Z, a-z,"+", "-", "/", "\", sign absence or blank, which is not influencing on safety.)	N/A
AOC	27G2, **27G2********	(* can be 0-9, A-Z, a-z, "+", "-", "/", "\" or blank, Represent different enclosure color and sales region for marketing purpose.)	N/A
AOC	323FCX, 323QCX, **323********	(* can be 0-9, A-Z, a-z, – , \ , / , + or blank for marketing purpose only, no technical difference.)	N/A
AOC	22P2, 22P2********	(* can be 0-9, A-Z, a-z, – , \ , / , + or blank, represent different enclosure colour for marketing purpose)	N/A
AOC	27B1,27B1HM, **27B1******	(The symbol "*" can be 0-9, A-Z, a-z, "+", "-","/", "\" or blank)	N/A
AOC	U27P2, **27P2********	(The symbol "*" can be 0-9, A-Z, a-z, "+", "-","/", "\" or blank)	N/A
AOC	25G3ZM, 25G3********	(* can be 0-9, A-Z, a-z, –, \, /, + or blank, represent different sales region and enclosure colour for marketing purpose.)	N/A
AOC	**24B30********, **24B35********	(*=A-Z, a-z, 0-9, /, +, -, \ or blank)	N/A
AOC	27G2E1, 27G2********, C27G2********, C*27G2********, Q27G2********, U27G2********	(*=A-Z, a-z, 0-9, /, +, -, \ or blank)	N/A
AOC	24B3HMF2, **24B3*******	(* can be 0-9, A-Z, a-z, –, \, /, + or blank for marketing purpose only, no technical difference.)	N/A
AOC	22B3HMF, 22B3********, Q22B3********	(* can be A-Z, a-z, 0-9, blank or symbol +, -, /, \, or sign absence or no mark or no symbol).	N/A
AOC	22B30HM2, 22B35HM2, **22**********	(* can be A-Z, a-z, 0-9, blank or symbol +, -, /, \, or sign absence or no mark or no symbol)	N/A
AOC	Q27B30, 27B350H, 27B35H, **27**********	(* can be A-Z, a-z, 0-9, blank or symbol +, -, /, \, or sign absence or no mark or no symbol)	N/A
AOC	27G4, 27G4/P, **27G4********	(*=0-9,A-Z,a-z,+, -, /, \ or blank)	N/A
AOC	24G4, 24G4/P, **24G4*******	(*=0-9,A-Z,a-z,+, -, /, \ or blank)	N/A
AOC	**24E3UM, 24E3UF, 24E3QF, 24E3**********, Q24E3**********	**(* can be 0-9, A-Z, a-z, –, \, /, + or blank for marketing purpose only, no technical difference.)**	**N/A**

Identificação da(s) versão(ões) do(s) modelo(s) de produto(s) certificado(s)/Identification of version(s) of certified product(s) model(s):

Código do modelo/ Model code	**Descrição do modelo/** Model description	**Versão/** Version	**Código de barras/** Bar code number
N/A	N/A	N/A	N/A

Informações de ensaios/Test information:

Modelo/Model: 236LM00014, *2470***

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50080822 001	**8 de maio de 2017** May 8, 2017
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-11412C077D	**27 de fevereiro de 2017** February 27, 2017

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Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-FICE-1-1412C077E	**27 de abril de 2017** April 27, 2017

Modelo/Model: G2460PF, 240LM00010, G2460VQ6, 240LM00016

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50080813 001	**4 de maio de 2017** May 4, 2017
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology (SuZhou) Co., Ltd.*	SECE1505118-A	**1 de abril de 2017** April 1, 2017
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-1611C130	**28 de novembro de 2016** November 28, 2016
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology Corporation Test Laboratory*	TEFD1506145-A	**25 de julho de 2016** July 25, 2016
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-FICE-1-1611C130	**28 de novembro de 2016** November 28, 2016

Modelo/Model: 215LM00041, *2270****

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50083922 001	**1 de junho de 2017** June 1, 2017
Relatório de ensaio emitido por / *Test report issued by* *Audix Technology (Shenzhen) Co., Ltd.*	ACS-E15423-1	**21 de maio de 2018** May 21, 2018
Relatório de ensaio emitido por / *Test report issued by* *AUDIX Technology Corporation, EMC Department*	EM-F150563A	**25 de julho de 2016** July 25, 2016

Modelo/Model: 185LM000**

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50080564 001	**15 de maio de 2017** May 15, 2017
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology(Suzhou) Co., Ltd.*	SECE1609083	**23 de setembro de 2016** September 23, 2016
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology Corporation Test Laboratory*	TEFD1609132	**3 de novembro de 2016** November 4, 2016

Modelo/Model: 22B1, 22B1H, 22******

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50117327 001	**10 de janeiro de 2018** January 10, 2018
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50117327 002	**25 de março de 2022** March 25, 2022
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-1712C238	**10 de janeiro de 2018** January 10, 2018
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-FICE-1-1712C238	**10 de janeiro de 2018** January 10, 2018
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-1905C011E	**9 de junho de 2022** June 9, 2022

Modelo/Model: 24B1, 24B1H, 24B1XHM, 24********

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	17061025 001	**29 de janeiro de 2018** January 29, 2018
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	17061025 002	**28 de abril de 2019** April 28, 2019

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Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	17061025 003	**19 de agosto de 2021** August 19, 2021
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	17061025 004	**26 de abril de 2022** April 26, 2022
Relatório de ensaio emitido por / *Test report issued by Intertek Testing Services Shanghai*	**240600098SHA-001**	**19 de junho de 2024** June 19, 2024
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1801C141	**30 de janeiro de 2018** January 30, 2018
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1801C141	**30 de janeiro de 2018** January 30, 2018
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1801C141G	**20 de maio de 2022** April 20, 2022
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	**BTL-EMC-1-1904C060F**	**12 de junho de 2024** June 12, 2024

Modelo/Model: G2260VWQ6, 215LM00033

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50163485 001	**30 de julho de 2018** July 30, 2018
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology (Suzhou) Co., Ltd.*	SECE1709022-A	**31 de maio de 2018** May 31, 2018
Relatório de ensaio emitido por / *Test report issued by Cerpass Technology Corporation Test Laboratory*	TEFD1709118-B	**31 de maio de 2018** May 31, 2018

Modelo/Model: 315LM00019, AG322FCX

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50134159 001	**30 de março de 2018** March 30, 2018
Relatório de ensaio emitido por / *Test report issued by BTL Inc. (China)*	BTL-EMC-1-1607C046	**27 de março de 2018** March 27, 2018
Relatório de ensaio emitido por / *Test report issued by BTL Inc. (Taiwan)*	BTL-FICE-1-1607C046	**26 de julho de 2016** July 26, 2016

Modelo/Model: 22P1, **22P1******

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50117328 001	**22 de janeiro de 2018** January 22, 2018
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50117328 002	**6 de março de 2018** March 6, 2018
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1801C204	**17 de abril de 2018** April 17, 2018
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1801C204	**17 de abril de 2018** April 17, 2018

Modelo/Model: 24P1, **24P1******

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by TÜV Rheinland (Shenzhen) Co., Ltd.*	50123526 001	**15 de março de 2018** March 15, 2018
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-EMC-1-1801C227	**26 de fevereiro de 2018** February 26, 2018
Relatório de ensaio emitido por / *Test report issued by BTL Inc.*	BTL-FICE-1-1801C227	**13 de fevereiro de 2018** February 13, 2018

Modelo/Model: 9P1, **9P1******

Laboratório de ensaio/	**Relatório de ensaio/**	**Data de emissão/**

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Certificado de Conformidade

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Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
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June 6, 2024

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Validade / ***Expiration***
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Testing laboratory	Test report	Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50127813 001	**2 de abril de 2018** April 2, 2018
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-1802C098	**26 de março de 2018** March 26, 2018
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-FICE-1-1802C098	**26 de março de 2018** March 26, 2018

Modelo/Model: AG251******, 250LM000****

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* *Nemko Shanghai Ltd. Shenzhen Branch*	373638	**24 de abril de 2019** April 24, 2019
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-1904C132	**13 de maio de 2019** May 13, 2019

Modelo/Model: 24G2, **24G2******

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	17061072 001	**2 de maio de 2018** May 2, 2018
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	17061072 002	**17 de junho de 2019** June 17, 2019
Relatório de ensaio emitido por / *Test report issued by* Intertek Testing Services (Shanghai FTZ) Co., Ltd.	**240800250SHA-001**	**20 de agosto de 2024** August 20, 2024
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology (Suzhou) Corporation*	SECE1906151	**3 de agosto de 2019** August 3, 2019
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology Corp.*	TEFD1906255	**3 de agosto de 2019** August 3, 2019
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-1905C010	**23 de julho de 2019** July 23, 2019
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-FICE-1-1905C010	**23 de julho de 2019** July 23, 2019
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	**BTL-EMC-1-2104C082E**	**31 de agosto de 2023** August 23, 2023

Modelo/Model: 27G2, **27G2******

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	17061072 001	**2 de maio de 2018** May 2, 2018
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	17061072 002	**17 de junho de 2019** June 17, 2019
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology (Suzhou) Corporation*	SECE1906151	**3 de agosto de 2019** August 3, 2019
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology Corp.*	TEFD1906255	**3 de agosto de 2019** August 3, 2019
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-EMC-1-1905C010	**23 de julho de 2019** July 23, 2019
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc.*	BTL-FICE-1-1905C010	**23 de julho de 2019** July 23, 2019

Modelo/Model: 323FCX, 323QCX, **323******

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50306701 001	**11 de novembro de 2019** November 11, 2019
Relatório de ensaio emitido por / *Test report issued by* *Cerpass Technology (Suzhou) Co., Ltd.*	SECE1910074	**1 de novembro de 2019** November 1, 2019

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Modelo/Model: 22P2, 22P2*****

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50349572 001	**30 de março de 2020** March 30, 2020
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50349572 002	**4 de junho de 2020** June 4, 2020
Relatório de ensaio emitido por / *Test report issued by* *BTL INC.*	BTL-EMC-1-2001C075A	**28 de junho de 2020** June 28, 2020
Relatório de ensaio emitido por / *Test report issued by* *BTL INC.*	BTL-FICE-1-2001C075	**30 de março de 2020** March 30, 2020

Modelo/Model: 27B1,27B1HM, **27B1****

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	CN22Q3BH 001	**4 de março de 2020** March 4, 2020
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	CN22Q3BH 002	**18 de maio de 2020** May 18, 2020
Relatório de ensaio emitido por / *Test report issued by* *Audix Technology (Shenzhen) Co., Ltd*	ACS-E22053	**25 de março de 2020** March 25, 2020
Relatório de ensaio emitido por / *Test report issued by* *Audix Technology (Shenzhen) Co., Ltd*	ACS-F22047	**25 de março de 2020** March 25, 2020
Relatório de ensaio emitido por / *Test report issued by* *BTL INC.*	BTL-EMC-1-1904C077D	**6 de junho de 2020** June 6, 2020

Modelo/Model: U27P2, **27P2******

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50337659 001	**18 de março de 2020** March 18, 2020
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50337659 002	**10 de agosto de 2020** August 10, 2020
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50337659 003	**30 de junho de 2021** June 30, 2021
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	50337659 004	**5 de maio de 2022** May 5, 2022
Relatório de ensaio emitido por / *Test report issued by* *BTL INC.*	BTL-EMC-1-2003C125A	**9 de maio de 2022** May 9, 2022

Modelo/Model: 25G3ZM, 25G3******

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 001	**13 de maio de 2021** May 13, 2021
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 002	**14 de fevereiro de 2022** February 14, 2022
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 003	**11 de julho de 2022** July 11, 2022
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc. (Dongguan)*	BTL-EMC-1-2104C184B	**12 de junho de 2023** June 12, 2023

Modelo/Model: **24B30******, **24B35********

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 001	**26 de setembro de 2023** September 26, 2023

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Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 002	**24 de novembro de 2023** November 24, 2023
Relatório de ensaio emitido por / *Test report issued by* *TÜV Rheinland (Shenzhen) Co., Ltd.*	60436664 003	**2 de novembro de 2023** November 2, 2023
Relatório de ensaio emitido por / *Test report issued by* *BTL Inc. (Dongguan)*	BTL-EMC-1-2104C184B	**5 de janeiro de 2024** January 5, 2024

Modelo/Model: 27G2E1, 27G2******, C27G2********, C*27G2********, Q27G2********, U27G2********

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES221100672801	**28 de dezembro de 2022** December 28, 2022
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES230500304601	**28 de junho de 2023** June 28, 2023
Relatório de ensaio emitido por / *Test report issued by* BTL Inc. (Dongguan)	BTL-EMC-1-2207C151B	**23 de setembro de 2023** September 23, 2023

Modelo/Model: 24B3HMF2, **24B3*****

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES240100059701	**6 de fevereiro de 2024** February 6, 2024
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES240100059701 (Correction 1)	**7 de março de 2024** March 6, 2024
Relatório de ensaio emitido por / *Test report issued by* Shenzhen UnionTrust Quality and Technology Co., Ltd.	2310167389EMC-1	**27 de novembro de 2023** November 27, 2023
Relatório de ensaio emitido por / *Test report issued by* Shenzhen UnionTrust Quality and Technology Co., Ltd.	2403079950EMC-1	**14 de março de 2024** March 14, 2024

Modelo/Model: 22B3HMF, 22B3******, Q22B3********

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES230200081401	**28 de abril de 2023** April 28, 2023
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES230200081401A1	**30 de janeiro de 2024** January 30, 2024
Relatório de ensaio emitido por / *Test report issued by* Tianjin Dongdian Testing Service Co., Ltd.	DDT-B23030305-1E04	**27 de março de 2023** March 27, 2023

Modelo/Model: 22B30HM2, 22B35HM2, **22********

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES231200774901	**4 de janeiro de 2024** January 4, 2024
Relatório de ensaio emitido por / *Test report issued by* BTL INC.	BTL-EMC-1-2312C138	**15 de janeiro de 2024** January 15, 2024

Modelo/Model: Q27B30, 27B30H, 27B35H, **27********

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by*	SZES231100735901	**2 de janeiro de 2024** January 2, 2024

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SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch		
Relatório de ensaio emitido por / *Test report issued by* BTL INC.	BTL-EMC-1-2401C032	**30 de janeiro de 2024** January 30, 2024

Modelo/Model: 27G4, 27G4/P, **27G4******

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES230800493401	**26 de setembro de 2023** September 26, 2023
Relatório de ensaio emitido por / *Test report issued by* Tianjing Dongdian Testing Service Co., Ltd.	DDT-B23090108-2E01	**13 de setembro de 2023** September 13, 2023
Relatório de ensaio emitido por / *Test report issued by* Tianjing Dongdian Testing Service Co., Ltd.	DDT-B24040810-1E01	**29 de abril de 2024** January 29, 2024
Relatório de ensaio emitido por / *Test report issued by* Tianjing Dongdian Testing Service Co., Ltd.	DDT-B23090108-2E02	**13 de setembro de 2023** September 13, 2023

Modelo/Model: 24G4, 24G4/P, **24G4******

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	SZES230800493901	**8 de setembro de 2023** September 8, 2023
Relatório de ensaio emitido por / *Test report issued by* Tianjing Dongdian Testing Service Co., Ltd.	DDT-B23082413-1E01	**11 de setembro de 2023** September 11, 2023
Relatório de ensaio emitido por / *Test report issued by* Tianjing Dongdian Testing Service Co., Ltd.	DDT-B23082413-1E02	**12 de setembro de 2023** September 12, 2023

Modelo/Model: 24E3UM, 24E3UF, 24E3QF, 24E3********, Q24E3**********

Laboratório de ensaio/ Testing laboratory	**Relatório de ensaio/** Test report	**Data de emissão/** Issue date
Relatório de ensaio emitido por / *Test report issued by* TÜV Rheinland (Shenzhen) Co., Ltd.	CN22VYOG 001	**16 de agosto de 2022** August 16, 2022
Relatório de ensaio emitido por / *Test report issued by* TÜV Rheinland (Shenzhen) Co., Ltd.	CN22VYOG 002	**25 de maio de 2023** May 25, 2023
Relatório de ensaio emitido por / *Test report issued by* TÜV Rheinland (Shenzhen) Co., Ltd.	CN22VYOG 003	**20 de setembro de 2023** September 20, 2023
Relatório de ensaio emitido por / *Test report issued by* TÜV Rheinland (Shenzhen) Co., Ltd.	CN22VYOG 004	**5 de setembro de 2024** September 5, 2024
Relatório de ensaio emitido por / *Test report issued by* Tianjing Dongdian Testing Service Co., Ltd.	DDT-B24081309-1E01	**27 de agosto de 2024** August 27, 2024
Relatório de ensaio emitido por / *Test report issued by* Tianjing Dongdian Testing Service Co., Ltd.	DDT-B24081309-1E02	**27 de agosto de 2024** August 27, 2024

Informações de auditoria/Audit information:

Local da auditoria/Audit location	**Data de realização/**Perform date
Tratamento de reclamações/Complaint handling ENVISION INDUSTRIA DE PRODUTOS ELETRONICOS LTDA	**6 de maio de 2024** May 6, 2024
Fabricante/ Manufacturer ENVISION INDUSTRIA DE PRODUTOS ELETRONICOS LTDA	**12 de março de 2024** March 12, 2024

Informações adicionais/Additional information:

N/A

Observações/Observations:

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Certificado de Conformidade

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1. A validade deste Certificado de Conformidade está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações da UL do Brasil Certificações previstas no RAC específico. Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro./
   The validity of this Certificate of Conformity is linked to the performance of maintenance assessments and treatment of possible non-conformities in accordance with the guidelines of UL do Brasil Certifications provided for in the specific Conformity Assessment Regulation. To check the updated condition of regularity of this Certificate of Conformity, the Inmetro database of certified products and services must be consulted.

2. Este certificado aplica-se aos equipamentos (produtos) idênticos ao protótipo avaliado e certificado, manufaturados na(s) unidade(s) fabril(is) mencionada (s) acima./
   This certificate applies to the products that are identical to the prototype investigated, certified and manufactured at the production site mentioned in this certificate.

3. Qualquer alteração no produto, incluindo a marcação, invalidará o presente certificado, salvo se o solicitante informar por escrito à UL do Brasil Certificações sobre esta modificação, a qual procederá à avaliação e decidirá quanto à continuidade da validade do certificado./
   Any non-authorized changes performed in the product, including marking, will invalidate this certificate. UL do Brasil Certificações must be notified about any desired change. This notification will be analyzed by UL do Brasil Certificações that will decide about certificate force.

4. Esta autorização está vinculada a um contrato e para o escopo acima citado./
   This license is related to a commercial proposal and to the scope above cited.

Histórico de revisões/Revisions history:

Revisão/ Review	**Data/** Date	**Descrição da revisão/** Revision description
04	**1 de outubro de 2024** *October 1, 2024*	**- Adicionar modelo 24E3UM, 24E3UF, 24E3QF, 24E3***************, Q24E3*************.** *- Add model 24E3UM, 24E3UF, 24E3QF, 24E3***************, Q24E3*************.*
03	**9 de setembro de 2024** *September 9, 2024*	**Para o modelo: 24B1, 24B1H, 24B1XHM, 24**************** &** **- Alterar o modelo de 24B1, 24B1H, 24**************** para 24B1, 24B1H, 24****************** **- Alterações de componentes.** **- Alterar laboratório de testes: Intertek Testing Services Shanghai.** **Para o modelo: 24G2, **24G2********** **- Atualizar o padrão de IEC 60950 para IEC 62368.** **- Placa de alimentação de comutação tipo embutida 715G9611.** **- Placa principal embutida 715GB201 fornecida pela saída secundária da placa de alimentação mencionada acima.** **- Alterar laboratório de testes: Intertek Testing Services (Shanghai FTZ) Co., Ltd..** *For model: 24B1, 24B1H, 24B1XHM, 24**************** &* *- Change the model from 24B1, 24B1H, 24**************** to 24B1, 24B1H, 24***************** *- Components changes.* *- Change testing laboratory: Intertek Testing Services Shanghai.* *For model: 24G2, **24G2********* *- Upgrade standard from IEC 60950 to IEC 62368.* *- Building-in type switching power supply board 715G9611.* *- Building-in main board 715GB201 supplied by secondary output of power board mentioned above.* *- Change testing laboratory: Intertek Testing Services (Shanghai FTZ) Co., Ltd..*
02	**1 de julho de 2024**	**Adicionar novo modelo: 24G4, 24G4/P, **24G4**********

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	July 1, 2024	**-**Add new model: 24G4, 24G4/P, **24G4********
01	**27 de junho de 2024** *June 27, 2024*	**Adicionar novo modelo: 27G4, 27G4/P, **27G4******** ** *- Add new model: 27G4, 27G4/P, **27G4********
00	**6 de junho de 2024** *June 6, 2023*	**Emissão inicial com recertificação do certificado UL-BR 21.1192.** / *Initial Issue with renewall of certificate UL-BR 21.1192*
A última revisão substitui e cancela as anteriores/ The last review replaces and cancels the previous ones		

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Anexo I/Attachment I:

Appendix A **(Modelo/Model: 236LM00014, *2470*****)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: AC 100-240V, 50/60 Hz, 1.5 A; Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013; CISPR 32:2012 Class B, CISPR 24: 2010, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6:2013/COR1:2015, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel with LED backlight for 23.6 inch models	TPV	TPM236H* (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 18.6W; LED Array Voltage: 56V	--	Tested in equipment
Alt.	IVO	M236MWF* (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 17.7W; LED Array Voltage: 31.5V	--	Tested in equipment
Alt.	BOE	HM236WU*-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 18.7W; LED Array Voltage: 37.4V	--	Tested in equipment
Alt.	CHIMEI INNOLUX	M236H**-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 19.09W; LED Array Voltage: 47.6V	--	Tested in equipment
Alt.	TPV	TPM236WF*-****** (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 22.4W; LED Array Voltage: 44.8V	--	Tested in equipment
Alt.	BOE	HR236WU*-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.6" TFT type, with LED back light, power consumption: 26.7W; LED Array Voltage: 44.2V	--	Tested in equipment
Plastic Enclosure	Cheil	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+), GC-0700(+), GC-1017(+), VE-1890(+), TP-1100(+), BF-0675(+), BF-0670F, NH-1017T, NH-1017(+), BF-0677(+), HS-7000RA, HG-0760(+)	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E115797)
Alt.	Grand	D-150, D-1000A	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E88637)
Alt.	Chi Mei	PA-757(+), PH-88	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E196075)
Alt.	BASF	GP-35, GP-22, 495F	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E41871)
Alt.	Bayer	FR2000, FR3005	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E41613)
Alt.	LG	HF-350, HF-380, AF-312T1, AF-342T1, GN-5001TF(#), GN-5001RFD, GN-5008A-F, SE750(#), XG-568, XG-569C, GP-1000L, SE-750, GN-5001RF, GN-5001RFT, GN-5008HF	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E67171)
Alt.	Teijin	TN-7500, TN-7500F(#) MN-3600H, MN-3600HA	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E98529, E244324)
Alt.	HINGLONG	HL-ABS-PCR85; HL-ABS-PCR65	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E345434)
Alt.	STYRON	STYRON A-TECH 1400	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E73656)
Alt.	KingFa	5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, RD-900, HIPS-510(H)	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E171666)
Alt.	Haier	HRABS-RS, HRABS-HG, CR-3002	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E230779)
Alt.	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E345434)
Alt.	ORINKO	ABS-3070H	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E115797)

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Metal Enclosure except for bottom side	Interchangeable	Interchangeable	Metallic, thickness 0.4 mm min.	--	--
Metal Enclosure on bottom side	Interchangeable	Interchangeable	Metallic, thickness 0.81 mm min.	--	--
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C, thickness: 1.50mm	UL 94, UL 796	UL
Base stand	Interchangeable	Interchangeable	HB or better	UL 94	UL
Barrier for covering opening in bottom and top of metal enclosure	Interchangeable	Interchangeable	Min. V-1 or better, min. 0.4mm thickness	UL 94	UL
Power Supply with LED driver board, type No. 715G5527 by TPV					
Appliance Inlet (CN901)	Inalways Corporation Co., Ltd.	0707-1, 0711-2, 0714	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S SA-4S-1	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	DELIKANG/ Douling	CDJ-3 CDJ-3-1	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Solteam Electronics Co., Ltd.	ST-01	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	TECX	TU-301-AP, TU-301-S, TU-301-SP, TU-301-A	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Yueqing Hongchang	DB-14	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Wickmann	392, 382-series	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Littelfuse	215 series, 677 series, 392, 382	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5 series	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T3.15AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Fuse (F902 for L.P.S +5V)	Conquer	MET, MST, PTU	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Wickmann	392, 382-series	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Littelfuse	215 series, 677 series, 392, 382	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5 series	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Alt.	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T5AL, Min.250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Y- Capacitor (C902,C903) (Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Yinan Don	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL

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Alt.	Haohua	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Wansheng	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	TDK	CS, CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Samwha	SD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Murata	KH, KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	JYA-NAY	JY, JN	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Success	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Hongming	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Y- Capacitor (C900) (Y1 type) (optional)	Walsin	AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Yinan Don	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Haohua	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	TDK	CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Murata	KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	JYA-NAY	JN	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Success	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Hongming	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
X-Capacitor (C904) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Hua Jung	MKP	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC (Semko), UL
Alt.	Faratronic	MKP62	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Europtronic	MPX	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Europtronic	MPX2	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Liow Gu	GS-L	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	EPCOS	B3292#	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Arcotronics	R.46	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC(IMQ), UL
Alt.	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.22 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, int.cr= thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko, Nemko
Alt.	Vishay Semiconductor	TCET1103	Di=0.6mm, int.cr=4.7mm, ext.cr=8.4mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko
Alt.	Everlight Electronics Co., Ltd.	EL817	Di=0.5mm, int.cr=6.0mm, ext.cr=7.7mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko, Nemko
Alt.	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko
Alt.	Lite-on	LTV-817	Di=0.4mm, int.cr=4.0mm, ext.cr=8.0m, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL
Alt.	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Fimko, Nemko
Alt.	TOSHIBA	TLP421F	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko
Alt.	TOSHIBA	TLP781F, TLP781	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN/EN 60747-5-2 IEC/EN 60950-1	VDE, UL, Semko, Fimko
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 3Ω, Min. 2A, 25°C	--	--
Bleeder Resistor (R900, R901, R902)	Interchangeable	Interchangeable	Max. 1M ohm, min. 1/4 W (three in series, located after fuse)	--	--

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Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2A, Min 600V.	--	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150 µF, Max. 450 V, 105 °C	--	--
Current sense resistor (R903)	Interchangeable	Interchangeable	0.39ohm, 2W	--	--
Line Choke (L901) (optional)	Dadon	73G174- 65-H	105°C	--	--
Alt.	TPV	73G174- 65-V	105°C	--	--
Alt.	Tonation	73G174- 65-YS	105°C	--	--
Alt.	YUVA	73G174- 65-N	105°C	--	--
Alt.	TDK	73G174- 65-T	105°C	--	--
Alt.	ASET	73G174- 65-X	105°C	--	--
Alt.	TaiCheng	73G174- 65-S	105°C	--	--
Alt.	Litai	73G174- 65-L	105°C	--	--
Alt.	LI SHIN	73G174- 65-LS	105°C	--	--
Transformer (T901) Alt.)	CHENPING	80GL19P-39-CP	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820; PM-9630	V-0, Phenolic, 150°C	UL 94	UL
Margin Tape	3M Symbio	44(a) 35661$	130°C	UL 510	UL
Insulation Tape	Jingjang	CT(c)	130°C	UL 510	UL
Transformer (T901) Alt.)	YUVA	80GL19P-39-N	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin Tape	Jingjang Symbio	WF(c) 35661$	130°C	UL 510	UL
Insulation Tape	Jingjang	CT(c)	130°C	UL 510	UL
Transformer (T901) Alt.)	TPV	80GL19P-39-V	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin Tape	Symbio	35661$	130°C	UL 510	UL
Insulation Tape	Symbio	35660Y*d	130°C	UL 510	UL
Transformer (T901) Alt.)	TAICHANG	80GL19P-39-S	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin Tape	Jingjang	WF(c)	130°C	UL 510	UL
Insulation Tape	Jingjang	CT(c)	130°C	UL 510	UL
Power Supply with LED driver board, type No. 715G4497 by TPV					
Appliance Inlet (CN901)	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Shenzhen Delikang	CDJ-3, CDJ-3-1	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Solteam Electronics Co., Ltd.	ST-01	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	TECX-UNIONS	TU-301 series	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Alt.	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S	10A, Min.250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Ever Island Electric Co. ltd and Walter electric	2000, 2010	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Littelfuse	392, 382	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL

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Fuse (F902, F903 for L.P.S +5V, +5V1)	Conquer	MET, MST, PTU	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Ever Island Electric Co. Ltd and Walter Electric	2000, 2010	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.	Littelfuse	392, 382	T4AL, Min.250Vac	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Y-Capacitor (C902, C903) (Y1 or Y2 type) (optional)	Haohua	CT 7	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Dongguan South Hongming	F	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	JYA-NAY	JN, JY	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Murata	KX, KH	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Samwha	SD	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Success	SE	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	TDK-EPC	CD, CS	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Walsin	AH, AC	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	KUNSHAN WANSHENG ELECTRONICS CO LTD	CT7	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 1000pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Y- Capacitor (C900) (Y1 type) (optional)	Haohua	CT 7	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Dongguan South Hongming	F	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	JYA-NAY	JN, JY	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Murata	KX, KH	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Samwha	SD	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Success	SE	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	TDK-EPC	CD, CS	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Walsin	AH, AC	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	KUNSHAN WANSHENG ELECTRONICS CO LTD	CT7	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 3300pF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
X-Capacitor (C908) (X1 or X2 type) (optional)	Epcos Electronic Components SA	B3292#	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Europtronic	MKX, MPX2	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Hua Jung	MKP	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC (Semko), UL
Alt.	Liow Gu Electronics Industry Co., Ltd.	GS-L	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL

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Alt.	Ultra Tech Xiphi Enterprise Co., Ltd.	HQX	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	Xiamen Faratronic Co., Ltd.	MKP62	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Alt.	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.33 F, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Optocoupler (U902)	Everlight	EL 817 V (V=VDE option)	Dti = 0.4mm, min. Clearance/creepage between input and output = 7.06mm, 100°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	Lite-on	LTV-817	Dti = 0.4mm, min. Clearance/creepage between input and output = 7.0mm, 110°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1	Dti = 0.4mm, min. Clearance/creepage between input and output = 7.0mm, 110°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	Sharp	PC123	Dti = 0.4mm min. Clearance/creepage between input and output = 8.0mm, 110°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	TOSHIBA	TLP421F	Dti = 0.4mm min. Clearance/creepage between input and output = 6.5mm, 115°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	TOSHIBA	TLP781F TLP781	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Alt.	Vishay Semiconductor	TCET1103	Dti = 0.4mm min. Clearance/creepage between input and output = 7.0mm, 100°C	DIN EN 60747-5-2:2003, IEC 60950-1, UL 1577	VDE, UL
Speaker (optional)	Interchangeable	Interchangeable	4Ω, 2.5W	--	--
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 3Ω, Min. 2A, 25°C	--	--
Bleeder Resistor (R900, R901, R902)	Interchangeable	Interchangeable	Max. 1M , min. 1/4 W (three in series, located after fuse)	--	--
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2A, Min 600V.	--	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150µF, Max. 450 V, 105°C	--	--
Current sense resistor (R924)	Interchangeable	Interchangeable	0.47 , 2W	--	--
Line Choke (L901) (optional)	Yaxingdianzi	73G174-65-X	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	Dadon	73G174-65-H	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt.	Chang Chun Plastics Co., Ltd.	T375J	V-0, Phenolic, 150°C	UL 94	UL
Alt. Line Choke (L901) (optional)	TPV	73G174-65-V	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	TDK	73G174-65-T	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115, 4130	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	LI SHIN	73G174-65-L	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	YUVA	73G 174-65-N	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	TAI CHANG	73G 174-65-S	120°C	--	--

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- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt. Line Choke (L901) (optional)	LI SHIN	73G174- 65-LS	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Alt.	Chang Chun Plastics Co., Ltd.	T355J	V-0, Phenolic, 150°C	UL 94	UL
Alt. Line Choke (L901) (optional)	Tonation	73G174- 65-YS	120°C	--	--
- Bobbin	Chang chun plastic	PBT-4115	V-0, 120°C	UL 94	UL
Transformer (T901)	Jiangsu Channelon Electronic Group Co., LTD	80GL22T-3-H	130°C	--	--
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Margin Tape	Symbio	35661$	130°C	UL 510	UL
- Insulation Tape	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	CT	130°C	UL 510	UL
Alt.	Symbio	35660Y*(%)	130°C	UL 510	UL
Alt. Transformer (T901)	YUVA	80GL22T-3-N	130°C	--	--
- Bobbin	Chang Chun Plastics Co., Ltd.	T375J	V-0, Phenolic, 150°C	UL 94	UL
- Margin Tape	Symbio	35661$	130°C	UL 510	UL
Alt.	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	44(a)	130°C	UL 510	UL
- Insulation Tape	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	CT	130°C	UL 510	UL
Alt.	Symbio	35660Y*(%)	130°C	UL 510	UL
Alt. Transformer (T901)	TPV	S80GL22T-3-V	130°C	--	--
- Bobbin	Sumitomo	PM-8375	V-0, Phenolic, 150°C	UL 94	UL
- Margin Tape	Symbio	35661$	130°C	UL 510	UL
Alt.	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	WF	130°C	UL 510	UL
- Insulation Tape	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	CT-280	130°C	UL 510	UL
Alt.	Symbio	35660Y*(%)	130°C	UL 510	UL
Switching Power Supply with LED driver board, type No. 715G6503 by TPV					
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C, thickness: 1.50mm	UL 94, UL 796	UL
Appliance Inlet (CN901)	Inalways Corporation Co., Ltd.	0707-1, 0711-2, 0714	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S SA-4S-1	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	DELIKANG	CDJ-3, CDJ-3-1	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Douling	CDJ-3, CDJ-3-1	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Solteam Electronics Co., Ltd.	ST-01	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	TECX	TU-301, TU-301-A TU-301-AP, TU-301-S TU-301-SP, TU-301-AL TU-301-AP-A	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
	Yueqing Hongchang	DB-14	10A, 250 V, 70°C	IEC/EN/UL 60320-1	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
	Littelfuse	392, 382-series	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL

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	Wickmann	392, 382-series	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
	Cooper Bussmann	SR-5 series, SS-5 series	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000 series, 2010 series	T2.5AL, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3 UL 248-1, UL 248-14	VDE, UL
Y- Capacitor (C902,C903) (Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Yinan Don	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	TDK	CS, CD	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Murata	KH, KX	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Success	SE, SB	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
Y- Capacitor (C913) (Y1 type) (optional)	Walsin	AH	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Yinan Don	CT81	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Haohua	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	TDK	CD	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Wansheng	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Murata	KX	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	JYA-NAY	JN	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Success	SE, SB	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Hongming	F	Max. 2200pF, 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
X-Capacitor (C901) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC (Semko), UL
	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Europtronic	MPX, MPX2	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	EPCOS	B3292#	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	VDE, UL
	Arcotronics	R.46	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN/UL 60384-14	ENEC(IMQ), UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 3Ω, Min. 2A, 25°C	IEC 60950-1	
Bleeder Resistor (R907, R908, R909)	Interchangeable	SMD type	Max. 1M ohm, min. 1/4 W (three in series, located after fuse)	IEC 60950-1	--
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2A, Min 500V.	IEC 60950-1	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	10-150 µF, Max. 450 V, 105 °C	IEC 60950-1	--
Line Choke (L901) (optional)	Dadon	73G174-192-H	105°C	IEC 60950-1	--
	TPV	73G174-192-V	105°C	IEC 60950-1	--
	ASET	73G174-192-X	105°C	IEC 60950-1	--

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	TaiCheng	73G174-192-S	105°C	IEC 60950-1	--
	Litai	73G174-192-L	105°C	IEC 60950-1	--
	Darfon	73G174-192-DN	105°C	IEC 60950-1	--
	YUVA	73G174-192-N	105°C	IEC 60950-1	--
Transformer (T901) (Alt.)	Li Tai	380GL19P533L	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	Symbio 3M	35661$ 44(a)	130°C	UL 510	UL
Insulation Tape	Jingjiang Symbio	CT(c) 35660Y*(%)	130°C	UL 510	UL
Transformer (T901) (Used when T902 was not connected) (Alt.)	YUVA	380GL19P533N	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	Symbio 3M	35661$ 44(a)	130°C	UL 510	UL
Insulation Tape	Jingjiang Symbio	CT(c) 35660Y*(%)	130°C	UL 510	UL
Transformer (T901) (Used when T902 was not connected) (Alt.)	TPV	S80GL19P533V	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	Symbio SYMBIO	35661$ WF	130°C	UL 510	UL
Insulation Tape	Jingjiang Symbio	CT(c) 35660Y*(%)	130°C	UL 510	UL
Transformer (T902) (Used when T901 was not connected) (Alt.)	Channelon	380GL19P535H	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Transformer (T902) (Used when T901 was not connected) (Alt.)	YUVA	380GL19P535N	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Transformer (T902) (Used when T901 was not connected) (Alt.)	TPV	S80GL19P535V	Class 105 material (A)	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix B **(Modelo/Model: G2460PF, 240LM00010, G2460VQ6, 240LM00016)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60 Hz, 1.5 A; Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013; CISPR 22: 2008, CISPR 32: 2012 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3 : 2006+A1:2007+A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS */ LIST OF CRITICAL COMPONENTS:*

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel for constructions I, II, III, IV and VI	AUO	M240HW** (*can be 0~9, A~Z, blank for marking purpose)	24" TFT with LED backlight; Declared power consumption: 20.2W	--	Tested in equipment
	CHI MEI	M236H*-*** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 19.8W	--	Tested in equipment
	IVO	M236MWF* (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 17.7W	--	Tested in equipment
	BOE	HM236W**-*** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 18.6W	--	Tested in equipment
	TPV	TPM236** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 19.4W	--	Tested in equipment
	CHI MEI	M236H**-*** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight; Declared power consumption: 18.9W	--	Tested in equipment
	AUO	M240HTN** (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 17.55W; Declared backlight voltage: max. 32.4Vdc	--	Tested in equipment
	AUO	M240HVN** (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 20.62W; Declared backlight voltage: max. 46.2Vdc	--	Tested in equipment
	TPV	TPM240*** (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 16.65W; Declared backlight voltage: max. 49Vdc	--	Tested in equipment
	SAMSUNG	LTM240CL** (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, power consumption: 19.48W; Declared backlight voltage: max. 43.7Vdc	--	Tested in equipment
	LG Display	LM240WU* (*can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 16.06W; Declared backlight voltage: max. 42.9Vdc	--	Tested in equipment
	INNOLUX	M236H** (*can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight, declared power consumption: 18.012W; Declared backlight voltage: max. 46.2Vdc	--	Tested in equipment
	SAMSUNG	LTM240CT** (* can be 0~9, A~Z, blank for marking purpose)	24.0" TFT with LED backlight, declared power consumption: 19.48W; Declared backlight voltage: max. 43.7Vdc	--	Tested in equipment
	BOE	HR236WU* (* can be 0~9, A~Z, blank for marking purpose)	23.6" TFT with LED backlight, declared power consumption: 20.2W; Declared backlight voltage: 57.6Vdc	--	Tested in equipment
Plastic Enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+), GC-0700(+), GC-1017(+), VE-1890(+), TP-1100(+), BF-0675(+), BF-0670F, NH-1017T, NH-1017(+), BF-0677(+), HS-7000RA	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E115797)
	Grand	D-150, D-1000	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E88637)
	Chi Mei	PA-757(+), PH-88	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E196075)
	BASF	GP-35, GP-22, 495F	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E41871)
	Bayer	FR2000, FR3005	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E41613)
	LG	HF-350, HF-380, AF-312T1, AF-342T1, GN-5001TF(#), GN-5001RFD, GN-5008A-F, SE750(#), XG-568, XG-569C, GP-1000L, SE-750, GN-5001RF, GN-5001RFT, GN-5008HF	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E67171)

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	Teijin	TN-7500, TN-7500F(#), MN-3600H, MN-3600HA	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E98529, E244324)
	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E345434)
	STYRON	STYRON A-TECH 1400	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E73656)
	KingFa	5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011(L65), GAR-011(HG6), CK-100, RD-900	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E171666)
	Haier	HRABS-RS, HRABS-HG, CR-3002	HB or better, 60°C, thickness 2.0mm min.	UL 94	UL (E230779)
Metal Enclosure	--	--	Metallic, thickness 0.61 mm min.	--	--
Metal Enclosure under supply board at horizontal position	---	--	Metal, thickness 0.81 mm min.	--	--
Metal Enclosure under supply board at vertical position	---	--	Metal, thickness 0.81mm min.	--	--
PCB	--	--	V-1 or better Min. 105°C	UL 94, UL 796	UL
Stand base	--	--	HB or better, total weight: 2.27 kg	UL 94	UL
Speaker (2 sets)(optional)	--	--	Max. 8Ω, max. 4.5W	--	--
Negative ion generator (optional)	Dong Guan Fu Fong	FIO-DC5V	I/P : 5.0 Vdc, 0.3W, 40mA O/P: -4±0.5 kVdc (at 5 Vdc)	--	--
-Transformer (T1)	Dong Guan Fu Fong	OSC-1712	105°C	--	--
- Enclosure	CHI MEI CORPORATI ON	PA-765A(+)	V-1 min, thickness 1.5 mm min.	UL 94	UL (E56070)
Negative ion generator (optional)	SHENZHEN SUNYOU	F5BS-GJ1	I/P : 4.0-6.0 Vdc O/P: -4±0.5 kVdc (at 5 Vdc)	--	--
-Transformer (T1)	SHENZHEN SUNYOU	EE16	105°C	--	--
- Enclosure	NAN YA PLASTICS CORP PLASTICS 4TH DIV	1403G6	V-0 min, thickness 0.75 mm min.	UL 94	UL (E130155)
Switching Power Supply Board 715G5361 type A:					
Appliance Inlet (CN901)	Solteam	ST-01	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40015691 UL E200241
	Zhang Jia Gang-Hua Jie	SA-4S, SB-4S-1	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40003610 UL E154342
	Rong Feng	SS-120, SS-7B	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40028101, UL E102641
	Delikang	CDJ-3	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40010513 UL E217394
	Delikang	CDJ-3-1	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40015913 UL E217394
	Inalways	0707-1	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	SGS (ENEC): ENEC 2010083 A1, UL E94191
	Inalways	0711-2	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	SGS (ENEC): ENEC 2010084 A1, UL E94191
	Inalways	0714	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	SGS (ENEC): ENEC 2010085 A1 UL E94191
	TECX	TU-301 series	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40025582 UL E220004
	Yueqing Hongchang	DB-14	10A/250Vac	IEC/EN 60320-1, UL 498, UL60320-1	VDE 40028645 UL E327347
Fuse (F901 in primary)	Conquer	MET	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017157, UL E82636
	Conquer	MST	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017118, UL E82636
	Conquer	PTU	T4A, 250 Vac	IEC/EN 60127-1,	VDE 40001462,

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				IEC/EN 60127-3, UL 248-1, UL 248-14	UL E82636
	Littelfuse	382	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 400018249 UL E67006
	Littelfuse	392	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 126983 UL E67006
	Cooper Bussmann	SR-5 Series	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE122052 UL E19180
	Cooper Bussmann	SS-5 Series	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40015513 UL E19180
	Ever Island Electric Co., Ltd. and Walter Electric	2000 Series	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018790 UL E220181
	Ever Island Electric Co., Ltd. and Walter Electric	2010 Series	T4A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018781 UL E220181
Fuse (F902, F904) (secondary for LPS) (F904 is optional)	Conquer	MET	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017155 UL E82636
	Conquer	MST	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40017118 UL E82636
	Conquer	PTU	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40001462 UL E82636
	Littelfuse	382	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018250 UL E67006
	Littelfuse	392	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 126983 UL E67006
	Cooper Bussmann	SR-5 Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40020046, UL E19180
	Cooper Bussmann	SS-5 Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40015513 UL E19180
	Ever Island Electric Co., Ltd. and Walter Electric	2000 Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018790 UL E220181
	Ever Island Electric Co., Ltd. and Walter Electric	2010 Series	T5A, 250 Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248-1, UL 248-14	VDE 40018781 UL E220181
Y- Capacitor (C902, C903, C941) (optional) (Y1 or Y2 type)	Walsin	AH	Max. 4700pF, min. 250Vac, min. 85 °C., Y1	IEC 60384-14, UL 60384-14	VDE 40001804 UL E146544
	Walsin	AC	Max. 4700pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE 40001829 UL E146544
	Samwha Capacitor Co.,Ltd.	SD	Max. 4700pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE 40015804 UL E97754
	Haohua	CT7	Max. 4700pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE, 40013601 UL E233106
	TDK-EPC	CD	Max. 4700pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE 40029780 UL E37861
	TDK-EPC	CS	Max. 4700pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE 40029781 UL E37861
	Murata	KX	Max. 4700pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE, 40002831, UL E37921
	Murata	KH	Max. 4700pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE, 40002796 UL E37921
	Guangdong South Hongming Electronic	F	Max. 4700pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE 40036246, UL E154899
	SUCCESS	SE	Max. 4700pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE 40008996 UL E114280
	KUNSHAN WANSHENG ELECTRONI CS CO LTD	CT7	Max. 4700pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE 40012143 UL E249006
	YINAN DON'S ELECTRONIC COMPONEN T CO.,LTD	CT81	Max. 4700pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE 135256 UL E145038
	Rong Feng	RF-1003	10A, 250Vac	IEC/EN 61058-1,	VDE 40030309,

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Power switch (optional)				UL 61058-1	UL (E94138)
	Solteam Electronics Co Ltd	Series MR-21	6A, 250Vac	IEC/EN 61058-1, UL 61058-1	SGS (ENEC 2009053), UL (E148157)
	Solteam Electronics Co Ltd	OR-L series	6A, 250Vac	IEC/EN 61058-1, UL 61058-1	SGS (ENEC 2014027), UL (E148157)
	Zhangjiagang Huajie Electronic Co., Ltd.	PS8	10A, 125V AC 6(4)A 250V AC	IEC/EN 61058-1, UL 61058-1	VDE 40027662, UL (E151790)
	Chily	3024	16A, 250Vac	IEC/EN 61058-1, UL61058-1	SGS (ENEC 2010034 A1), UL (E68037)
X- Capacitor (C908) (X1 or X2 type) (optional)	Ultra Tech Xiphi Enterprise Co., Ltd.	HQX	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40024534) UL (E183780)
	Xiamen Faratronic Co., Ltd.	MKP62	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40000358) UL (E186600)
	Hua Jung Components Co., Ltd.	MKP	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	Intertek (ENEC): 0252-5B UL (E149075)
	Europtronic	MPX	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40018238) UL (E211347)
	Europtronic	MPX2	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40025981) UL (E211347)
	Liow Gu Electronics Industry Co., Ltd.	GS-L	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40023391) UL E186321
	ARCOTRONI CS	R.46	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	IMQ (ENEC): DAT97000141 UL (E97797)
	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40026078) UL (E327138)
	Epcos Electronic Components S A	B3292#	Max. 0.47 µF, Min. 250 Vac, min. 85 °C, X2	IEC 60384-14, UL 60384-14	VDE (40005524) UL (E97863)
Thermistor (NR901)	--	--	Min. 3Ω, Min. 2A, 25°C	--	--
Bleeder Resistor (R900, R901, R902)	--	SMD type	Three in series after fuse, each rated max. 680K ohm, min. 1/4W	--	--
Bridging Diode (BD901)	--	--	Min. 600 V, min. 2A	--	--
Ripple Capacitor (C907)	--	--	100 μ F-150 μ F, min. 450V, 105°C	--	--
Transistor (Q901)	--	--	Min. 600 V, min. 3.8A	--	--
Line Choke (L901) (optional)	Dadon	73L174-26-H	105°C	--	--
	TDK	73L174-26-T	105°C	--	--
	LI SHIN	73L174-26-LS	105°C	--	--
	TPV	73L174-26-V	105°C	--	--
Bobbin of line choke	Chang Chun	T375J, T-357	Phenolic, V-0, 150°C	UL94	UL
	Sumitomo	PM-9820, PM-8375	Phenolic, V-0, 150°C	UL94	UL
	E I DUPONT DE NEMOURS & CO INC	FR-530L	130°C	UL94	UL
Y- Capacitor (C937, C938) (optional) (Y1 or Y2 type)	Walsin	AH	Max. 1000pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE (40001804) UL (E146544)
	Walsin	AC	Max. 1000pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE (40001829) UL (E146544)
	Samwha Capacitor Co.,Ltd.	SD	Max. 1000pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE (40015804) UL (E97754)
	Haohua	CT7	Max. 1000pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE (40013601) UL (E233106)
	TDK-EPC	CD	Max. 1000pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE (40029780) UL (E37861)
	TDK-EPC	CS	Max. 1000pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE (40029781) UL (E37861)
	Murata	KX	Max. 1000pF, min. 250Vac, min. 85 °C, Y1	IEC 60384-14, UL 60384-14	VDE, 40002831, UL E37921
	Murata	KH	Max. 1000pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE, 40002796 UL E37921
	Guangdong South Hongming Electronic	F	Max. 1000pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE 40036246, UL E154899
	SUCCESS	SE	Max. 1000pF, min. 250Vac, min. 85 °C, Y2	IEC 60384-14, UL 60384-14	VDE, 40008996 UL E114280
	KUNSHAN WANSHENG	CT7	Max. 1000pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE, 40012143 UL E249006

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	ELECTRONI CS CO LTD				
	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 1000pF, min. 250Vac, min. 85 °C, Y1 or Y2	IEC 60384-14, UL 60384-14	VDE, 135256 UL E145038
Current sense Resistor (R924)	--	--	Min. 0.3 ohm, 2W	--	--
Photo Coupler (IC902)	Sharp	PC123	Dti = 0.7 mm, Int. cr = 5.0 mm, Ext. cr = 8.0 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2, UL1577	VDE 40008087, UL E64380
	Vishay Semiconductor	TCET1103	Dti = 0.6 mm, Int. cr = 4.7 mm, Ext. cr = 8.4 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2, UL1577	VDE 40028080 UL E76222
	Everlight Electronics Co., Ltd.	EL8X7 (X=1 or 2)	Dti = 0.5 mm, Int. cr = 6.0 mm, Ext. cr = 7.7 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2, UL1577	SGS (FI 27474 A1), UL E214129
	Lite-On	LTV-817	Dti = 0.4 mm, Int. cr = 4.0 mm, Ext. cr = 8.0 mm, 3000 Vac, 100 °C	DIN EN 60747-5-2, UL1577	VDE 40015248 UL E113898
	TOSHIBA	TLP421F	Dti = 0.4 mm, Int. cr = thermal cycling test, Ext. cr = 8.0 mm, 3000 Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE 40010944 UL E67349
	Toshiba	TLP781, TLP781F	Dti = 0.4 mm, Int. cr = thermal cycling test, Ext. cr = 8.0 mm, 3000 Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE 40021173 UL E67349
	RENESAS	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di = 0.4mm, int. cr = thermal cycling 3. ext. cr = 8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE 40008862 UL E72422
Transformer (T901)	TPV	80GL22T-3-V 80TL22T-3-V	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-8375	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	JINGJIANG YAHUA	No.WF(c)	130°C	UL510	UL
-Insulation tape	JINGJIANG YAHUA	NO.CT(c)	130°C	UL510	UL
Transformer (T901)	YUVA	80GL22T-3-N 80TL22T-3-N	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Chang Chun	T375J	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	SYMBIO INC	NO.35661$	130°C	UL510	UL
	3M	NO.44(a)	130°C	UL510	UL
-Insulation tape	JINGJIANG YAHUA	NO.CT(c)	130°C	UL510	UL
	SYMBIO INC	NO.35660Y*%	130°C	UL510	UL
Transformer (T901)	Li Tai	80GL22T-3-L 80TL22T-3-L	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Chang Chun	T375J	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	SYMBIO INC	NO.35661$	130°C	UL510	UL
-Insulation tape	SYMBIO INC	NO.35660Y* d	130°C	UL510	UL
	SYMBIO INC	NO.35661$	130°C	UL510	UL
Transformer (T901)	Dadon / Jiangsu Channelon	80GL22T-3-H 80TL22T-3-H	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	SYMBIO INC	NO.35661$	130°C	UL510	UL
-Insulation tape	SYMBIO INC	No.35660Y* (%)	130°C	UL510	UL
	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T901)	TaiChang	80GL22T-3-S 80TL22T-3-S	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
-Margin tape	JINGJIANG YAHUA	WF	130°C	UL510	UL
	JINGJIANG YAHUA	WF310	130°C	UL510	UL
-Insulation tape	JINGJIANG YAHUA	1350F-1	130°C	UL510	UL
	JINGJIANG YAHUA	JY25-A	130°C	UL510	UL
Power Supply with LED driver board, type No. 715G4497 by TPV					
AC-Inlet (CN901)	Inalways Corporation Co., Ltd.	0707-1, 0711-2, 0714	10A, 250 V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S SA-4S-1	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	DELIKANG/ Douling	CDJ-3, CDJ-3-1	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	Solteam Electronics Co., Ltd.	ST-01	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL

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	TECX	TU-301-AP, TU-301-S, TU-301-SP, TU-301-A	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	Yueqing Hongchang	DB-14	10A, 250V, 70°C	IEC/ EN 60320-1, UL498	VDE, UL
	TECX	TU-301 series	10A, 250V, 70°C	IEC/ EN 60320-1	VDE
Fuse (F901)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc. Wickmann	392, 382-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C900, C902, C903) (Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Yinan Don	CT81	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Haohua	CT7	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Wansheng	CT7	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	TDK	CS, CD	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Samwha	SD	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Murata	KH, KX	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	JYA-NAY	JY, JN	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Success	SE, SB	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Hongming	F	Max. 4700pF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
X-Capacitor (C908) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Hua Jung	MKP	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	ENEC (Semko), UL
	Faratronic	MKP62	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Europtronic	MPX	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Europtronic	MPX2	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Liow Gu	GS-L	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	EPCOS	B3292#	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Arcotronics	R.46	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	ENEC(IMQ), UL
	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.33µF, min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, int.cr= thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko, Nemko
	Vishay Semiconductor	TCET1103	Di=0.6mm, int.cr=4.7mm, ext.cr=8.4mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko
	Everlight Electronics Co., Ltd.	EL817	Di=0.5mm, int.cr=6.0mm, ext.cr=7.7mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko, Nemko
	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko
	Lite-on	LTV-817	Di=0.4mm, int.cr=4.0mm, ext.cr=8.0m, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL
	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Fimko, Nemko
	TOSHIBA	TLP421F	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko

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	TOSHIBA	TLP781F, TLP781	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, min. 3000Vac, 100°C	DIN/EN 60747-5-2, IEC/EN 60950-1, UL 1577	VDE, UL, Semko, Fimko
Bridging Diode (BD901)	interchangeable	interchangeable	Min. 2.0A, min. 600Vac	--	--
Ripple Capacitor (C907)	interchangeable	interchangeable	20-180µF, min. 450 V, min. 105 °C	--	--
Transistor (Q901)	interchangeable	interchangeable	Min. 600V, min. 2.0A	--	--
Thermistors (NR901) (Optional)	interchangeable	interchangeable	Min. 3Ω, Max. 5 A at 25 °C	--	--
Current sensor resistor (R924)	interchangeable	DIP type	0.47Ω, 2 W	--	--
Bleeding resistors (R900, R901, R902)	interchangeable	interchangeable	0.91MΩ, Min.1/8W	--	--
Line Choke (L901) (optional)	Dadon	73G174-65-H	105°C	--	Tested in equipment
	ASET	73G174-65-X	105°C	--	Tested in equipment
	Litai	73G174-65-L	105°C	--	Tested in equipment
	TPV	73G174-65-V	105°C	--	Tested in equipment
	Taichang	73G174-65-S	105°C	--	Tested in equipment
	YUVA	73G174-65-N	105°C	--	Tested in equipment
	DARFON	73G174-65- DN	105°C	--	Tested in equipment
	TDK	73G174-65-T	105°C	--	Tested in equipment
Transformer (T901) (Alt.)	TPV	80GL22T-3-V	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-8375	Phenolic, V-0, 150°C	UL94	UL
Margin tape	SYMBIO INC	35661$	130°C	UL510	UL
	JINGJIANG YAHUA	WF(c)	130°C	UL510	UL
Insulation tape	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
	SYMBIO INC	35660Y*(%)	130°C	UL510	UL
Transformer (T901) (Alt.)	YUVA	80GL22T-3-N	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Chang Chun	T375J	Phenolic, V-0, 150°C	UL94	UL
Margin tape	SYMBIO INC	35661$	130°C	UL510	UL
	3M	44(a)	130°C	UL510	UL
Insulation tape	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
	SYMBIO INC	35660Y*(%)	130°C	UL510	UL
Transformer (T901) (Alt.)	DADON	80GL22T-3-H	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
Margin tape	SYMBIO INC	35661$	130°C	UL510	UL
Insulation tape	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
	SYMBIO INC	35660Y*(%)	130°C	UL510	UL
Transformer (T901) (Alt.)	TAICHANG	80GL22T-3-S	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
Margin tape	JINGJIANG JINGYI	WF310	130°C	UL510	UL
	JINGJIANG YAHUA	WF(c)	130°C	UL510	UL
Insulation tape	JIANGJING JINGYI	25-A	130°C	UL510	UL
	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
Transformer (T901) (Alt.)	CHENPING	80GL22T-3-CP	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820, PM-9630	Phenolic, V-0, 150°C	UL94	UL
Margin tape	SYMBIO INC	35661$	130°C	UL510	UL
	JINGJIANG YAHUA	WF(c)	130°C	UL510	UL
Insulation tape	JINGJIANG YAHUA	CT(c)	130°C	UL510	UL
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix C **(Modelo/Model: 215LM00041, *2270******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: AC 100-240V, 50/60Hz; 1.5A, Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013, CISPR 22:2008 (modified) Class B, CISPR 24: 2010, IEC 61000-3-2: 2014, IEC 61000-3-3 : 2013, IEC 61000-4-2: 2008, IEC 61000-4-3: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2005, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel for 21.5'' model	TPV	TPM215HW**-****** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 19.35W and backlight input voltage is 41.6V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	AUO	M215HTN** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 15.54W and backlight input voltage is 38.4V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M215H**-*** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 16.97W and backlight input voltage is 34.65V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215WF*-**** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 16.3W and backlight input voltage is 51.2V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215WF*-**** (*can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption is 14.35W and backlight input voltage is 45.0V in specification.	IEC 60950-1	Tested in equipment
(Alternative)	BOE	HR215WU*-*** (* can be 0-9, A-Z, a-z for marketing purpose)	21.5 inch TFT type, with LED back light, power consumption: 24.87W; LED Array Voltage: 41.6V.	IEC 60950-1	Tested in equipment
(Alternative)	BOE	HM215WU*-*** (* can be 0-9, A-Z, a-z for marketing purpose)	21.5 inch TFT type, with LED back light, power consumption: 17.19W; LED Array Voltage: 51.2V.	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215HT** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 15.82W; LED Array Voltage: 52.8V	IEC 60950-1	Tested in equipment
(Alternative)	AUO	M215HW** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 17W; LED Array Voltage: 52.8V.	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI	M215H*-L** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 12.55W; LED Array Voltage: 41.V.	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215WF* (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 16.0W; LED Array Voltage: 57.6V.	IEC 60950-1	Tested in equipment
(Alternative)	CPT	CLAA215FA** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 14.6W; LED Array Voltage: 41.6V.	IEC 60950-1	Tested in equipment
(Alternative)	BOE	HT215F**-*** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 16.56W; LED Array Voltage: 54.4V.	IEC 60950-1	Tested in equipment
(Alternative)	AUO	T215HVN**** (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 16.55W; LED Array Voltage: 54.4V.	IEC 60950-1	Tested in equipment

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(Alternative)	TPV	TPM215WF* (* can be 0-9, A-Z and blank, for marketing purpose only)	21.5 inch TFT type, with LED back light, power consumption: 14.9W; LED Array Voltage: 31.5V.	IEC 60950-1	Tested in equipment
Plastic enclosure	SAMSUNG SDI CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+), GC-0700(+), GC-1017(+), GC-0750(+), VE-1890(+), TP-1100(+), BF-0675(+), BF-0670(+), NH-1017(p), BF-0677(+), HS-7000(+), HG-0760(+), HR-1360(+)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Grand	D-150, D-1000	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	LG	HF-350, HF-380, AF312T1, AF342T, GN-5001TF(#), GN-5001RFD, GP-5008A-F, SE750(#), XG-568, XG-569C, GP-1000L, SE-750, GN-5001RF(T)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Chi Mei	PA-757(+), PH-88	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	King Fa	5197, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011(L65), GAR-011(HG6), CK-100	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Bayer	FR3005	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Teijin	TN-7500(v), TN-7500F(#), MN-3600H(#)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	STYRON	STYRON A-TECH 1400	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	Haier	HRABS-RS, HRABS-HG, CR-3002	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	HIPS-2000	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
Metal enclosure for all types	Interchangeable	Interchangeable	Metal thickness: min. 0.5mm	--	Tested in equipment
Base stand	Interchangeable	Interchangeable	HB or better	UL 94	UL
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Power supply board: 715G6503 type A					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL

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(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Wickmann	392, 382-series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Cooper Bussmann	SR-5 series, SS-5 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
Y- Capacitor (C902 and C903, Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	TDK	CS, CD	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Murata	KH, KX	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL

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(Alternative)	Hongming	F	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Wansheng	CT7	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Haohua	CT7	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Samwha	SD	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Success	SB, SE	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
Y- Capacitor (C913) (Y1 type) (optional)	Walsin	AH	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Haohua	CT7	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	TDK	CD	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Murata	KX	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Success	SE, SB	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Hongming	F	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL

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X-Capacitor (C901) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Rong guang da	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Arcotronics	R.46	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	EPCOS	B3292#	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 0.2Ω at 25°C, min. 2A	IEC 60950-1	Tested in equipment
Bleeder Resistor (R907, R908, R909)	Interchangeable	Interchangeable	Max. 1MΩ, min. 1/4W	IEC 60950-1	Tested in equipment
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.600V, min.2A	IEC 60950-1	Tested in equipment
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150µF, max. 400V, 105°C	IEC 60950-1	Tested in equipment
Line Choke (L901) (Optional)	Dadon	73G174-192-H	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Prosperity Dielectrics	73G174-192-F	105°C	IEC 60950-1	Tested in equipment
(Alternative)	ASET	73G174-192-X	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Taichang	73G174-192-S	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Litai	73G174-192-L	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Darfon	73G174-192-DN	105°C	IEC 60950-1	Tested in equipment

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(Alternative)	YUVA	73G174-192-N	105°C	IEC 60950-1	Tested in equipment
Transformer (T902) (Alt.)	Channelon	380GL19P535H00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
Transformer (T902) (Alt.)	YUVA	380GL19P535N00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
Transformer (T902) (Alt.)	TPV	S80GL19P535V00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Furukawa	TEX-E	Max.130°C	IEC/EN 60950-1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
Power supply board: 715G6503 type B					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac, 70°C, C14 type	IEC/ EN 60320-1, ANSI/UL 498, CAN/CSA-C22.2 No. 60320-1 (2011)	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL

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(Alternative)	Wickmann	392, 382-series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Cooper Bussmann	SR-5 series, SS-5 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
(Alternative)	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14, CSA-C22.2 No. 248-1-00, CSA-C22.2 No. 248-14-00	VDE, UL
Y- Capacitor (C902 and C903, Y1 or Y2 type) (optional)	Walsin	AC, AH	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	TDK	CS, CD	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Murata	KH, KX	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Hongming	F	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Wansheng	CT7	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Haohua	CT7	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Samwha	SD	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL

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(Alternative)	Success	SB, SE	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
Y- Capacitor (C913) (Y1 type) (optional)	Walsin	AH	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Haohua	CT7	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	TDK	CD	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Murata	KX	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Success	SE, SB	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Hongming	F	Max. 0.47µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
X-Capacitor (C901) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL

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(Alternative)	Hua Jung	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Rong guang da	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	Arcotronics	R.46	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	EPCOS	B3292#	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, 250Vac, 85°C	IEC/ EN 60384-14, ANSI/UL 60384-14, CAN/CSA-E60384-14 (2009)	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 0.2Ω at 25°C, min. 2A	IEC 60950-1	Tested in equipment
Bleeder Resistor (R907, R908, R909)	Interchangeable	SMD type	Max. 1MΩ, min. 1/4W	IEC 60950-1	Tested in equipment
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.600V, min.2A	IEC 60950-1	Tested in equipment
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150µF, max. 400V, 105°C	IEC 60950-1	Tested in equipment
Line Choke (L901) (Optional)	Dadon	73G174-192-H	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Prosperity Dielectrics	73G174-192-F	105°C	IEC 60950-1	Tested in equipment
(Alternative)	ASET	73G174-192-X	105°C	IEC 60950-1	Tested in equipment
(Alternative)	TaiCheng	73G174-192-S	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Litai	73G174-192-L	105°C	IEC 60950-1	Tested in equipment
(Alternative)	Darfon	73G174-192-DN	105°C	IEC 60950-1	Tested in equipment
(Alternative)	YUVA	73G174-192-N	105°C	IEC 60950-1	Tested in equipment
Transformer (T901) (Alt.)	LFDJ	380GL19P533J00	Class B	IEC 60950-1	Tested in equipment

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
(Alternative)	Chang Chun Plastics Co., Ltd.	T357HF	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	JINGJIANG YAHUA	No.WF	130°C	UL 510	UL
(Alternative)	3M COMPANY	44(a)	130°C	UL 510	UL
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL 510	UL
Transformer (T901) (Alt.)	YUVA	380GL19P533N00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	SYMBIO INC	No.35661$	130°C	UL510	UL
(Alternative)	3M COMPANY	44(a)	130°C	UL510	UL
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL 510	UL
Transformer (T901) (Alt.)	TPV	S80GL19P533V00	Class B	IEC 60950-1	Tested in equipment
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Margin tape	SYMBIO INC	No.35661$	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.WF	130°C	UL510	UL
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	SYMBIO INC	35660Y(e)	130°C	UL 510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL 510	UL
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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June 5, 2027

Appendix D **(Modelo/Model: 185LM000**)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: 100-240Vac, 50/60 Hz, 1.5 A; Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32 : 2012, CISPR 24: 2010, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel for 18.5 inch model	TPV	TPM185B*-****** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 11.4W and backlight input voltage is 35.2V in specification.	IEC 60950-1	Tested in equipment
	AUO	M185XW** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 10.2W and backlight input voltage is 36V in specification.	IEC 60950-1	Tested in equipment
	AUO	M185XTN** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 7.8W and backlight input voltage is 25.2V in specification.	IEC 60950-1	Tested in equipment
	BOE	HM185WX*-*** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 10.68W and backlight input voltage is 32V in specification.	IEC 60950-1	Tested in equipment
	CHIMEI INNOLUX	M185B**-*** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 11.11W and backlight input voltage is 27.2V in specification.	IEC 60950-1	Tested in equipment
	L&T	LM185WH*-**** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 12.8W and backlight input voltage is 51.2V in specification.	IEC 60950-1	Tested in equipment
	SAMSUNG	LTM185AT** (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 11.9W and backlight input voltage is 35.2V in specification.	IEC 60950-1	Tested in equipment
	TPV	TPM185WH* (*can be 0-9, A-Z or blank)	18.5 inch panel with LED backlight The declared power consumption is 11.8W and backlight input voltage is 38.5V in specification.	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 2.0mm thickness min. 60°C	UL 94	UL

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	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	HUIZHOU WOTE	2100	HB or better, 2.0mm thickness min. 60°C	UL 94	UL

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	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	STYRON	STYRON A-TECH 1200	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
	CHI LIN TECHNOLOGY CO LTD	GA-1(aaa), GA-1535	HB or better, 2.0mm thickness min. 60°C	UL 94	UL
Metal enclosure (except part under power board)	Interchangeable	Interchangeable	Metallic, thickness 0.6 mm min.	--	--
Metal enclosure (under power board)	Interchangeable	Interchangeable	Metallic, thickness 0.6 mm min.	--	--
Base stand (optional)	Interchangeable	Interchangeable	HB or better	UL 94	UL
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Power supply board: 715G5527					
AC-Inlet (CN901)	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S, SA-4S-1	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Shenzhen Delikang Electronics Technology Co. Ltd.	CDJ-3, CDJ-3-1	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co. Ltd.	ST-01	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co. Ltd.	VDE: SC04 UL: SC04-1BWW, SC04-2BTT	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Yueqing Hongchang Radio Co., Ltd	DB-14	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
Fuse (F901)	Conquer Electronics Co., Ltd.	MET series, MST, PTU	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc.	677 series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc./ LITTELFUSE WICKMANN WERKE	392, 382-series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann LLC	SR-5, SS-5 series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Fuse (F902) (optional)	Conquer Electronics Co., Ltd.	MET series, MST, PTU	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL

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	Littelfuse, Inc.	677 series	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc./ LITTELFUSE WICKMANN WERKE	392, 382-series	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann LLC	SR-5, SS-5 series	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc. Wickmann	392, 382-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin Technology Corp.	AC, AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	TDK Corporation	CS, CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Murata Mfg. Co., Ltd.	KH, KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Haohua Electronic Co	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Samwha Capacitor Co., Ltd.	SD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Success Electronics Co., Ltd.	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
X-Capacitor (X1 or X2 type) (C904) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Europtronic	MPX, MPX2	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Liow Gu	GS-L	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Arcotronics	R.46	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	ENEC(IMQ), UL
	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	EPCOS	B3292#	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Nanjing Tengen Rongguangda Electronics (Group) Co., Ltd.	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, int.cr= thermal cycling , ext. cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL

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	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, int.cr=6.0mm, ext.cr=7.7mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, int. cr= thermal cycling, ext. cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	Lite-on	LTV-817	Di=0.4mm, int.cr=4.0mm, ext.cr=8.0m, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	TOSHIBA	TLP781F TLP781	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	TOSHIBA	TLP421F	Di=0.4mm, int.cr=thermal cycling, ext.cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
	VISHAY Semiconductor GmbH	TCET1103-3034	Di=Min. 0.4mm, int. cr=thermal cycling , ext. cr=8.0mm, 3000Vac, 100°C	DIN EN 60747-5-2, UL1577	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 3Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R900, R901, R902)	Interchangeable	SMD type	Max. 1MΩ, min. 1/4W	--	--
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.600V, min.2A	--	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150 µF, min. 450V, 105°C	--	--
Line Choke (L901) (optional)	Dadon	73G174- 65-H	105°C	--	--
	TPV	73G174- 65-V	105°C	--	--
	DARFON	73G174- 65-DN	105°C	--	--
	TaiChang	73G174- 65-S	105°C	--	--
	TDK	73G174- 65-T	105°C	--	--
	Litai	73G174- 65-L	105°C	--	--
	YUVA	73G174- 65-N	105°C	--	--
	ASET	73G174- 65-X	105°C	--	--
Transformer (T901) (Alt.)	YUVA	80GL19P-39-N	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL 94	UL
Margin Tape	SYMBIO INC	35661 (c), 35660 (a), 35660Y (e)	130°C	UL 510	UL
	3M	44 (a)	130°C	UL 510	UL
Insulation Tape	SYMBIO INC	35660Y (e)	130°C	UL 510	UL
	JINGJIANG YAHUA	CT	130°C	UL 510	UL
Transformer (T901) (Alt.)	TPV	80GL19P-39-V	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL 94	UL
Margin Tape	SYMBIO INC	35661 (c), 35660 (a), 35660Y (e)	130°C	UL 510	UL
Insulation tape	JINGJIANG YAHUA	35660Y (e)	130°C	UL 510	UL
Transformer (T901) (Alt.)	TAICHANG	80GL19P-39-S	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL 94	UL
Margin tape	JINGJIANG YAHUA	WF* (c)(h)	130°C	UL 510	UL
Insulation Tape	JINGJIANG YAHUA	CT	130°C	UL 510	UL
Power supply board: 715G6503					
AC-Inlet (CN901)	Zhang Jia Gang Hua Jie Electronics Co., Ltd.	SA-4S, SA-4S-1	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL

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	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Shenzhen Delikang Electronics Technology Co. Ltd.	CDJ-3, CDJ-3-1	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co. Ltd.	ST-01	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co. Ltd.	VDE: SC04 UL: SC04-1BWW, SC04-2BTT	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
	Yueqing Hongchang Radio Co., Ltd	DB-14	10A, 250 V	IEC/ EN 60320-1, UL 498	VDE, UL
Fuse (F901 in primary)	Conquer Electronics Co., Ltd.	MET series, MST, PTU	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc.	677 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc./ LITTELFUSE WICKMANN WERKE	392, 382-series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann LLC	SR-5, SS-5 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 series	T2.5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C903) (Y1 or Y2 type) (optional)	Walsin Technology Corp.	AC, AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	TDK Corporation	CS, CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Murata Mfg. Co., Ltd.	KH, KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Haohua Electronic Co	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Samwha Capacitor Co., Ltd.	SD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Success Electronics Co., Ltd.	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
Y- Capacitor (C902, C913) (Y1 type) (optional)	Walsin Technology Corp.	AH	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	TDK Corporation	CD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Murata Mfg. Co., Ltd.	KX	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Haohua Electronic Co	CT7	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL

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	Samwha Capacitor Co., Ltd.	SD	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Success Electronics Co., Ltd.	SE, SB	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 4700pF, Min. 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
X-Capacitor (C901) (X1 or X2 type) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Europtronic	MPX, MPX2	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Liow Gu	GS-L	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Arcotronics	R.46	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	ENEC(IMQ), UL
	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	EPCOS	B3292#	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
	Nanjing Tengen Rongguangda Electronics (Group) Co., Ltd.	MKP	Max. 0.22µF, 250Vac, 85°C	IEC/EN 60384-14, UL 1414	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 0.2Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R907, R908, R909)	Interchangeable	SMD type	Max. 1MΩ, min. 1/4W	--	--
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.600V, min.2A	--	--
Ripple Capacitor (C907)	Interchangeable	Interchangeable	45-150 µF, min. 400V, 105°C	--	--
Line Choke (L901) (optional)	Dadon	73G174-192-H	105°C	--	--
	Prosperity Dielectrics	73G174-192-F	105°C	--	--
	ASET	73G174-192-X	105°C	--	--
	TaiChang	73G174-192-S	105°C	--	--
	Litai	73G174-192-L	105°C	--	--
	Darfon	73G174-192-DN	105°C	--	--
	YUVA	73G174-192-N	105°C	--	--
Transformer (T902) (Alt.)	Channelon	380GL19P535H00	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	Jingjiang	CT	130°C	UL 510	UL
	Symbio	35660Y (e)			
Transformer (T902) (Alt.)	YUVA	380GL19P535N00	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	Jingjiang	CT	130°C	UL 510	UL
	Symbio	35660Y (e)			

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Transformer (T902) (Alt.)	TPV	S80GL19P535V00	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Furukawa	TEX-E	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL
Insulation Tape	Jingjiang	CT	130°C	UL 510	UL
	Symbio	35660Y (e)			
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Appendix E **(Modelo/Model: 22B1, 22B1H, 22********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:* I/P: 19VDC, 1.31A Class Ⅲ; IP20

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32 : 2015, CISPR 24:2010/A1:2015, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006+A1: 2007+A2: 2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPM215*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 9.3W; LED array voltage: 31V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	H*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 19.4W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	M*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 10.9W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.3W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 14.25W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 18.3W; LED array voltage: 34.1V)	IEC 60950-1	Tested in equipment
(Alternative)	INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.53W; LED array voltage: 36.66V)	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.21W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 13.62W; LED array voltage: 48.2V)	IEC 60950-1	Tested in equipment
(Alternative)	AUO	*215H****.* (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.55W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
Plastic enclosure	SAMSUNG SDI CO LTD (Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++), GC-1017(+), GC-0750(+), VE-1890(+), TN-1100(+), BF-0675(+), BF-0670(+), NH-1017SG(+), NH-1017(p), BF-0677(+), HS-7000(+), HG-0760(+), HR-1360(+)	HB or better, min. 1.6mm thickness	UL 94	UL E115797
(Alternative)	Grand	D-150, D-1000, D-1000A	HB or better, min. 1.6mm thickness	UL 94	UL E88637
(Alternative)	LG	HF350(#), HF-380(#), AF312T1, AF342T1, AF342(#), LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), SE750(#), XG568(#), XG569(#), GP-1000F(#), LUPOY GN-5001RF(T)	HB or better, min. 1.6mm thickness	UL 94	UL E67171
(Alternative)	Chi Mei	PA-757(+), PA-756S, PH-88, PC-110	HB or better, min. 1.6mm thickness	UL 94	UL E56070

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(Alternative)	King Fa	5197, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, HIPS-510 (o), CK-55111	HB or better, min. 1.6mm thickness	UL 94	UL E171666
(Alternative)	ALBIS	GP-35, GP-22, 495F	HB or better, min. 1.6mm thickness	UL 94	UL E80168
(Alternative)	Bayer	FR3000 series, FR3005 series	HB or better, min. 1.6mm thickness	UL 94	UL E41613
(Alternative)	Teijin	TN-7500(c), TN-7500F(#), MN-3600H(#), MN-3600V(#)	HB or better, min. 1.6mm thickness	UL 94	UL E98529
(Alternative)	STYRON	STYRON A-TECH 1400	HB or better, min. 1.6mm thickness	UL 94	UL E162447
(Alternative)	Haier	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 1.6mm thickness	UL 94	UL E230779
(Alternative)	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 1.6mm thickness	UL 94	UL E345434
(Alternative)	ORINKO	ABS-3070H	HB or better, min. 1.6mm thickness	UL 94	UL E328304
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y), YOUHO-1303B	HB or better, min. 1.6mm thickness	UL 94	UL E471190
(Alternative)	UNIC	UR-3006+	HB or better, min. 1.6mm thickness	UL 94	UL E471190
(Alternative)	SABIC	C6600	HB or better, min. 1.6mm thickness	UL 94	UL E207780
(Alternative)	WISTRON	GA35	HB or better, min. 1.6mm thickness	UL 94	UL E359575
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 1.6mm thickness	UL 94	UL E310240
(Alternative)	FORMOSA IDEMITSU PETROCHEMICAL CORP	#1900+(f2)	HB or better, min. 1.6mm thickness	UL 94	UL E238753
(Alternative)	Interchangeable	Interchangeable	HB or better, min. 1.6mm thickness	UL 94	UL
PCB	CHANG CHUN PLASTICS CO LTD	CCP-508	V-1 or better, min. 105°C	UL 94	UL E108591
(Alternative)	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
AC/DC Adapter	TPV Electronics (Fujian) Co., Ltd.	ADPC1925EX	I/P: 100-240Vac, max. 1.3A, 50-60Hz; O/P: DC 19V, 1.31A, 40 °C, 5000m Comply with LPS	IEC 60950-1:2005+A1+A2; EN 60950-1:2006+A11+A1+A12+A2	NEMKO CB (Certif. No. NO83042)
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

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Appendix F (Modelo/Model: 24B1, 24B1H, 24B1XHM, 24********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:*
I/P: 19VDC, 1.31 A; Class Ⅲ; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; **CISPR 32:2015+AMD1:2019, CISPR 35:2016, EN IEC 61000-3-2:2019+A1:2021, IEC 61000-3-3:2013+AMD1:2017,** IEC 61000-4-2: 2008, **IEC 61000-4-3:2020**, IEC 61000-4-4: 2012, **IEC 61000-4-5:2014+AMD1:2017**, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, **IEC 61000-4-11:2020**

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	**TPM236**********(* can be A to Z, a to z, 0 to 9, '-', '.', ',' sign absence or blank)**	23.6 inch TFT LCD (power consumption: 15.9 W; LED array voltage: 57.8V)	**IEC/EN 60950-1**	Tested in equipment
	L&T	**LM238**********(* can be A to Z, a to z, 0 to 9, '-', '.', ',' sign absence or blank)**	23.8 inch TFT type, with LED back light, power consumption: 12.1W; LED Array Voltage: 38.8V	**IEC/EN 60950-1**	Tested in equipment
	BOE	**MV238**********(* can be A to Z, a to z, 0 to 9, '-', '.', ',' sign absence or blank)**	23.8 inch TFT type, with LED back light, power consumption: 16.9W; LED Array Voltage: 51.5V	**IEC/EN 60950-1**	Tested in equipment
	LG Display	**LM238**********(* can be A to Z, a to z, 0 to 9, '-', '.', ',' sign absence or blank)**	23.8 inch TFT type, with LED back light, power consumption: 17.76W; LED Array Voltage: 58.9V	**IEC/EN 60950-1**	Tested in equipment
	TPV	**TPM238**********(* can be A to Z, a to z, 0 to 9, '-', '.', ',' sign absence or blank)**	23.8 inch TFT type, with LED back light, power consumption: 15.11W; LED Array Voltage: 52.7V	**IEC/EN 60950-1**	Tested in equipment
Base stand (optional)	**Interchangeable**	**Interchangeable**	**Metal or HB better**	**UL 94:1996+ Rev. 2010 IEC 60695-11-10:2013(2nd Edition)**	**UL or other EU certification**
Internal metal enclosure	**Interchangeable**	**Interchangeable**	**Metal, thickness 0.50mm**	**IEC/EN 60950-1**	**None**

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Plastic enclosure	**LOTTE CHEMICAL CORPORATION**	**VH-0810(+), VE-1890(+), EN-1052(+), VH-0815(+), VH-0819(+), HM-1100(+), VE-0819F, NH-1017T, NH-1017SG(+), VE-0812(+), NH-1000T(+)(&), NE-1030(+), LS-1159(r), LS-1159SF, LS-1159F, NH-1036, GC-1017(RR30), SD-0150(+), BF-0677(+), BF-0675(+), BF-0670F, GC-0700(+++)(RR28), LX-0951(+), LX-0957(+), HG-0760(+), NH-1027HF, NH-1027(+), SD-0150T, GC-1036(RR35), SC-1220R, ABF-0200E, ABF-1030NH**	HB or better, **1.6**mm thickness min.	UL 94 **IEC/EN 60950-1**	UL (E115797) **and test with appliance**
	GRAND	D-1000A, D-150	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E88637) and test with appliance**
	CHI MEI CORPORATION	**PC-540A, PA-765A,** PA-756S PA-757(+), **PC-110(+)**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E56070) and test with appliance**
	COVESTRO DEUTSCHLAND AG [PC RESINS]	**FR3005, GF9011 MF +(z), FR3050 +**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E41613) and test with appliance**
	LG CHEM LTD	**LUPOY GN-5001TF(#), LUPOY GN-5001RF(T), LUPOY GN-5008HF(#), LUPOY GN-2101F(m)(f1), XG568(#), XG569(#), GP-1000(m)(#), SE885(#), AF365(&), AF368(#), AF358**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E67171) and test with appliance**

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	KINGFA	**HF-606,** **HF-626,** **FRABS-518,** **JH960 6(M) (ccc) (##),** **FRHIPS-960,** **CK-572(M1) (##),** **FRABS-518C,** **5197,** **RS-(hh)0,** **GAR-011C,** **GAR-011(L65),** **GAR-011(L85),** **GAR-011(HG6),** **CK-100,** **CK-55(M) (##),** **HP-126,** **CK-61(M) (##),** **HIPS-510 (o),** **HIPS-550**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E171666) and test with appliance**
	HAIER	HRABS-RS, HRABS-HG	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E230779) and test with appliance**
	HINGLONG	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E345434) and test with appliance**
	ORINKO	**HIPS-2230(N),** ABS-3070H, HIPS-2000, **ABS-340(X),** **ABS900F23**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E328304) and test with appliance**
	WISTRON	GA(M)(b)(c), **NC(N)(a),** **GA85**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E359575) and test with appliance**
	UNIC	UR-3006+(RXX), UR-200+, **UR-7085+(R90),** **UP-700+**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	UL (E135175) **and test with appliance**
	GUO HENG	YOUHO(####) (Y), **YOUHO13(##)(YY),** **YOUHE26(##)**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	UL (E471190) **and test with appliance**
	WOTE	2100	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	**UL (E310240) and test with appliance**
	TEIJIN	TN-7500(c)	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	UL (E98529) **and test with appliance**
	TEIJIN	**MN-3600H(#)**	**HB or better, min. 1.6mm thickness.**	**UL 94** **IEC/EN 60950-1**	**UL (E244324) and test with appliance**
	SAMYANG	**TRILOY:210NHF(@),** **210NHF**	**HB or better, min. 1.6mm thickness.**	**UL 94** **IEC/EN 60950-1**	**UL (E121254) and test with appliance**
	INEOS STYROLUTION POLYMERS (FOSHAN) COMPANY LIMITED	3441; 260-XX	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	UL (E314268) **and test with appliance**
	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	UL (E103670) **and test with appliance**
	SABIC	**C6600**	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	UL (E207780) **and test with appliance**
	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, **1.6**mm thickness.	UL 94 **IEC/EN 60950-1**	UL (E205938) **and test with appliance**

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	CHI LIN	**GA-1(aaa)**	**HB or better, 1.6mm thickness.**	**UL 94 IEC/EN 60950-1**	**UL (E177071) and test with appliance**
	FUHENG	**HIPS-568, FH-101, FH-102**	**HB or better, 1.6mm thickness.**	**UL 94 IEC/EN 60950-1**	**UL (E234833) and test with appliance**
	QING DAO GON TECHNOLOGY CO.,LTD.	**ABS21(xx)G-A, ABS2030A, ABS20(xx)B**	**HB or better, 1.6mm thickness.**	**UL 94 IEC/EN 60950-1**	**UL (E330547) and test with appliance**
	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	**AC2820-A**	**HB or better, 1.6mm thickness.**	**UL 94 IEC/EN 60950-1**	**UL (E162823) and test with appliance**
	Chongqing Gengye New Materials Technology Co Ltd	**Ecorex® RN - +(R #)**	**HB or better, 1.5mm thickness.**	**UL 94 IEC/EN 60950-1**	**UL (E514505) and test with appliance**
	FORMOSA IDEMITSU PETROCHEMICAL CORP	**#1900+(f2)**	**0.36 to 1.8mm V-2; 1.9 to 6.0 mm HB**	**UL 94 IEC/EN 60950-1**	**UL E217670 and test with appliance**
Power Adapter (for models 24********)	TPV	ADPC1925EX	IP: 100-240 Vac, 50-60 Hz, 1.3A. OP: 19Vdc, 1.31A, LPS, 40˚C, Class I, altitude operating: 5000 m	IEC 60950-1: 2005+A1	CB by Nemko (certificate no. NO83042)
Alt.	L&T	STK025-19131T	IP: 100-240 Vac, 50-60 Hz, 1.3A. OP: 19Vdc, 1.31A, 40˚C, Class I, 5000m Comply with SELV and L.P.S.	**IEC 60950-1:2005+A1+A2**	CB by TUV SUD (Certificate No. SG PSB-**OF-03174**)
PCB	**Three Sun**	**SMS-1**	**V-0, 105℃ min.**	**UL 796 IEC/EN 60950-1**	**UL E217670 and test with appliance**
Alt.	**Interchangeable**	**Interchangeable**	**V-1 or better Min. 105℃**	**UL 796:2016 IEC 60695-11-10:2013(2nd Edition)**	**UL or other EU certification**
Power Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***	**Revisão/**Review: **04**	**Validade /** ***Expiration***
6 de junho de 2024		**5 de junho de 2027**
June 6, 2024		*June 5, 2027*

Appendix G **(Modelo/Model: G2260VWQ6, 215LM00033)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A; Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013; CISPR 32: 2015, CISPR 24:2010, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3 : 2006+A1:2007+A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel for 21.5'' model	L&T	BM215WF*-**** (* can be 0-9, A-Z or blank, the suffix cannot be T2BB)	21.5'' panel with LED backlight The declared power consumption in specification is 17.3W.	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215WF*-T2BB (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 16.3W.	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215WF****** (* can be 0-9, A-Z, "-" or blank, no technical difference)	21.5'' panel with LED backlight The declared power consumption in specification is 14.95W.	IEC 60950-1	Tested in equipment
(Alternative)	AUO	M215HW0* (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 15.1W.	IEC 60950-1	Tested in equipment
(Alternative)	CHI MEI	M215H*-*** (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 15.28W.	IEC 60950-1	Tested in equipment
(Alternative)	TPV	TPM215HW0* (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 15.5W.	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215WF* (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 16.2W.	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215HT** (* can be 0-9, A-Z or blank)	21.5'' panel with LED backlight The declared power consumption in specification is 22.26W	IEC 60950-1	Tested in equipment
Plastic enclosure	Cheil	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+), GC-0700(+), GC-1017(+), VE-1890(+), TP-1100(+), BF-0675(+), BF-0670(+), HS-7000(+)	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Grand	D-150, D-1000	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	LG	HF-350, HF-380, AF-312T1, AF-342T1, GN-5001TF(#), GN-5001RFD, GP-5008A-F, SE750(#), XG-568, XG-569C, GP-1000L, SE-750	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Chi Mei	PA-757(+), PH-88	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	King Fa	5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, CK-100	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Basf	GP-35, GP-22, 495F	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Bayer	FR2000, FR3005	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Teijin	TN-7500(v), TN-7500F(#)	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	STYRON	STYRON A-TECH 1400	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
(Alternative)	Haier	HRABS-RS, HRABS-HG	HB or better, 2.2mm thickness min. 80°C	UL 94	UL
Base stand	Interchangeable	Interchangeable	HB or better	UL 94	UL
PCB	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Speaker (2 sets) (optional) (for 21.5 inch models only)	Interchangeable	Interchangeable	Max. 8Ω, max. 4.5 W	--	Tested in equipment
For Switching Power Supply with DC/DC converter board type: 715G4497					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1	VDE, UL

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(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1	VDE, UL
Fuse F901	Littelfuse	382, 392	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	Conquer	MET MST-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	SAVE FUSETECH INC	SR-5 series, SS-5 series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	Walter	2000 series, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
Fuse F902 (sec. for LPS)	Littelfuse	382, 392	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	Conquer	MET MST-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	SAVE FUSETECH INC	SR-5 series, SS-5 series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
(Alternative)	Walter	2000 series, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3	VDE, UL
Y- Capacitor (C900, C902, C903) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A, NS-B	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Yinan	CT81	Max. 4700pF, 250Vac, 85°C	IEC 60384-14	VDE, UL
X-Capacitor (C908) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	ENEC(Semko), UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
(Alternative)	Arcotronics	R.46	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.47µF, 250Vac, 85°C	IEC 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, int.=4.0mm, ext.=8.0mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, int.=4.7mm, ext.=8.4mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	Everlight Electronics Co., Ltd.	EL817 EL1013	Di>0.4mm, int.>4.0mm, ext.>7.0mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	Lite-on	LTV-817	Di=0.7mm, int.=4.7mm, ext.=8.4mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1	Di>0.4mm, int.>4.0mm, ext.>7.0mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
(Alternative)	TOSHIBA	TLP421F, TLP781F, TLP781	Di>0.4mm, int.>4.0mm, ext.>7.0mm, 3000Vac, 100°C	IEC 60747-5-2	VDE, UL
Thermistor (NR901)	Interchangeable	Interchangeable	Max. 5A, min. 3Ω, 25°C	--	Tested in equipment
Bleeder Resistor (R900, R901, R902)	Interchangeable	Interchangeable	Max. 680KΩ, min. 1/8W	--	Tested in equipment
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min. 2.0A, 600Vac min.	--	Tested in equipment
Ripple Capacitor (C907)	Interchangeable	Interchangeable	100-180µF, min. 450V, 105°C	--	Tested in equipment
Transistor (Q901)	Interchangeable	Interchangeable	Min. 600V, min. 2.0A	--	Tested in equipment
Line Choke (L901) (optional)	Dadon	73G174-65-H	105°C	--	Tested in equipment
(Alternative)	TPV	73G174-65-V	105°C	--	Tested in equipment
(Alternative)	Taichang	73G174-65-S	105°C	--	--
(Alternative)	YUVA	73G174-65-N	105°C	--	--
(Alternative)	Yaxing	73G174-65-X			

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(Alternative)	Darfon	73G174-65-DN			
Transformer (T901)	Dadon	80GL22T-3-H	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
(Alternative)	YUVA	80GL22T-3-N	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
(Alternative)	TPV	80GL22T-3-V	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
(Alternative)	CHENPING	80GL22T-3-CP	Class B	Applicable parts of IEC 60950-1 and according IEC 60085	Accepted by TÜV Rheinland
Cord Set	Various	Various	----	NBR 14136, NBR NM 60884-1	INMETRO

Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix H **(Modelo/Model: 315LM00019, AG322FCX)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:* I/P: 20V d.c., 2.25 A; Class Ⅲ; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2012 Class B, CISPR 24:2010, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPT320B*-****.* (* can be 0-9, A-Z, a-z, "-" or blank)	32 inch panel with LED backlight The declared power consumption is 47.35W and backlight input voltage is 50.4V in specification.	--	Tested in equipment
Alt.	TPV	TPT315B*-****.* (* can be 0-9, A-Z, a-z, "-" or blank for marketing purpose only)	31.5 inch panel with LED backlight The declared power consumption is 35.14W and backlight input voltage is 47.6V in specification.	--	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E115797)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E88637)
Alt.	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL(E56070)
Alt.	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E80168)
Alt.	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E41613)
Alt.	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529, E244324)
Alt.	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E345434)

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Alt.	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E73656)
Alt.	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E230779)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E328304)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
Alt.	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E310240)
Alt.	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
Alt.	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
Alt.	HUIZHOU WOTE	2100	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529)

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Alt.	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E108538)
Alt.	STYRON	STYRON A-TECH 1200	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E162447)
Alt.	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E314268)
Alt.	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E103670)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E207780)
Alt.	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E205938)
Alt.	CHI LIN	GA-1(aaa), GA-1535	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E177071)
AC/DC Adapter	TPV Electronics (Fujian) Co., Ltd.	ADPC2045	I/P: 100-240Vac, 1.5A, 50-60Hz; O/P: DC 20V, 2.25A; 40 °C, 5000m Comply with LPS	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013	TUV CB (Certif. No. JPTUV-064333)
Fuse F7001, F7002 (on main board 715G8722 for LPS)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Littelfuse Phils. Inc.	TE5 400 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Conquer	MET series, MST series, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Power Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Appendix I **(Modelo/Model: 22P1, **22P1********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A; Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2015 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPM215*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 12.42W; LED array voltage: 47.6V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	H*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 19.4W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	M*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 10.9W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.3W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 14.25W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 18.3W; LED array voltage: 34.1V)	IEC 60950-1	Tested in equipment
(Alternative)	INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.53W; LED array voltage: 36.66V)	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.21W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 13.62W; LED array voltage: 48.2V)	IEC 60950-1	Tested in equipment
(Alternative)	AUO	*215H****.* (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.55W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
Heat shrinkable tube used on metal pillar near C907	DONGGUAN SALIPT CO LTD	SALIPT S-901-600, SALIPT S-HPT-600	125°C, 600V, min. 0.4mm thickness	--	UL
Switching mode power supply board: 715G7300 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Fuse (F901)	Littelfuse, Inc. Wickmann	382-series, 392	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL

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(Alternative)	Littelfuse, Inc.	TE5 400	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
(Alternative)	Conquer	MET, MST, PTU	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A, NS-B	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	Europtronic	MPX, MPX2	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22μF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F, TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Thermistor (NR901)	JIANGSU XINGSHUN ELECTRONICS CO.,LTD	8D2-14	Min. 5Ω at 25°C, min. 2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 5Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R907, R908, R909)	FENGHUA	RVS-06	Max. 1MΩ, min. 1/4W	--	--
(Alternative)	Interchangeable	Interchangeable	Max. 1MΩ, min. 1/4W	--	--
Current sensor resistor (R931)	CAIZHI	MOF2WS	Min. 0.825Ω, 2W	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 0.825Ω, 2W	--	--
Bridging Diode(BD901)	LITEON	KBP208G-C	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor(C907)	KINGNICHI	PW2W470MLT1236DLRV	50-150μF, max. 450V, 105°C	--	--
(Alternative)	Interchangeable	Interchangeable	50-150μF, max. 450V, 105°C	--	--
Transistor (Q901)	AUK	SMK0465F	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Line Choke (L901) (Optional)	ASET	73G-174-192-X	105°C	--	--
(Alternative)	DADON	73G-174-192-H	105°C	--	--
(Alternative)	TAICHANG	73G-174-192-S	105°C	--	--
(Alternative)	FRONTIER	73G-174-192-F	105°C	--	--
(Alternative)	LI TAI	73G-174-192-L	105°C	--	--
(Alternative)	YUVA	73G-174-192-N	105°C	--	--
(Alternative)	DARFON	73G-174-192-DN	105°C	--	--

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Transformer (T902) (Alt.)	Channelon	380GL19P535H	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	YUVA	380GL19P535N	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	TPV	S80GL19P535V	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Furukawa	TEX-E	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	LFDJ	380GL19P535J	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	PHOENIX	380GL19P535P	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B+@	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT*(c)(g)	130°C	UL510	UL
Power Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Appendix J **(Modelo/Model: 24P1, **24P1********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A; Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2015 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	AUO	M240UAN**** (*can be 0-9, A-Z, "." or blank for marketing purpose).	24 inch TFT LCD (power consumption: 15.3W; LED array voltage: 43.5V)	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM240*** (*can be 0-9, a-z, A-Z or blank for marketing purpose).	24 inch TFT LCD (power consumption: 16.9W; LED array voltage: 40.3V)	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM240**** (*can be 0-9, a-z, A-Z or blank for marketing purpose).	24 inch TFT LCD (power consumption: 15.9W; LED array voltage: 41.6V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	MV240*** (*can be 0-9, a-z, A-Z or blank for marketing purpose).	24 inch TFT LCD (power consumption: 15.6W; LED array voltage: 40.3V)	IEC 60950-1	Tested in equipment
(Alternative)	TPV	TPM240***-***** (*can be 0-9, a-z, A-Z or blank for marketing purpose).	24 inch TFT LCD (power consumption: 16.65W; LED array voltage: 44.8V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM238***-**** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT LCD (power consumption: 12.1W; LED Array Voltage: 38.8V)	--	Tested in equipment
(Alternative)	BOE	MV238***-*** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT LCD (power consumption: 16.9W; LED Array Voltage: 51.5V)	--	Tested in equipment
(Alternative)	LG Display	LM238WF*-**** (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT LCD (power consumption: 17.76W; LED Array Voltage: 58.9V)	--	Tested in equipment
(Alternative)	TPV	TPM238WF* (* can be 0-9, A-Z or blank for marketing purpose only)	23.8 inch TFT LCD (power consumption: 15.11W; LED Array Voltage: 52.7V)	--	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI)(Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance

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(Alternative)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL E88637 and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL E56070 and tested with appliance
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL E80168 and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS] (Bayer)	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL E41613 and tested with appliance
(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL E67171 and tested with appliance
(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL E171666 and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL E230779 and tested with appliance
(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL E345434 and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL E328304 and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL E359575 and tested with appliance

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(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL E135175 and tested with appliance
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(#####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL E471190 and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL E310240 and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL E98529 and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, min. 2.0mm thickness	UL 94	UL E108538 and tested with appliance
(Alternative)	TRINSEO EUROPE GMBH (STYRON)	STYRON A-TECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL E162447 and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL E314268 and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL E103670 and tested with appliance
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL E207780 and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL E205938 and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL E177071 and tested with appliance
PCB	CHANG CHUN PLASTICS CO LTD	CCP-508	V-1 or better, min. 105°C	UL 94	UL
(Alternative)	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Switching mode power supply board: 715G7610 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Primary Switch (SW901) (Optional)	Rong Feng Industrial Co., Ltd.	RF-1003	VDE: 10(4)A, 250Vac UL: 10A, 250Vac	IEC/EN 61058-1, UL 1054	VDE, UL
(Alternative)	Solteam Electronics Co Ltd	MR-21 series	ENEC: 6A, 250Vac UL:10A, 125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	MR-21S	ENEC: 6A, 250Vac UL:10A, 125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	OR-L series, OR-P series	ENEC: 6A, 250Vac UL: 10A/125Vac, 6A/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	MR-22 series	ENEC: 12(4)A, 250Vac UL: 12A,125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Chily	3024 series	VDE:16(4)A, 250Vac UL: 15A,125/250Vac	IEC/EN 61058-1, UL 1054	VDE, UL
(Alternative)	Ningbo Yinzhou Lihe Switch Factory	RL3-4	VDE: 10(4), 250Vac UL: 16A, 125Vac	IEC/EN 61058-1, UL 1054	VDE, UL

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Fuse (F9901 in primary)	Littelfuse, Inc. Wickmann	382-series, 392	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
(Alternative)	Conquer	MET, MST, PTU	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Fuse (F901 in secondary)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
(Alternative)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C9903, C9904) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A, NS-B	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C9902) Y1 type (optional)	Walsin	AH	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	Samwha	SD	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 2200pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C9901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Thermistor (NR9901)	JIANGSU XINGSHUN ELECTRONICS CO.,LTD	8D2-14	Min. 5Ω at 25°C, min. 2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 5Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R9901, R9902, R9903)	FENGHUA	RVS-06	Max. 1MΩ, min. 1/4W	--	--
(Alternative)	Interchangeable	Interchangeable	Max. 1MΩ, min. 1/4W	--	--
Current sensor resistor (R916)	Tzaiyuan	MOF2WS0R43JT52	Min. 0.39Ω, 2W	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 0.39Ω, 2W	--	--
Bridging Diode (BD9901)	LITEON	KBP208G-C	Min.500V, min.2A	--	--

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(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C901, C902)	RUBYCON	470PKZ002S	47-150µF, max. 450V, 105°C	--	--
(Alternative)	Interchangeable	Interchangeable	47-150µF, max. 450V, 105°C	--	--
Transistor (Q901)	AUK	SMK0465F	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Line Choke (L9902) (Optional)	JIANGSU CHANNELON	373G0174563H	105°C	--	--
(Alternative)	LIANFENG DONGJJIN	373G0174563J	105°C	--	--
(Alternative)	ASET	373G0174563X	105°C	--	--
(Alternative)	LIANZHEN ELECTRONICS	373G0174563Z	105°C	--	--
Transformer (T901)	PHOENIX	380GL32P547P	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	SUMITOMO BAKELITE CO.,LTD	PM-9820	Phenolic, V-0, 150 °C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B	130°C, Class B	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T901) (Alt.)	LIANFENG DONGJIN	380GL32P547J	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	SUMITOMO BAKELITE CO.,LTD	PM-9820	Phenolic, V-0, 150 °C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B	130°C, Class B	IEC 60950-1 UL 60950-1	VDE, UL
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Power Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Appendix K **(Modelo/Model: 9P1, **9P1*******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:* I/P: 100-240V~, 50/60Hz, 1.5A; Class I ; IP20

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2015 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel (for 18.5 inch models)	CHIMEI INNOLUX	M185***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 9.85W; LED array voltage: 25.6V)	IEC 60950-1	Tested in equipment
(Alternative)	AUO	M185XTN**** (*can be 0-9, A-Z, "." or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 7.85W; LED array voltage: 21.7V)	IEC 60950-1	Tested in equipment
(Alternative)	TPV	TPM185***-**** (*can be 0-9, A-Z, "." or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 6.55W; LED array voltage: 17.4V)	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI)(Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance
(Alternative)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL E88637 and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL E56070 and tested with appliance
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL E80168 and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS] (Bayer)	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL E41613 and tested with appliance

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(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL E67171 and tested with appliance
(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL E171666 and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL E230779 and tested with appliance
(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL E345434 and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL E328304 and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL E359575 and tested with appliance
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL E135175 and tested with appliance
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL E471190 and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL E310240 and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL E98529 and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, min. 2.0mm thickness	UL 94	UL E108538 and tested with appliance

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(Alternative)	TRINSEO EUROPE GMBH (STYRON)	STYRON A-TECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL E162447 and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL E314268 and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL E103670 and tested with appliance
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL E207780 and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL E205938 and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL E177071 and tested with appliance
PCB	CHANG CHUN PLASTICS CO LTD	CCP-508	V-1 or better, min. 105°C	UL 94	UL
(Alternative)	Interchangeable	Interchangeable	V-1 or better, min. 105°C	UL 94	UL
Heat shrinkable tube (used on metal pillar near C907 on metal enclosure type A)	DONGGUAN SALIPT CO LTD	SALIPT S-901-600, SALIPT S-HPT-600	125°C, 600V, min. 0.4mm thickness	--	UL
Switching mode power supply board: 715G7300 type A by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Fuse (F901)	Littelfuse, Inc. Wickmann	382-series, 392	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
(Alternative)	Conquer	MET, MST, PTU	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional) (on 715G7300 type A)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A, NS-B	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional) (on 715G7300 type A)	Walsin	AH	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko

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(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1 PS2561L1-1, PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Thermistor (NR901)	JIANGSU XINGSHUN ELECTRONICS CO.,LTD	8D2-14	Min. 5Ω at 25°C, min. 2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 5Ω at 25°C, min. 2A	--	--
Bleeder Resistor (R907, R908, R909)	FENGHUA	RVS-06	Max. 1MΩ, min. 1/4W	--	--
(Alternative)	Interchangeable	Interchangeable	Max. 1MΩ, min. 1/4W	--	--
Current sensor resistor (R931)	CAIZHI	MOF2WS	Min. 0.825Ω, 2W	--	--
(Alternative)	Interchangeable	Interchangeable	Min. 0.825Ω, 2W	--	--
Bridging Diode (BD901)	LITEON	KBP208G-C	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C907 on 715G7300 type A)	KINGNICHI	PW2W470MLT1236DLR V	47-150µF, max. 450V, 105°C	--	--
(Alternative)	Interchangeable	Interchangeable	50-150µF, max. 450V, 105°C	--	--
Transistor (Q901)	AUK	SMK0465F	Min.500V, min.2A	--	--
(Alternative)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Line Choke (L901) (on 715G7300 type A) (Optional)	ASET	73G-174-192-X	105°C	--	--
(Alternative)	DADON	73G-174-192-H	105°C	--	--
(Alternative)	TAICHANG	73G-174-192-S	105°C	--	--
(Alternative)	FRONTIER	73G-174-192-F	105°C	--	--
(Alternative)	LI TAI	73G-174-192-L	105°C	--	--
(Alternative)	YUVA	73G-174-192-N	105°C	--	--
(Alternative)	DARFON	73G-174-192-DN	105°C	--	--
Transformer (T902) (Alt.)	Channelon	380GL19P535H	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Transformer (T902) (Alt.)	YUVA	380GL19P535N	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	TPV	S80GL19P535V	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Furukawa	TEX-E	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	LFDJ	380GL19P535J	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	PHOENIX	380GL19P535P	Class 105 material (A)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B+@	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT*(c)(g)	130°C	UL510	UL
Power Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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Revisão/Review: **04**

Validade / ***Expiration***
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June 5, 2027

Appendix L **(Modelo/Model: AG251********, 250LM000**)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 4.5A or 3.25A, 20 Vdc, Class Ш; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2015/COR1:2016 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2004, IEC 61000-4-5: 2005, IEC 61000-4-6: 2008, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
AC/DC adapter	TPV Electronics (Fujiang) Co., Ltd	ADPC2090	Input : 100-240 V~, 50-60 Hz, 1.3 A Output: 20 Vdc, 4.5 A, SELV	IEC60950-1:2005+A1:2009 + A2:2013 EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013	CB by TUV RH (17038425 001 and 17038425 002)
Plastic Enclosure	LOTTE	VH-0810(+); VH-0890(+); NH-1017(p); VE-0812(+); NH-1000T(+)(&); BF-0677(+); BF-0675(+); BF-0670(+); GC-0700(+); GC-0750(+);HS-7000(+); SD-0150(+);NE-1030(+);HR-1360(+); HG-0760(+);LX-0951(+);LX-0957(+); VE-1890K, TP-1100(+), NH-1017T NH-1017(+), NH-1000T+, BF-0670F	HB or better	UL94	UL
Alt.)	Chi Mei	PA-757(+); PH-88HT(+)	HB or better	UL94	UL
Alt.)	Grand	D-150, D-1000A	HB or better	UL94	UL
Alt.)	TEIJIN	TN-7500(c), TN-7500F(#), MN-3600H(#), MN-3600V(#)	HB or better	UL94	UL
Alt.)	Haier	HRABS-RS; HRABS-HG; CR-3002	HB or better	UL94	UL
Alt.)	UNIC TECHNOLOGY CORP	UR-3006+ (RXX), UR-200+	HB or better	UL94	UL
Alt.)	LG	AF312T1; GN-5001TF(#); LUPOY GN-5001RF(T); LUPOY GN-5008HF(#); HF350(#); HF380(#); SE885(#); SE750(#); XG568(#); XG569(#); HF388(#); LUPOY GP-1000; LUPOY GP-1000(m)(#); LUPOY GP-1000(#), AF-342T GN-5001TF, GN-5001RF, GP-1000L	HB or better	UL94	UL
Alt.)	TEIJIN	TN-7500(c), TN-7500F(#), MN-3600H(#), MN-3600V(#)	HB or better	UL94	UL

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Alt.)	KingFa	4418; HF-606; HF-626; FRABS-518; JH960 6(M); FRHIPS-960; 5197; HIPS-5197; HIPS-4418; HIPS-3399; HIPS-CM(ee); HIPS-HG(ee); HIPS-510 (o); HIPS-550; CK-61(M) (##); RS-(hh)0; HP-126; ABS-600; ABS-122; GAR-322; GAR-332; GAR-220; H12; G360; GAR-011; CK-55(M) (##); CK-58(M) (##); GAR-011C; GAR-011(ww); CK-100, FRABS-518 RD-900, RS-900, GAR-011(L85) GAR-011(L65), GAR-011(HG6) RS-300, RS-400	HB or better	UL94	UL
Alt.)	STYROLUTION	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better	UL94	UL
Alt.)	STYRON	STYRON A-TECH 1400	HB or better	UL94	UL
Alt.)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better	UL94	UL
Alt.)	DOOSAN CORPORATION ELECTROMATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better	UL94	UL
Alt.)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	HIPS-2000; ABS-3070H	HB or better	UL94	UL
Alt.)	Basf	GP-35, GP-22	HB or better	UL94	UL
Alt.)	WISTRON	GA35	HB or better	UL94	UL
Alt.)	HINGLONG	HL-ABSPCR35/65/85	HB or better	UL94	UL
Alt.)	WOTE	2100	HB or better	UL94	UL
Alt.)	GUO HENG	YOUHO(1302)(B), YOUHO(1303)(B)	HB or better	UL94	UL
Alt.)	SABIC	C6600	HB or better	UL94	UL
Alt.)	CHIMEI	PA-756S	HB or better	UL94	UL
Alt.)	COVESTRO DEUTSCHLAND AG	FR2000, FR3005	HB or better	UL94	UL
Alt.)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better	UL94	UL
Alt.)	Interchangeable	Interchangeable	HB or better	UL94	UL
Stand	Interchangeable	Interchangeable	HB or better	UL94	UL
PCB	Interchangeable	Interchangeable	Min. V-1 105°C	UL796	UL
LCD panel (LED backlight)	AUO	M250HTN**.* (*can be 0~9, A~Z, blank for marking purpose)	All 25” TFT glass is minimum 0.4mm thickness	UL 60950-1 IEC60950-1	UL, Test in the equipment
Fuse (F981,F982)(Located on mainboard for LPS)	Littelfuse/ Wickmann	392, 382	T4AL, 250Vac	IEC 60127, UL248	VDE,UL
Alt.)	Littelfuse	0663 series	T4AL, 250Vac	IEC 60127, UL248	VDE,UL

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Alt.)	Conquer	MET,MST	T4AL, 250Vac	IEC 60127, UL248	VDE,UL
Alt.)	SAVE FUSETECH INC	SR-5 series, SS-5 series	T4AL, 250Vac	IEC 60127, UL248	VDE,UL
Alt.)	Suzhou Walter	2000, 2010 series	T4AL, 250Vac	IEC 60127, UL248	VDE,UL
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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6 de junho de 2024
June 6, 2024

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Appendix M (Modelo/Model: 24G2, **24G2******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:*
I/P: 100-240V ~ 50/60Hz, 1.5A, Class Ⅰ; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 62368-1:2018; **CISPR 32:2015+AMD1:2019**, **CISPR 35:2016, EN IEC 61000-3-2:2019+A1:2021, Class D**, **EN 61000-3-3:2013+A2:2021**, IEC 61000-4-2: 2008, **IEC 61000-4-3:2020** , IEC 61000-4-4: 2012, IEC 61000-4-5 : 2014+A1:2017,IEC 61000-4-6 : 2013, **IEC 61000-4-8:2009, IEC 61000-4-11:2020**

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	**TPM236********** (*can be 0-9, A-Z or blank for marketing purpose).**	**23.6 inch TFT (power consumption: 27.1W; LED array voltage: 60V)**	**IEC/EN 62368-1**	Tested in equipment
Alt.	TPV	**TPM238********** (*can be 0-9, A-Z or blank for marketing purpose).**	**23.8 inch TFT (power consumption: 16.5W; LED array voltage: 54V)**	**IEC/EN 62368-1**	Tested in equipment
Plastic Enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T (+) (&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+) (RR70), GC-1017(+) (RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG (+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E115797 and tested with appliance**
	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E88637 and tested with appliance**
	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E56070 and tested with appliance**
	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E80168 and tested with appliance**
	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E41613 and tested with appliance**
	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF (#), GN-5001RFD, LUPOY GN-5008HF (#), LUPOY GP-5008BF (#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F (#), SE750(#), LUPOY GN-5001RF(T),	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E67171 and tested with thickness appliance**

	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM (ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E171666 and tested with appliance**
	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E230779 and tested with appliance**
	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E345434 and tested with appliance**
	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E328304 and tested with appliance**
	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c), GA35, NC30	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E359575 and tested with appliance**
	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E135175 and tested with appliance**
	GUO HENG (DONGGUAN)	YOUHO (####) (Y)	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E471190 and tested with appliance**
	HUIZHOU WOTE	2100	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E310240 and tested with appliance**
	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E98529 and tested with appliance**
	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E108538 and tested with appliance**
	TRINSEO EUROPE GMBH (STYRON)	STYRON A-TECH 1200	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E162447 and tested with appliance**
	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E314268 and tested with appliance**
	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E103670 and tested with appliance**
	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E207780 and tested with appliance**
	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E205938 and tested with appliance**
	CHI LIN	GA-1(aaa), GA-1535	HB or better, thickness **1.6**mm min.	UL 94 **IEC/EN 62368-1**	**UL E177071 and tested with appliance**

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Mylar sheet	**SUZHOU OMAY OPTICAL MATERIALS CO LTD**	**SE42B, SE42B-F**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E249605 and tested with appliance**
Alt.	**SICHUAN LONGHUA FILM CO LTD**	**PC-770F, PC-770F-A, PC-770**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E254551 and tested with appliance**
	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	**DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E199019 and tested with appliance**
	CHENGDU KANGLONGXIN PLASTICS CO LTD	**KLX FRPC-1860B, KLX FRPC-1870B**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 I IEC/EN 62368-1**	**UL E315185 and tested with appliance**
	CHENGDU KANGLONGXIN PLASTICS CO LTD	**KLX FRPC- 870B**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E315185 and tested with appliance**
	CHENGDU KANGLONGXIN PLASTICS CO LTD	**DFPET 6023**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E199019 and tested with appliance**
	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	**DFR117EC OC, DFR117EC OB**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E199019 and tested with appliance**
	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	**DFR117EC O**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E199019 and tested with appliance**
	JINGMEN GORUN TECHNOLOGY CO LTD	**HF70**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E305163 and tested with appliance**
	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	**DFR3A(d)**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E199019 and tested with appliance**
	CHENGDU KANGLONGXIN PLASTICS CO LTD	**KLX PP BK- 10**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E315185 and tested with appliance**
	KUNSHAN DOBESTY OPTOELECTRONIC MATERIALS CO LTD	**PC9842B, PC9821B, PC9832B**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E339070 and tested with appliance**
	SHENZHEN TEESUN TECHNOLOGY CO LTD	**FR370, FR370F, FE383**	**min. 0.4mm thickness, min. V-1, 105°C**	**UL 94 IEC/EN 62368-1**	**UL E329660 and tested with appliance**
Base stand (optional)	**LOTTE ADVANCED MATERIALS CO LTD**	**SD-0150(+)**	**HB or better, 60°C, thickness 1.4mm**	**UL 94 IEC/EN 62368-1**	**UL E115797 and test with appliance**
Alt.	**Interchangeable**	**Interchangeable**	**HB or better, 60°C, thickness 1.4mm**	**UL 94:2016 IEC 60695-11-10:2013(2nd Edition)**	**UL or other EU certification**
PCB	**Three Sun**	**SMS-1**	**V-0, 130°C**	**UL 796 IEC/EN 62368-1**	**UL E217670 and test with appliance**
Alt.	**Interchangeable**	**Interchangeable**	**V-1 or better Min. 130°C**	**UL 796:2016 IEC 60695-11-10:2013(2nd Edition)**	**UL or other EU certification**
Metal enclosure	**Interchangeable**	**Interchangeable**	**Metal thickness: min. 0.81mm**	**IEC/EN 62368-1**	**None**
Switching Power Supply Board 715G9611 by TPV					
AC-Inlet (CN901)	**Solteam**	**ST-01, SC04**	10A, 250V, **15A, 250Vac,** 70°C	IEC/ EN 60320-1, **ANSI/UL498**	**VDE 40015691, UL E200241**
	Zhang Jia Gang-Hua Jie	**SA-4S series,**	10A, 250V, **15A, 250Vac,** 70°C	IEC/ EN 60320-1, **ANSI/UL498**	**VDE 40003610, UL E154342**
	Rong Feng	**SS-120, SS-7B**	10A, 250V, **15A, 250Vac,** 70°C	IEC/ EN 60320-1, **ANSI/UL498**	**VDE 40028101, UL E102641**
	Shenzhen Delikang / Douling	**CDJ-3, CDJ-3-1, CDJ-7 series**	10A, 250V, **15A, 250Vac,** 70°C	IEC/ EN 60320-1, **ANSI/UL498**	**VDE 40010513, UL E217394**

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	Inalways	**0707-1, 0711-2, 0714**	10A, 250V, **15A, 250Vac,** 70°C	IEC/ EN 60320-1, **ANSI/UL498**	**Nemko P03100418, UL E94191**
	TECX	**TU-301 series**	10A, 250V, **15A, 250Vac,** 70°C	IEC/ EN 60320-1	**VDE 40025582 UL E220004**
	Yueqing Hongchang	**DB-14-14-L, DB-14-14-15, DB-14 series**	10A, 250V, **15A, 250Vac,** 70°C	IEC/ EN 60320-1, **ANSI/UL498**	**VDE 40028645, UL E327347**
	Solteam	**SC04**	**VDE:10A/250Vac, UL: 10A/250Vac,12A/250Vac. 70°C**	**IEC/EN 60320-1, ANSI/UL498**	**VDE 40033517, UL E200241**
	Zhang Jia Gang-Hua Jie	**SA-4D**	**10A, 250Vac, 15A, 250Vac, 70°C**	**IEC/EN 60320-1, UL498**	**TUV R 50274698 UL E154342**
Fuse **(F901) on primary circuit**	**Littelfuse Inc**	**382, 392 +**	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, **ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40018249, 126983, UL E67006**
Alternative	**Littelfuse, Inc. Wickmann**	**TE5 400 series**	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, **ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40026355 UL E67006**
	Conquer	**MET MST PTU**	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, **ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40017155, 40017118, 40001462, UL E82636**
	Walter	**SR-5, SS-5**	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, **ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40020046, 40015513, UL E19180**
	Ever Island Electric Co., Ltd. & Walter Electric	**2000, 2010 series**	**T4AL, 250Vac**	**IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40018790, 40018781 UL E220181**
	Littelfuse Inc	**877**	**T4AL, 250Vac**	**IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 0023242, UL E10480**
	Better	**932**	**T4AL, 250Vac**	**IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40033369, UL E300003**
Fuse **(F902) on secondary circuit**	**Littelfuse Inc**	**382, 392 +**	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, **ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40018249, 126983, UL E67006**
Alternative	**Littelfuse, Inc. Wickmann**	**TE5 400 series**	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, **ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40026355 UL E67006**
	Conquer	**MET MST PTU**	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, **ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40017155, 40017118, 40001462, UL E82636**
	Walter	**SR-5, SS-5**	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, **ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40020046, 40015513, UL E19180**
	Ever Island Electric Co., Ltd. & Walter Electric	**2000, 2010 series**	**T4AL, 250Vac**	**IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40018790, 40018781 UL E220181**
	Littelfuse Inc	**877**	**T4AL, 250Vac**	**IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 0023242, UL E10480**
	Better	**932**	**T4AL, 250Vac**	**IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1 ANSI/UL 248-14**	**VDE 40033369, UL E300003**
Y- Capacitor (C920, C921) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40001804, UL E146544**
	TDK	CS, CD	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40029780, UL E37861**
	Murata	KH, KX	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40002831, UL E37921**

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	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 85°C	UL 60384-14	**UL E201384**
	Kunshan Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40012143, UL E249006**
	HAOHUA ELECTRONIC CO.	**CT7**	**Max. 1000pF, 250Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40003902, UL E233106**
	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 135256, UL E145038**
	SUCCESS	SE	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40037218, UL E114280**
	SUCCESS	**SB**	**Max. 1000pF, 250Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40037221, UL E114280**
	SUCCESS	**SL**	**Max. 1000pF, 250Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40019465, UL E114280**
Y- Capacitor (C900) Y1 type (optional)	Walsin	AH **series**	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40001804, UL E146544**
	TDK	CD	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40029780, UL E37861**
	Murata	KX	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40002831, UL E37921**
	JYA-NAY	JN	Max. 3300pF, 250Vac, 85°C	UL 60384-14	**UL E201384**
	Kunshan Wansheng	CT7	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40012143, UL E249006**
	HAOHUA ELECTRONIC CO.	**CT7**	**Max. 3300pF, 250Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40003902, UL E233106**
	YINAN DON'S ELECTRONIC COMPONENT CO.,LTD	CT81	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 135256, UL E145038**
	SUCCESS	SE	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40037218, UL E114280**
	SUCCESS	**SB**	**Max. 3300pF, 250Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40037221, UL E114280**
	SUCCESS	**SL**	**Max. 3300pF, 250Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40019465, UL E114280**
X-Capacitor (C914) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. **0.33**µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40024534, UL E183780**
	Europtronic	MPX	Max. **0.33**µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40018238, UL E211347**
	Europtronic	**MPX2**	**Max. 0.33µF, 275Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40025981, UL E211347**
	Liow Gu	GS-L	Max. **0.33**µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40023391, UL E186321**
	Arcotronics (KEMET)	R.46	Max. **0.33**µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	**ENEC DAT97000141, UL E97797**
	EPCOS	B3292#	Max. **0.33**µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40010694, UL E97863**
	Nanjing Tengen Rongguangda	MKP	Max. **0.33**µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	**VDE 40028680, UL E200596**
	ZhuHai Sung Ho Electronics Co., Ltd.	**CMPP**	**Max. 0.33µF, 275Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40026078, UL E327138**
	NANJING TENGEN RONG GUANG DA ELECTRONICS (GROUP) CO LTD	**MKP**	**Max. 0.33µF, 275Vac, 85°C**	**IEC 60384-14, UL 60384-14**	**VDE 40028680, UL E200596**
Photo Coupler (U902)	Sharp	PC123	**Di=0.7mm, int.cr=thermal cycling 3), ext.cr=8.0mm, 4000Vac, 100°C**	**EN 60747-5-5,** UL1577	VDE 40008087, UL E64380
	Everlight Electronics Co., Ltd.	EL817, EL817M	**Di=0.5mm, int.cr=6.0mm, ext.cr=7.7mm, 4000Vac, 100°C**	**EN 60747-5-5,** UL1577	VDE 132249, UL E214129
	Everlight Electronics Co., Ltd.	**EL1013**	**Di=0.4mm, int. cr=thermal cycling 3.ext. cr=8.0mm, 4000Vac, 100°C**	**EN 60747-5-5, UL1577**	**VDE 40028391 UL E214129**
	Lite-on	LTV-817	**Di=0.4mm, int.cr=4.0mm, ext.cr=8.0m, 3000Vac, 100°C**	**EN 60747-5-5,** UL1577	VDE 40015248, UL E113898
	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	**Di=0.4mm, int.cr=thermal cycling 3), ext.cr=8.0mm, 4000Vac, 100°C**	**EN 60747-5-5,** UL1577	VDE 40008862, UL E72422
	TOSHIBA	TLP781F, TLP781	**Di=0.4mm, int.cr=thermal cycling 3), ext.cr=8.0mm, 4000Vac, 100°C**	**EN 60747-5-5,** UL1577	VDE 40021173, UL E67349
	TOSHIBA	TLP421F	**Di=0.4mm, int. cr=thermal cycling3. ext. cr=8.0mm, 4000Vac, 100°C**	**EN 60747-5-5,**, UL1577	VDE 40010944, UL E67349

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Line Choke (L901) (Optional)	CHANNELON	373G0174577H	105 °C	**IEC/EN 62368-1**	Tested in equipment
	LDFJ	373G0174577J	105 °C	**IEC/EN 62368-1**	Tested in equipment
	ASET	373G0174577X	105 °C	**IEC/EN 62368-1**	Tested in equipment
Transformer (T901)	Phoenix	380GL19P0170P	Class B	**IEC/EN 62368-1**	Tested in equipment
Alt.	LIANFENG DONGJJIN	380GL19P0170J	Class B	**IEC/EN 62368-1**	Tested in equipment
Alt.	TAICHANG	380GL19P0170S	Class B	**IEC/EN 62368-1**	Tested in equipment
Alt.	LITAI	380GL19P0170L	Class B	**IEC/EN 62368-1**	Tested in equipment
Alt.	YUVA	80GL19P-17-N	Class B	**IEC/EN 62368-1**	Tested in equipment
-Bobbin	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, min. 0.45mm thick	UL94 **IEC/EN 62368-1**	**UL E41429 and tested with appliance**
Alt.	CHANG CHUN PLASTICS CO., LTD.	T200NA	V-0, 150°C, min. 0.45mm thick	UL94 **IEC/EN 60950-1**	**UL E59481 and tested with appliance**
-Triple insulation wire	SUZHOU VDE YUSHENG ELECTRONIC CO LTD	TIW-B	Reinforced insulation, 130°C	**IEC/EN 62368-1**, UL 2353	**VDE 40033527 UL E364920**
Alt.	Cosmolink Co Ltd	TIW-M	Reinforced insulation, 130°C	**IEC/EN 62368-1**, UL 2353	**VDE 138053 UL E213764**
-Insulation tape	JingJiang YaHua Pressure Sensitive Glue Co., Ltd	CT	PET film insulating tape, 130°C	UL510 **IEC/EN 62368-1**	**UL E165111 and tested with appliance**
Alt.	SYMBIO INC	35660Y*(%)	PET film insulating tape, 130°C	UL510 **IEC/EN 62368-1**	**UL E50292 and tested with appliance**
-Tube	GREAT HOLDING INDUSTRIAL CO., LTD.	TFL	PTFE, 200°C, VW-1	UL224 **IEC/EN 62368-1**	**UL E156256 and tested with appliance**
Bleeder Resistor (R916, R917,R918)	**Tzai Yuan Enterprise Co., Ltd.**	**HSMD series**	**Max.680KΩ, min. 1/4W**	**IEC/EN 62368-1**	**UL CB (Report No.OFF-12CA24616-A-1)**
Alt.	**Yageo Corporation**	**RV1206 series**	**Max.680KΩ, min. 1/4W**	**IEC/EN 62368-1**	**UL CB(Report No.E491387-4787887815-1 Original)**
	Fenghua	**RVS-06 series**	**Max.680KΩ, min. 1/4W**	**IEC/EN 62368-1**	**Nemko CB (Report No.336992)**
	Fenghua	**RS-06 series**	**Max.680KΩ, min. 1/4W**	**IEC/EN 62368-1**	**Nemko CB (Report No.337017) CHI LIN**
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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Appendix AA (Modelo/Model: 27G2, **27G2******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012 / CISPR 32:2015/COR1:2016, CISPR 24:2010, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2004 / IEC 61000-4-4: 2012, IEC 61000-4-5: 2005 / IEC 61000-4-5 : 2014+A1:2017, IEC 61000-4-6: 2008, IEC 61000-4-6: 2008 / IEC 61000-4-6 : 2013, IEC 61000-4-11: 2004 / IEC 61000-4-11 : 2004+A1:2017

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel with LED backlight (for 27.0 inch models) (Flat)	TPV	TPM270***-****.* (*can be 0-9, A-Z or blank for marketing purpose).	27.0 inch TFT curve panel (power consumption: 29.49W; LED array voltage: 44.8V)	--	Tested in equipment
LCD Panel with LED backlight (for 23.8 inch models) (Flat)	TPV	TPM238***-****.* (*can be 0-9, A-Z or blank for marketing purpose).	23.8 inch TFT curve panel (power consumption: 16.5W; LED array voltage: 54V)	--	Tested in equipment
Plastic Enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, thickness 2.0mm min.	UL 94	UL
	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, thickness 2.0mm min.	UL 94	UL
	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, thickness 2.0mm min.	UL 94	UL
	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, thickness 2.0mm min.	UL 94	UL
	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, thickness 2.0mm min.	UL 94	UL
	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, thickness 2.0mm min.	UL 94	UL

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	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, thickness 2.0mm min.	UL 94	UL
	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, thickness 2.0mm min.	UL 94	UL
	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, thickness 2.0mm min.	UL 94	UL
	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, thickness 2.0mm min.	UL 94	UL
	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c), GA35, NC30	HB or better, thickness 2.0mm min.	UL 94	UL
	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, thickness 2.0mm min.	UL 94	UL
	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, thickness 2.0mm min.	UL 94	UL
	HUIZHOU WOTE	2100	HB or better, thickness 2.0mm min.	UL 94	UL
	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, thickness 2.0mm min.	UL 94	UL
	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, thickness 2.0mm min.	UL 94	UL
	STYRON	STYRON A-TECH 1200	HB or better, thickness 2.0mm min.	UL 94	UL
	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, thickness 2.0mm min.	UL 94	UL
	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, thickness 2.0mm min.	UL 94	UL
	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, thickness 2.0mm min.	UL 94	UL
	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, thickness 2.0mm min.	UL 94	UL
	CHI LIN TECHNOLOGY CO LTD	GA-1(aaa), GA-1535	HB or better, thickness 2.0mm min.	UL 94	UL

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Certificado de Conformidade

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Switching Power Supply Board 715G9611 by TPV					
AC-Inlet (CN901)	Inalways Corporation Co., Ltd.	0707-1, 0711-2, 0714	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	ZhangJia Ganghuajie Electronics Co., Ltd.	SA-4S,	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	DELIKANG/ Douling	CDJ-3, CDJ-3-1	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	Solteam Electronics Co., Ltd.	ST-01	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
	TECX	TU-301 series	10A, 250V, 70°C	IEC/ EN 60320-1	VDE
	Yueqing Hongchang	DB-14	10A, 250V, 70°C	IEC/ EN 60320-1, UL 498	VDE, UL
Fuse (F901 in primary)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc. Wickmann	392, 382-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Fuse (F902 in secondary for L.P.S.)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Littelfuse, Inc. Wickmann	392, 382-series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
	Ever Island Electric Co. ltd and Walter electric	2000, 2010 serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, UL 248	VDE, UL
Y- Capacitor (C920, C921) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	TDK	CS, CD	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Murata	KH, KX	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Matsushita	NS-A, NS-B	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	SUCCESS	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
Y- Capacitor (C900) Y1 type (optional)	Walsin	AH	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Wansheng	CT7	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	TDK	CD	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Murata	KX	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL

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	Matsushita	NS-A	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	JYA-NAY	JN	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Hongming	F	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Yinan Don's	CT81	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	SUCCESS	SB, SE	Max. 3300pF, 250Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
X-Capacitor (C914) (X1 or X2 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Faratronic	MKP62	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Europtronic	MPX, MPX2	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	ENEC (Semko), UL
	Hua Jung	MKP	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Liow Gu	GS-L	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
	Arcotronics	R.46	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	ENEC(IMQ) UL
	EPCOS	B3292#	Max. 0.47µF, 275Vac, 85°C	IEC 60384-14, UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di>0.4mm, int = thermal cycling 3. , ext.>8.0mm, 5000 Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40008087, UL E64380
	Everlight Electronics Co., Ltd.	EL817, EL817M UL : EL8X7 (X=1 or 2)	Di>0.5mm, int. cr=thermal cycling 3. , ext. cr>7.7mm, 3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 132249, UL E214129
	Vishay Semiconductor	TCET1103	Di>0.5mm, int. cr >6.0mm, ext. cr >7.7mm, 3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40028080, UL E76222
	Lite-on	LTV-817	Di > 0.6mm, int. cr=thermal cycling 3. , ext. cr > 8.0mm, 4800Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40015248, UL E113898
	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di>0.4mm, int. cr=thermal cycling 3. , ext. cr > 8.0mm, 5000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40008862, UL E72422
	TOSHIBA	TLP781F, TLP781	Di>0.5mm, int. cr=thermal cycling 3. , ext. cr > 8.0mm, 4800Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40021173, UL E67349
	TOSHIBA	TLP421F	Di >0.4mm, int. cr=thermal cycling 3. , ext. cr > 8.0mm, 5000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE 40010944, UL E67349
Line Choke (L901) (Optional)	CHANNELON	373G0174577H	105 °C	--	Tested in equipment
	LDFJ	373G0174577J	105 °C	--	Tested in equipment
	ASET	373G0174577X	105 °C	--	Tested in equipment
Transformer (T901)	Phoenix	380GL19P0170P	Class B	IEC/EN 60950-1	Tested in equipment
Alt.	LIANFENG DONGJJIN	380GL19P0170J	Class B	IEC/EN 60950-1	Tested in equipment
Alt.	TAICHANG	380GL19P0170S	Class B	IEC/EN 60950-1	Tested in equipment
Alt.	LITAI	380GL19P0170L	Class B	IEC/EN 60950-1	Tested in equipment
Alt.	YUVA	80GL19P-17-N	Class B	IEC/EN 60950-1	Tested in equipment
-Bobbin	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, min. 0.45mm thick	UL94	UL
Alt.	GREAT LEOFLON INDUSTRIAL CO., LTD	TRW(B)	V-0, 150°C, min. 0.45mm thick	UL94	UL
Alt.	CHANG CHUN PLASTICS CO., LTD.	T200NA	V-0, 150°C, min. 0.45mm thick	UL94	UL

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-Triple insulation wire	SUZHOU VDE YUSHENG ELECTRONIC CO LTD	TIW-B	Reinforced insulation, 130°C	IEC/EN 60950-1, UL 2353	VDE, UL
Alt.	Cosmolink Co Ltd	TIW-M	Reinforced insulation, 130°C	IEC/EN 60950-1, UL 2353	VDE, UL
-Insulation tape	JingJiang YaHua Pressure Sensitive Glue Co., Ltd	CT	PET film insulating tape, 130°C	UL510	UL
Alt.	SYMBIO INC	35660Y*(%)	PET film insulating tape, 130°C	UL510	UL
-Tube	GREAT HOLDING INDUSTRIAL CO., LTD.	TFL	PTFE, 200°C, VW-1	UL224	UL
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

Certificado de Conformidade

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Appendix N **(Modelo/Model: 323FCX, 323QCX, **323********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012 / CISPR 32:2015/COR1:2016 Class B, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5 : 2014+A1:2017, IEC 61000-4-6: 2013, IEC 61000-4-8:2009, IEC 61000-4-11 : 2004+A1:2017

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPM315WF* (*can be 0-9, A-Z or blank for marketing purpose).	31.5 inch TFT LCD (power consumption: 36.7W; LED array voltage: 42V)	IEC 60950-1	Tested in equipment
(Alternative)	TPV	TPM315WQ* (*can be 0-9, A-Z or blank for marketing purpose).	31.5 inch TFT LCD (power consumption: 48.84W; LED array voltage: 42V)	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI) (Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance
(Alternative)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL E88637 and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL E56070 and tested with appliance
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL E80168 and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS] (Bayer)	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL E41613 and tested with appliance
(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL E67171 and tested with appliance

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(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL E171666 and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL E230779 and tested with appliance
(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL E345434 and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL E328304 and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL E359575 and tested with appliance
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL E135175 and tested with appliance
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(#####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL E471190 and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL E310240 and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL E98529 and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065, GP-22	HB or better, min. 2.0mm thickness	UL 94	UL E108538 and tested with appliance
(Alternative)	TRINSEO EUROPE GMBH (STYRON)	STYRON ATECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL E162447 and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL E314268 and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTROMATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL E103670 and tested with appliance

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(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL E207780 and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL E205938 and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL E177071 and tested with appliance
AC Inlet	Solteam	ST-01, SC04	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Hongchang	DB-14-4, DB-14-05	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Primary input wire (L/N)	Interchangeable	Interchangeable	Min. 20AWG, 600V, VW-1, 105°C	UL 758	UL
Earthing wire	Interchangeable	Interchangeable	Min. 18AWG, 600V, VW-1, 105°C	UL 758	UL
LED light source (on rear enclosure)	Everlight Electronics Co., Ltd.	5050 RGC+IC	DC 5V, in compliance with Exempt Group	IEC 62471:2006 EN 62471:2008	SGS (Report No. OC-2019-30025)
Fuse (F701, F702 on DC input of main board 715G9960 for L.P.S.)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	TE5 400 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Conquer	MET series, MST series, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Switching mode power supply board: 715GA321 by TPV					
Primary connector (CN901)	J.S.T	VH series	7 A, 250 Vac	IEC/EN 61984	VDE 40012096 Tested with appliance
(Alternative)	J.S.T	VT series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	M3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	W7913 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Pontronics	3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Jowle	A3963 series	7 A, 250 Vac	--	Tested with appliance

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Fuse (F9901)	Littelfuse, Inc. Wickmann	382-series, 392	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3	VDE
(Alternative)	Littelfuse, Inc.	TE5 400	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Conquer	MET, MST, PTU	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
Y- Capacitor (C9915, C9916) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 100pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C9917, C9919) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 470pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C9911) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	Murata	KX	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C9918, C9920) (optional)	Ultra Tech Xiphi	HQX	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL
(Alternative)	EPCOS	B3292#	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.33µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U9102, U9401)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F, TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Discharge IC (U9104)	Leadtrend Technology Corp.	LD5760GR	IP: 100-250V~, 47-63Hz	IEC 60950-1+A1+A2	Nemko CB (Ref. Certif. No. NO84030)
Line Choke (L9901, L9902) (Optional)	CHANNELON	373G0174575H	105°C	--	--
(Alternative)	LIANZHEN	373G0174575Z	105°C	--	--
PFC Choke (L9801)	YUVA	373G0174315N	105°C	--	--
(Alternative)	ASET	373G0174315X	105°C	--	--
(Alternative)	CHENPING	373G0174315CP	105°C	--	--

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Transformer(T9102)(Alternative)	TPV	380GL32P530H	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
- Triple Wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, UL 2353	VDE, UL
Transformer (T9102) (Alternative)	YUVA	380GL32P530N	Class B	Applicable part according to IEC60950-1 and IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(Alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
- Triple Wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, UL 2353	VDE, UL
Bleeder Resistor (R9165)	Interchangeable	Interchangeable	Max. 10kΩ, min. 1/4W	--	--
Bridging Diode (BD9901)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C9814, C9815)	Interchangeable	Interchangeable	47µF, max. 450V, 105°C	--	--
Transistor (Q9801, Q9101, Q9102)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Thermistor (TH9903, TH9904)	Interchangeable	Interchangeable	Min. 3Ω at 25°C, min. 2A	--	--
Switching mode power supply board: 715GA451 by TPV					
Primary connector (CN901)	J.S.T	VH series	7 A, 250 Vac	IEC/EN 61984	VDE 40012096 Tested with appliance
(Alternative)	J.S.T	VT series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	M3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Xinya	W7913 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Pontronics	3962 series	7 A, 250 Vac	--	Tested with appliance
(Alternative)	Jowle	A3963 series	7 A, 250 Vac	--	Tested with appliance
Fuse (F901 in primary)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE
(Alternative)	Littelfuse Phils. Inc.	TE5 400 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Conquer	MET series, MST series, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL

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(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
Fuse (F902 in secondary for L.P.S.)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	TE5 400 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Conquer	MET series, MST series, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3, UL 248-1	VDE, UL
Y- Capacitor (C920, C921) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN, JY	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C900) Y1 type (optional)	Walsin	AH	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Matsushita	NS-A	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 3300pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
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June 5, 2027

X-Capacitor (X1 or X2 type) (C914) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, FI, UL
(Alternative)	Europtronic	MPX2	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	EPCOS	B3292#	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics	R.46	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZHUHAI SUNG HO ELECTRONICS CO LTD	CMPP	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	FARAD	PXK	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.47µF, 275Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F, TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Line Choke (L901) (optional)	CHANNELON	73G174-241-H	105°C	--	--
(Alternative)	YUVA	73G174-241-N	105°C	--	--
(Alternative)	ASET	73G174-241-X	105°C	--	--
(Alternative)	CHENPING	73G174-241-CP	105°C	--	--
Transformer (T901)	Phoenix	380GL19P0170P	Class B	IEC/EN 60950-1	Tested with appliance
(Alternative)	LIANFENG DONGJJIN	380GL19P0170J	Class B	IEC/EN 60950-1	Tested with appliance
(Alternative)	TAICHANG	380GL19P0170S	Class B	IEC/EN 60950-1	Tested with appliance
(Alternative)	LITAI	380GL19P0170L	Class B	IEC/EN 60950-1	Tested with appliance
- Bobbin	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, min. 0.45mm thick	UL94	UL
(Alternative)	GREAT LEOFLON INDUSTRIAL CO., LTD	TRW(B)	V-0, 150°C, min. 0.45mm thick	UL94	UL
(Alternative)	CHANG CHUN PLASTICS CO., LTD.	T200NA	V-0, 150°C, min. 0.45mm thick	UL94	UL
- Triple insulation wire	SUZHOU VDE YUSHENG ELECTRONIC CO LTD	TIW-B	Reinforced insulation, 130°C	IEC/EN 60950-1, UL 2353	VDE, UL

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(Alternative)	Cosmolink Co Ltd	TIW-M	Reinforced insulation, 130°C	IEC/EN 60950-1, UL 2353	VDE, UL
- Insulation tape	JingJiang YaHua Pressure Sensitive Glue Co., Ltd	CT	PET film insulating tape, 130°C	UL510	UL
(Alternative)	SYMBIO INC	35660Y*(%)	PET film insulating tape, 130°C	UL510	UL
- Tube	GREAT HOLDING INDUSTRIAL CO., LTD.	TFL	PTFE, 200°C, VW-1	UL224	UL
Thermistor (TH901)	Interchangeable	Interchangeable	Min. 3Ω at 25°C, min. 5A	--	--
Bleeder Resistor (R916, R917, R918)	Interchangeable	Interchangeable	Max. 680kΩ, min. 1/4W	--	--
Bridging Diode (BD901, BD902)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C902, C903)	Interchangeable	Interchangeable	50-150µF, max. 450V, 105°C	--	--
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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Appendix O **(Modelo/Model: 22P2, 22P2********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2012 / CISPR 32:2015/COR1:2016, CISPR 24:2010/A1:2015, IEC 61000-3-2:2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5 : 2014+A1:2017, IEC 61000-4-6: 2013, IEC 61000-4-8:2009, IEC 61000-4-11 : 2004+A1:2017

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel	TPV	TPM215*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 12.42W; LED array voltage: 47.6V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	H*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 19.4W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
(Alternative)	BOE	M*215***-*** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 10.9W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	BM215W**-**** (*can be 0-9, A-Z or blank for Marketing purpose).	21.5 inch TFT LCD (power consumption: 16.3W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	L&T	LM215W**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 14.25W; LED array voltage: 52.7V)	IEC 60950-1	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 18.3W; LED array voltage: 34.1V)	IEC 60950-1	Tested in equipment
(Alternative)	INNOLUX	INNOLUX M215H**-**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.53W; LED array voltage: 36.66V)	IEC 60950-1	Tested in equipment
(Alternative)	LG Display	LM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.21W; LED array voltage: 51.2V)	IEC 60950-1	Tested in equipment
(Alternative)	SAMSUNG	LTM215**** (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 13.62W; LED array voltage: 48.2V)	IEC 60950-1	Tested in equipment
(Alternative)	AUO	*215H****.* (*can be 0-9, A-Z or blank for marketing purpose).	21.5 inch TFT LCD (power consumption: 16.55W; LED array voltage: 54.4V)	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI) (Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance
(Alternative)	GRAND PACIFIC PETROCHEMICAL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL E88637 and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL E56070 and tested with appliance

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(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL E80168 and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS] (Bayer)	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL E41613 and tested with appliance
(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL E67171 and tested with appliance
(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL E171666 and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL E230779 and tested with appliance
(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL E345434 and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL E328304 and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL E359575 and tested with appliance
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL E135175 and tested with appliance

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(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL E471190 and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL E310240 and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL E98529 and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065, GP-22	HB or better, min. 2.0mm thickness	UL 94	UL E108538 and tested with appliance
(Alternative)	TRINSEO EUROPE GMBH (STYRON)	STYRON ATECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL E162447 and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL E314268 and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTROMATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL E103670 and tested with appliance
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(VS), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL E207780 and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL E205938 and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL E177071 and tested with appliance
Switching mode power supply board: 715G7300 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Alt.)	Yueqing Hongchang	DB-14	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Fuse (F901)	Littelfuse, Inc. Wickmann	382-series, 392	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.)	Littelfus, Inc.	TE5 400	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE
Alt.)	Conquer	MET, MST, PTU	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Alt.)	Cooper Bussmann	SR-5, SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL

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Alt.)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T3.15AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	TDK	CS, CD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Murata	KH, KX	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Hongming	F	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Wansheng	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Haohua	CT7	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Samwha	SD	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Matsushita	NS-A, NS-B	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Success	SB, SE	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Yinan Don's	CT81	Max. 680pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	JYA-NAY	JN	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Matsushita	NS-A	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Success	SB, SE	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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X-Capacitor (X1 or X2 type) (C901)(optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Europtronic	MPX	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Europtronic	MPX2	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Arcotronics (KEMET)	R.46	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	ENEC, UL
Alt.)	TDK	B3292	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Alt.)	Farad	PXK	Max. 0.22µF, Min. 250Vac, 85°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Alt.)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Alt.)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
Alt.)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
Alt.)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
Alt.)	Renesas	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
Alt.)	TOSHIBA	TLP781F, TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Alt.)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Line Choke (L901)(Optional)	ASET	73G-174-192-X	105°C	--	--
Alt.)	DADON	73G-174-192-H	105°C	--	--
Alt.)	TAICHANG	73G-174-192-S	105°C	--	--
Alt.)	FRONTIER	73G-174-192-F	105°C	--	--
Alt.)	LI TAI	73G-174-192-L	105°C	--	--
Alt.)	YUVA	73G-174-192-N	105°C	--	--
Alt.)	DARFON	73G-174-192- DN	105°C	--	--
Transformer (T902) (Alt.)	Channelon	380GL19P535H	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL

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Certificado de Conformidade

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Transformer (T902) (Alt.)	YUVA	380GL19P535N	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	TPV	S80GL19P535V	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Furukawa	TEX-E	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	SYMBIO INC	No.35660Y*(%)	130°C	UL510	UL
(alternative)	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	LFDJ	380GL19P535J	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	Cosmolink	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT(c)	130°C	UL510	UL
Transformer (T902) (Alt.)	PHOENIX	380GL19P535P	Class B	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	Sumitomo	PM-9820	V-0, Phenolic, 150°C	UL 94	UL
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B+@	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
- Insulation tape	JINGJIANG YAHUA	No.CT*(c)(g)	130°C	UL510	UL
Cord set	Various	Various	--	NBR 14136, NBR NM 60884-1	INMETRO

Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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Appendix P (Modelo/Model: 27B1,27B1HM,27B1******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 19Vdc, 1.31A, Class III, IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32: 2012 Class B, CISPR 24:2010, IEC 61000-3-2:2014 Class D, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel with LED backlight type (for 27 inch models)	TPV	TPM270W**-******** (* can be 0~9, A~Z, "." Or blank)	27 inch TFT LCD (power consumption: 20.9 W; LED array voltage: 54V	--	Tested in equipment
(Alternative)	BOE	MV270F**-*** (* can be 0~9, A~Z, "." or blank)	27 inch TFT LCD (power consumption: 10.6 W; LED array voltage: 59V	--	Tested in equipment
(Alternative)	CHIMEI INNOLUX	M270HGE-*** (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 22.72W; LED Array Voltage: 60V	--	Tested in equipment
(Alternative)	SAMSUNG	LTM270HP** (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 21.3W; LED Array Voltage: 47.0V	--	Tested in equipment
(Alternative)	LG Display	LM270WQ* (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 24.1W; LED Array Voltage: 54.7V	--	Tested in equipment
(Alternative)	INNOLUX	M270K**-*** (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 27.9W; LED Array Voltage: 36.3V	--	Tested in equipment
(Alternative)	L&T	LM270W**-**** (* can be 0-9, A-Z or blank for marketing purpose only)	27 inch TFT type, with LED back light, power consumption: 14.75W; LED Array Voltage: 47.3V	--	Tested in equipment
Enclosure	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E115797)
(Alternative)	GRAND PACIFIC PETROCHEMIC AL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E88637)
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E56070)
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E80168)
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E41613)

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(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E67171)
(Alternative)	GRAND PACIFIC PETROCHEMIC AL CORP	D-150, D-1000, D-1000A	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529, E244324)
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E345434)
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E73656)
(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), GP-1000(m)(#), LUMILOY GP-1000(#), SE750(#), LUPOY GN-5001RF(T), SE885(#), HF388(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E171666)
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E310240)
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(#####)(Y)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E471190)
(Alternative)	HUIZHOU WOTE	2100	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E135175)
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E98529)
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E108538)
(Alternative)	STYRON	STYRON A- TECH 1200	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E162447)
(Alternative)	TOTAL PETROCHEMIC ALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E314268)

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(Alternative)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E103670)
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(V S), C6600E (VS)(X)	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E207780)
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E205938)
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, 1.5mm thickness min. 60°C	UL 94	UL (E177071)
Power Adapter	L&T	STK025-19131T	IP: 100-240 Vac, 50-60 Hz, 1.3A. OP: 19Vdc, 1.31A, 40˚C, Class I, 5000m Comply with SELV and L.P.S.	IEC 62368-1: 2014	CB by TUV SUD (Certificate No. SG PSB-IV-02436M1)
(Alternative)	TPV	ADPC1925EX	IP: 100-240 Vac, 50-60 Hz, 1.3A. OP: 19Vdc, 1.31A, LPS, 40 ˚C , Class I, altitude operating: 5000 m	IEC 60950-1: 2005+A1	CB by Nemko (certificate No. NO83042)
PCB	FUJIAN MILKY-WAY PRINTED CIRCUIT BOARD INDUSTRIAL CO LTD	MW-2, MW-CEM1	Min. V-1 or better, min. 105°C	UL 94, UL 796	UL (E168066)
(Alternative)	Interchangeable	Interchangeable	Min. V-1 or better, min. 105°C	UL 94, UL 796	UL
Cord set	Interchangeable	Interchangeable	----	NBR 14136, NBR NM 60884-1	INMETRO

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Appendix Q (Modelo/Model: U27P2,27P2********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A, Class I, IP20*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (ed.2); am1, am2, CISPR 22: 2008, CISPR 24: 2010 + A1: 2015, CISPR 32: 2015+A1:2019, Class B, IEC 61000-3-2: 2018, Class D, IEC 61000-3-3: 2013 + A1: 2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+ A1: 2017, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Componente/Component	Fabricante/ Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
LCD Panel	TPV	TPM270WF*-****** (*can be 0-9, A-Z or blank for marketing purpose).	27 inch TFT LCD (power consumption: 21.32W; LED array voltage: 51V)	IEC 60950-1	Tested in equipment
(Alternative)	PANDA	LM270**** (*can be 0-9, A-Z or blank for marketing purpose).	27 inch TFT LCD (power consumption: 27.08W; LED array voltage: 51V)	IEC 60950-1	Tested in equipment
Plastic enclosure	LOTTE ADVANCED MATERIALS CO LTD (SAMSUNG SDI) (Cheil)	SD-0150(+), VH-0810(+), VE-0812(+), NH-1000T(+)(&), GC-0700(+++)(RR28), GC-0700A(RR), GC-0750(+)(RR70), GC-1017(+)(RR30), VE-1890(+), BF-0675(+), BF-0670(+), NH-1017(p), NH-1017T, NH-1017SG(+), BF-0677(+), HS-7000(+), HG-0760(+), NE-1030(+), HR-1360(+), LX-0951(+), LX-0957(+), TH-1100(+), TN-1100(+)	HB or better, min. 2.0mm thickness	UL 94	UL E115797 and tested with appliance
(Alternative)	GRAND PACIFIC PETROCHEMIC AL CORP	D-150, D-1000, D-1000A	HB or better, min. 2.0mm thickness	UL 94	UL (E88637) and tested with appliance
(Alternative)	CHI MEI CORPORATION	PA-757(+), PH-88, PA-756S	HB or better, min. 2.0mm thickness	UL 94	UL (E56070) and tested with appliance
(Alternative)	ALBIS PLASTIC GMBH	GP-35, GP-22, 495F	HB or better, min. 2.0mm thickness	UL 94	UL (E80168) and tested with appliance
(Alternative)	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000 series, FR3005 series	HB or better, min. 2.0mm thickness	UL 94	UL (E41613) and tested with appliance

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(Alternative)	LG CHEM LTD	HF350(#), HF380(m), HF380NS, HF380(#), HF-380(#), HF-380(m), HF-380, HF-380NS, HF380X, AF312T1, AF342T1, LUPOY GN-5001TF(#), GN-5001RFD, LUPOY GN-5008HF(#), LUPOY GP-5008BF(#), SE750(#), XG568(#), XG569(#), GP-1000L, GP-1000F(#), SE750(#), LUPOY GN-5001RF(T)	HB or better, min. 2.0mm thickness	UL 94	UL (E67171) and tested with appliance
(Alternative)	KINGFA SCI & TECH CO LTD	4418, 5197, FRABS-518, HIPS-5197, HF-606, HF-626, FRABS-518, GAR-011C, JH960 6(M), FRHIPS-960, RS-900, RS-300, RS-400, GAR-011, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-900, CK-55111, JH960 6(M), FRHIPS-960, HIPS-4418, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee), HIPS-510 (o), HIPS-550, CK-61(M) (##), RS-(hh)0, HP-126, ABS-660, ABS-122, GAR-322, GAR-332, GAR-220, H12, G360, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or better, min. 2.0mm thickness	UL 94	UL (E171666) and tested with appliance
(Alternative)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, CR-3002	HB or better, min. 2.0mm thickness	UL 94	UL (E230779) and tested with appliance

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(Alternative)	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85, HL-ABS-PCR65, HL-ABS-PCR35	HB or better, min. 2.0mm thickness	UL 94	UL (E345434) and tested with appliance
(Alternative)	ORINKO (HEFEI) ADVANCED PLASTIC CO LTD	ABS-3070H, HIPS-2000	HB or better, min. 2.0mm thickness	UL 94	UL (E328304) and tested with appliance
(Alternative)	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA(M)(b)(c)	HB or better, min. 2.0mm thickness	UL 94	UL (E359575) and tested with appliance
(Alternative)	UNIC TECHNOLOGY CORP	UR-3006+(RXX), UR-200+	HB or better, min. 2.0mm thickness	UL 94	UL (E135175) and tested with appliance
(Alternative)	GUO HENG (DONGGUAN)	YOUHO(####)(Y)	HB or better, min. 2.0mm thickness	UL 94	UL (E471190) and tested with appliance
(Alternative)	HUIZHOU WOTE	2100	HB or better, min. 2.0mm thickness	UL 94	UL (E135175) and tested with appliance
(Alternative)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), TN-7500F(#), MN-3600V(#), MN-3600H(#)	HB or better, min. 2.0mm thickness	UL 94	UL (E98529) and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	495F GR2, 495F KG2, 495F GR21, 495F KG21, PC2065	HB or better, min. 2.0mm thickness	UL 94	UL (E108538) and tested with appliance
(Alternative)	INEOS STYROLUTION GROUP GMBH	STYRON A- TECH 1200	HB or better, min. 2.0mm thickness	UL 94	UL (E162447) and tested with appliance
(Alternative)	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441; 260-XX	HB or better, min. 2.0mm thickness	UL 94	UL (E314268) and tested with appliance
(Alternative)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A; DS-1202G; DS-7106	HB or better, min. 2.0mm thickness	UL 94	UL (E103670) and tested with appliance
(Alternative)	SABIC JAPAN L L C	C6600(GG)(X)(V S), C6600E (VS)(X)	HB or better, min. 2.0mm thickness	UL 94	UL (E207780) and tested with appliance
(Alternative)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 2.0mm thickness	UL 94	UL (E205938) and tested with appliance
(Alternative)	CHI LIN	GA-1(aaa), GA-1535	HB or better, min. 2.0mm thickness	UL 94	UL (E177071) and tested with appliance
Mylar sheet	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	SICHUAN LONGHUA FILM CO LTD	PC-770F, PC-770F-A, PC-770	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1860B, KLX FRPC-1870B	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL

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(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECOC, DFR117ECOB	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	JINGMEN GORUN TECHNOLOGY CO LTD	HF70	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP BK-10	min. 0.4mm, thickness, min. V-1, 105°C	UL 94	UL
(Alternative)	KUNSHAN DOBESTY OPTOELECTRONIC MATERIALS CO LTD	PC9842B	min. 0.4mm, thickness, min. V-1, 80°C	UL 94	UL
(Alternative)	SHENZHEN TEESUN TECHNOLOGY CO LTD	FR370, FR370F, FE383	min. 0.4mm, thickness, min. V-1, 80°C	UL 94	UL
PCB	Interchangeable	Interchangeable	Min. V-1 or better, min. 130°C	UL 94, UL 796	UL
Cord set	Interchangeable	Interchangeable	----	NBR 14136, NBR NM 60884-1	INMETRO
Switching mode power supply board: 715GB227 by TPV (to be used together with mainboard 715GA732)					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	ENEC, UL
(Alternative)	Zhang Jia Gang-Hua Jie	SA-4S, SA-4S-1, SA-4D, SA-4S 9	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Inalways	0707-1, 0711-2, 0714	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	DELIKANG	CDJ-3, CDJ-3-1	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	TECX	TU-301 series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
(Alternative)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14 Series	10A, 250Vac	IEC/ EN 60320-1 UL60320-1	VDE, UL
Power switch (SW901) (optional)	Rong Feng Industrial Co., Ltd.	RF-1003	VDE: 10(4)A, 250Vac UL: 10A, 250Vac	IEC/EN 61058-1, UL 1054	VDE, UL
(Alternative)	Solteam Electronics Co Ltd	MR-21 series	ENEC: 6A, 250Vac UL:10A, 125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	MR-21S	ENEC: 6A, 250Vac UL:10A, 125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Solteam Electronics Co Ltd	OR-L series, OR-P series	ENEC: 6A, 250Vac UL: 10A/125Vac, 6A/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL

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(Alternative)	Solteam Electronics Co Ltd	MR-22 series	ENEC: 12(4)A, 250Vac UL: 12A,125/250Vac	IEC/EN 61058-1, UL 1054	ENEC, UL
(Alternative)	Chily	3024 series	VDE:16(4)A, 250Vac UL: 15A,125/250Vac	IEC/EN 61058-1, UL 1054	VDE, UL
(Alternative)	Ningbo Yinzhou Lihe Switch Factory	RL3-4	VDE: 10(4), 250Vac UL: 16A, 125Vac	IEC/EN 61058-1, UL 1054	VDE, UL
Fuse (F901)	Littelfuse, Inc. Wickmann	382-series, 392	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3	VDE
(Alternative)	Conquer	MET, MST, PTU	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T4AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Fuse (F902) (sec. for LPS)	Littelfuse, Inc. Wickmann	382-series, 392	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse, Inc.	TE5 400	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3	VDE
(Alternative)	Conquer	MET MST-series, PTU	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Cooper Bussmann	SR-5, SS-5	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Ever Island Electric Co., Ltd. & Walter Electric	2000, 2010 series	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
(Alternative)	Littelfuse Phils. Inc.	877	T5AL, 250Vac	IEC/ EN 60127-1 IEC/ EN 60127-3 UL 248-1	VDE, UL
Y- Capacitor (C901, C902) Y1 or Y2 type (optional)	Walsin	AC, AH	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CS, CD	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KH, KX	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL

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(Alternative)	Hongming	F	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	TDK	CD	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Murata	KX	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	JYA-NAY	JN	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hongming	F	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Wansheng	CT7	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Haohua	CT7	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Samwha	SD	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Success	SB, SE	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Yinan Don's	CT81	Max. 2200pF, 250Vac, 105°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C903, C922) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	ENEC(Semko), UL

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(Alternative)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Europtronic	MPX, MPX2	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	Arcotronics (KEMET)	R.46	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	ENEC(IMQ), UL
(Alternative)	EPCOS	B3292#	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
(Alternative)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123	Di=0.7mm, ext. cr ≥8.0mm, min.3000Vac, 110°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Vishay Semiconductor	TCET1103	Di=0.6mm, ext. cr=8.4mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL817, EL817M	Di=0.5mm, ext. cr=7.7mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Nemko, Fimko
(Alternative)	Everlight Electronics Co., Ltd.	EL1013	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko
(Alternative)	Lite-on	LTV-817	Di=0.4mm, ext. cr ≥7.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL
(Alternative)	Renesas	PS2561-1 PS2561L-1 PS2561L1-1 PS2561L2-1 PS2561DL1-1	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Nemko, Fimko
(Alternative)	TOSHIBA	TLP781F TLP781	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
(Alternative)	TOSHIBA	TLP421F	Di=0.4mm, ext. cr=8.0mm, min.3000Vac, 100°C	DIN EN 60747-5-5, UL1577	VDE, UL, Semko, Fimko
Line Choke (L901A) (Optional) (For power board 715GB227 type A)	CHANNELON	373G0174563H	105°C	--	--
(Alternative)	LDFJ	373G0174563J	105°C	--	--
(Alternative)	LZ	373G0174563Z	105°C	--	--
Line Choke (L901A) (Optional) (For power board 715GB227 type B)	JIANGSU CHANNELON	73G174-65-H	105 °C	--	--
(Alternative)	YUVA	73G174-65-N	105 °C	--	--
(Alternative)	TPV	S73G17465V	105 °C	--	--
(Alternative)	Xiamen TDK	73G174-65-T	105 °C	--	--
(Alternative)	ASET	73G174-65-X	105 °C	--	--

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(Alternative)	TAICHANG	73G174-65-S	105 °C	--	--
Transformer (T901) ((Alternative)	CHANNELON	380GL32P559H	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	CHANG CHUN	T200NA	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Transformer (T901) ((Alternative)	LFDJ	380GL32P559J	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	CHANG CHUN	T200NA	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	Cosmolink	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Transformer (T901) ((Alternative)	PHOENIX	380GL32P559P	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Bobbin	Sumitomo	PM-9750	V-0, Phenolic, 150°C	UL 94	UL
Triple insulation wire	YUSHENG	TIW-B(x)	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL, VDE
Teflon tube	GREAT HOLDING	TEFLON TUBE TFL	200°C	UL 224	UL
Bleeder Resistor (R901, R902, R903, R933, R934, R935)	Interchangeable	Interchangeable	Max. 1.3MΩ, min. 1/4W	--	--
Current sensor resistor (R916)	Interchangeable	Interchangeable	Min. 0.33Ω, 2W	--	--
Bridging Diode (BD901, BD902) (Optional)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--
Ripple Capacitor (C904)	Interchangeable	Interchangeable	45-150µF, max. 450V, 105°C	--	--

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June 6, 2024

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Appendix R (Modelo/Model: 25G3ZM, 25G3******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V~, 50/60Hz, 1.5A, Class I, IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (ed.2); am1, am2, CISPR 22: 2008, CISPR 24: 2010 + A1: 2015, CISPR 32: 2015+A1:2019, Class B, IEC 61000-3-2: 2018, Class D, IEC 61000-3-3: 2013 + A1: 2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+ A1: 2017, IEC 61000-4-6: 2013, IEC 61000-4-8: 2009, IEC 61000-4-11: 2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Componente/Component	Fabricante/ Manufacturer	Tipo/Modelo Type/Model	Características técnicas/ Technical data	Norma/ Standard	Marca de conformidade/ Mark(s) of conformity
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
LCD Panel	AUO	M250H****.* (*can be 0-9, A-Z or blank for marketing purpose).	24.5 inch TFT LCD (power consumption: 16.82W; LED array voltage: 51.7V)	--	Tested in equipment
Alt.)	LG Display	LM245W** (*can be 0-9, A-Z or blank for marketing purpose).	24.5 inch TFT LCD (power consumption: 21.8W; LED array voltage: 52.2V)	--	Tested in equipment
Alt.)	TPV	TPM245W**-****** (*can be 0-9, A-Z or blank for marketing purpose).	24.5 inch TFT LCD (power consumption: 17.2W; LED array voltage: 54.0V)	--	Tested in equipment
Tube used to wrap metal chassis pillar	JIANGSU PEARL SILICONE RUBBER MATERIAL CO LTD	TMC-8750A series, HD-87	V-0, 150°C, min. thickness 0.6mm	UL 94, UL746	UL E231325 and tested with appliance
Alt.)	SHENZHENSHI SENMUSI TECHNOLOGY CO LTD	SMS	V-0, 150°C, min. thickness 0.6mm	UL 94, UL746	UL E477535 and tested with appliance
Switching mode power supply board: 715GC023					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC16/FI/20/10036, UL E200241
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40003610, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 9, SA-4S 6	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 7	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4D	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	TUV R 50274698 0001-0002, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40028101, UL E102641
Alt.)	Kunshan DLK Electronics	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40010513, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40015913, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-7, CDJ-7 1	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	SE-ENEC-2001967, UL E317189
Alt.)	TECX	TU-301 series	10A, 250Vac	ANSI/UL60320-1	UL E220004

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Alt.)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14-05, DB-14-15, DB-14-07, DB-14-11-L, DB-14-14-L, DB-14-23	10A, 250Vac	IEC/EN 60321-1, ANSI/UL60320-1	VDE 40028645, UL E327347
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0714-1, 0711-2	10A, 250Vac	ANSI/UL60320-1	UL E94191
Alt.)	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC, UL, TUV mark
Fuse (F901) on primary	Littelfuse Inc.	382	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R50310551 0001-0004, UL E10480
Alt.)	Conquer	MET	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017157, UL E82636
Alt.)	Conquer	MST	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R503717560001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018790, UL E220181
Alt.)	Walter	2010 Serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T4AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T4AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092

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Alt.)	Walter	ICP-Series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T4AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003
Fuse (F902, F903) on secondary for L.P.S.	Littelfuse Inc.	382	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018250, UL E67006
Alt.)	Littelfuse Inc.	392	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50310551 0001-0004, UL E10480
Alt.)	Conquer	MET	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017155, UL E82636
Alt.)	Conquer	MST	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 503717560001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40020046, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018787, UL E220181
Alt.)	Walter	2010 Serie(s)	T5AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092

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Alt.)	Walter	ICP-Series	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T5AL, 250Vac	EN 60127-1, EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003
Y- Capacitor (C920, C921) Y1 or Y2 type (optional)	Walsin	AC	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280

Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C900) Y1 type (optional)	Walsin	AH	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 3300pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 3300pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C914) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.47µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596

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Alt.)	Europtronic	MPX	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.47µF, Min. 275Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT9700014 1, UL E97797
Alt.)	TDK	B3292	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.47µF, Min. 275Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	Jianghao	CBB62B	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Photo Coupler (U902)	Sharp	PC123 (UL), PC123 Option Y (VDE)	Di more than 0.4mm, int = thermal cycling test, ext. more than 8.0mm, 5000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40008087, UL E64380
Alt.)	Vishay Semiconductor	TCET1103-3034	Di more than 0.5mm, int = thermal cycling test, ext. cr more than 7.7mm, 4000Vac, 100°C.	EN 60747-5-5	VDE 40028080
Alt.)	Everlight Electronics Co., Ltd.	EL817	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 8.0mm, 4000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 132249, UL E214129
Alt.)	Everlight Electronics Co., Ltd.	EL817M (VDE), EL817 (UL)	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 8.0mm, 4000Vac, 110°C.	IEC/EN 60747-5-5	VDE 132249, UL 214129
Alt.)	TOSHIBA	TLP781F, TLP781	Di more than 0.5mm, int. cr =thermal cycling test, ext. cr more than 6.5mm, 4800Vac, 115°C.	EN 60747-5-5, ANSI/UL 1577	VDE 40021173, UL E67349
Alt.)	TOSHIBA	TLP421F	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.0mm, 5000Vac, 110°C.	IEC/EN 60747-5-5	VDE 40010944
Alt.)	RENESAS ELECTRONICS CORPORATION	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, 5000Vac, 100°C.	EN 60747-5-5, ANSI/UL 1577	VDE 40008862, UL E72422
Alt.)	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.1mm, 4000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40028391, UL E214129
Alt.)	Lite-On	LTV-817	Di more than 0.6mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, 4800Vac, 115°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40015248, UL E113898
Alt.)	Interchangeable	Interchangeable	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, min. 4000Vac, min. 100°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE, UL
Line Choke (L901) (Optional)	ASET	373G0174558X	130°C	--	--
Alt.)	LIANFENG	373G0174558J	130°C	--	--

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Alt.)	Taichang	373G0174558S	130°C	--	--
Transformer (T901)	PHOENIX	380GL19P0170P	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E332529, VDE40033527
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	LIANFENG	380GL19P0170J	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	TPV	80GL19P-17-N	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	SYMBIO INC	NO. 35660Y*d	130°C	UL 510	UL E50292
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	Taichang	380GL19P0170S	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	GREAT LEOFLON INDUSTRIAL CO.□LTD	TRW(B)	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E211989, VDE 136581
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	LI TAI	380GL19P0170L	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	CHANG CHUN PLASTICS CO. LTD	200NA	Phenolic, V-0, 150°C	UL94	UL E59481
-Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
- Insulation tape (Alt.)	SYMBIO INC	NO. 35660Y*d	130°C	UL 510	UL E50292

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-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBE TFL	200°C	UL 224	UL E156256
Rating information of components which are not critical components on power board 715GC023					
P.C.B	Interchangeable	Interchangeable	V-1 or better Min. 130°C.	UL 796	UL
Current sensing Resistor (R919)	Interchangeable	Interchangeable	Min. 0.3Ω, min. 1/10W	--	--
Thermistor (TH901)	Interchangeable	Interchangeable	Min. 3Ω at 25°C, min. 2A	--	--
Bridging Diode (BD901, BD902)	Interchangeable	Interchangeable	Min.600V, min.2.0A	--	--
Ripple Capacitor (C902, C903)	Interchangeable	Interchangeable	47-180μF, max. 450V, 105°C	--	--
Bleeder Resistor (R916, R917, R918)	Interchangeable	Interchangeable	Each Max. 680KΩ, Min.1/4W	--	--
Transistor (Q901)	Interchangeable	Interchangeable	Min.500V, min.2A	--	--

Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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Appendix S **(Modelo/Model: **24B30********, **24B35********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 19VDC, 1.31A; Class III; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (Second Edition) + Am1:2009 + Am2:2013; CISPR 32:2015+A1:2019, CISPR 35: 2016, IEC 61000-3-2: 2014, IEC 61000-3-3: 2013, IEC 61000-4-2: 2008, IEC 61000-4-3:2006/A2:2010, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014, IEC 61000-4-6:2013/COR1:2015, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
External power supply	TPV Electronics (Fujian) Co., Ltd.	ADPC1925EX	Input: 100-240 V AC, 50 - 60 Hz, 1,3 A, Class II; Output: 19,0 V DC, 1,31 A, 25,0 W, Tma = 40 °C, PS2, Altitude: 5000m	IEC 62368-1:2014; EN 62368-1:2014 + A11:2017	Nemko (CB certificate No. NO106527; CB report No. 373441)
Alt.	Ten Pao Industrial Co., Ltd.	S025ANP1900131	input: 100-240 V AC, 50 /60 Hz, 0,6 A, Class II; Output: 19,0 V DC, 1,31 A, 25,0 W, Tma = 40 °C, Outputs comply with LPS, Altitude: 5000m	IEC 62368-1:2018	TUV Rheinland (CB Cert.: JPTUV-149645, report No.: CN23WCFE001)
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	V-0, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, Min. 60 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, Min. 60 °C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5mm, 130 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0mm, Min. 60 °C	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E88637)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50 °C	ANSI/UL 94	UL (E314268)

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Certificado de Conformidade

Certificate of Conformity

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Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	V-2 or Better, Min. thickness: 0,75 mm, 60 °C	ANSI/UL 94	UL (E207780)
Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##)	HB or Better, Min. thickness: 1,0 mm, 50 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(II)	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee)	HB or Better, Min. thickness: 1,3 mm, 50 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35) (a), UR-3006+(R90) (a), UR-3006+(RXX) (a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG(+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR35/65/85	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E345434)

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Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(####)(Y), YOUHO13(##)(YY)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E471190)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO.,LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E514505)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO., LTD	Ecorex® RN - +(R #)	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H(#)	HB or Better, Min. thickness: 0,45 mm, 80 °C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60 °C	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125 °C	ANSI/UL 94	UL (E238753)
Alt.	Interchangeable	Interchangeable	HB or Better, Min. thickness: 0,45 mm, Min. 50 °C	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	Min. V-1, 105 °C	UL 796	UL
LCD Panel	TPV	TPM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	TPV	TPT238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	AUO	M238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	AUO	LM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	AUO	P238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	L&T	LM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	LGD	LM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	INNOLUX	M238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	PANDA	LM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	BOE	MV238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	SHARP	LQ238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	SAMSUNG	LTM238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance
Alt.	BOE	ME238********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8" with LED backlight	IEC 62368-1	Test with appliance

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Appendix T **(Modelo/Model: 27G2E1, 27G2********, C27G2********, C*27G2********, Q27G2********, U27G2********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2015 + A1:2019 Class B, CISPR 35:2016, IEC 61000-3-2:2018, IEC 61000-3-3: 2013 + A1:2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11 : 2020

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 oC	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	V-0, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80 oC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, Min. 60 oC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105 oC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60 oC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, Min. 60 oC	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6mm, 60 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6mm, 50 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5mm, 130 oC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0mm, Min. 60 oC	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E88637)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50 oC	ANSI/UL 94	UL (E314268)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	V-2 or Better, Min. thickness: 0,75 mm, 60 oC	ANSI/UL 94	UL (E207780)
Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##),	HB or Better, Min. thickness: 1,0 mm, 50 oC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(II)	HB or Better, Min. thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee)	HB or Better, Min. thickness: 1,3 mm, 50 oC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E171666)

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Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60 oC	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35) (a), UR-3006+(R90) (a), UR-3006+(RXX) (a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG(+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 50 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50 oC	ANSI/UL 94	UL (E115797)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR35/65/85	HB or Better, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E345434)
Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(####)(Y), YOUHO13(##)(YY)	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E471190)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO.,LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60 oC	ANSI/UL 94	UL (E514505)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO., LTD	Ecorex® RN - +(R #)	HB or Better, Min. thickness: 0,8 mm, 60 oC	ANSI/UL 94	UL (E514505)

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Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H(#)	HB or Better, Min. thickness: 0,45 mm, 80 oC	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60 oC	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125 oC	ANSI/UL 94	UL (E238753)
Alt.	Interchangeable	Interchangeable	HB or Better, Min. thickness: 0,45 mm, Min. 50 oC	ANSI/UL 94	UL
Internal metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 0,5 mm	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Base stand (optional)	LOTTE CHEMICAL CORPORATION	SD-0150	HB or Better, thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL (E115797)
Alt.	Interchangeable	Interchangeable	HB or Better, thickness: 1,0 mm, 60 oC	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	V-1 or better, Min. 130 oC	UL 796	UL
Insulation Sheet (between power board and LCD panel or between power board and metal cover or metal enclosure to cover the openings)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	Polycarbonate, min. thickness: 0,4mm, V-0, 80 oC	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	Polycarbonate, min. thickness: 0,4 mm, V-0, 110 oC	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	Polycarbonate, min. thickness: 0,4 mm, V-0, 130 oC	ANSI/UL 94	UL (E199019)
Alt.	Sichuan Longhua Film Co Ltd	PC-770, PC-770 A, PC-870 A, PC-770-60B, PC-770-60B-A, PC-770-63B, PC-770-63B-A, PC-770-65B, PC-770-65B-A, PC-770-83, PC-770-83B, PC-770-83F, PC-770F, PC-770F-A	Polycarbonate, min. thickness: 0,4mm, V-0, 80 oC	ANSI/UL 94	UL (E254551)
Alt.	KunShan Dobesty Optoelectronic Materials Co Ltd	PC9821B, PC9832B, PC9842B, DB98HD, DB98	Polycarbonate, min. thickness: 0,4mm, V-0, 80 oC	ANSI/UL 94	UL (E339070)
Alt.	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	Polycarbonate, min. thickness: 0,4mm, V-0, 80 oC	ANSI/UL 94	UL (E249605)
Alt.	JINGMEN GORUN TECHNOLOGY CO LTD	HF70, HE70(x)(#)	Polycarbonate, thickness: 0,40 mm min. V-0, 80 oC	ANSI/UL 94	UL (E305163)

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Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F TS-FR383H, TS-FR360H	Polycarbonate, thickness: 0,40 mm min. V-0, 80 oC	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR1365, TS-FR1363, TS-FR1360, TS-FR1362, TS-FR160Y, TS-FR1370F, TS-FR1370, TS-FR1383, TS-FR1370-32, TS-FR1383-13	Polycarbonate, thickness: 0,40 mm min. V-0, 125 oC	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	Polycarbonate, thickness: 0,4 mm min. V-0, 125 oC	ANSI/UL 94	UL (E357515)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-870BF, KLX FRPC-870BH, KLX FRPC-870BFH, KLX FRPC-83B, KLX FRPC-83, KLX FRPC-F70, KLX FRPC-700B, KLX FRPC-700BF, KLX FRPC-60, KLX FRPC-60H, KLX FRPC-63, KLX FRPC-63H, KLX FRPC-65, KLX FRPC-65H, KLX FRPC-1870B	Polycarbonate, thickness: 0,4 mm min. V-0, 80 oC	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1860, KLX FRPC-1860B, KLX FRPC-1860-83, KLX FRPC-1860-83B, KLX FRPC-1860-1, KLX FRPC-1860-NTC, KLX FRPC-1860B-NTC, KLX FRPC-1860B-3, KLX FRPC-1870B-K, KLX FRPC-1860B-HY, KLX FRPC-1860-HY, KLX FRPC-1860B-K, KLX FRPC-1860-K, KLX FRPC-1860W	Polycarbonate, thickness: 0,4 mm min. V-0, 80 oC	ANSI/UL 94	UL (E315185)

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Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1880, KLX FRPC-1880B, KLX FRPC-1880-83, KLX FRPC-1880-83B, KLX FRPC-1880-1, KLX FRPC-1880B-1, KLX FRPC-1880-2, KLX FRPC-1880B-2, KLX FRPC-1880-3, KLX FRPC-1880B-3, KLX FRPC-1880-NTC, KLX FRPC-1880B-NTC, KLX FRPC-1880B-HY, KLX FRPC-1880-HY, KLX FRPC-1880B-K, KLX FRPC-1880-K, KLX FRPC-1860-YM, KLX FRPC-1860B-YM, KLX FRPC-1880-YM, KLX FRPC-1880B-YM, KLX FRPC-1880W, KLX FRPC-1880W-1, KLX FRPC-1860B-KS, KLX FRPC-1860-KS, KLX FRPC-1880-KS, KLX FRPC-1880B-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 125 oC	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP BK-10-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 110 oC	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1890B,KLX FRPC-1890, KLX FRPC-1890-83, KLX FRPC-1890-83B, KLX FRPC-1890-1, KLX FRPC-1890B-1, KLX FRPC-1890-2, KLX FRPC-1890B-2,KLX FRPC-1890B-2, KLX FRPC-1890-3, KLX FRPC-1890B-3, KLX FRPC-1890-NTC, KLX FRPC-1890B-NTC, KLX FRPC-1890B-HY, KLX FRPC-1890-HY, KLX FRPC-1890B-K, KLX FRPC-1890-K, KLX FRPC-1890-YM, KLX FRPC-1890B-YM KLX FRPC-1890W, KLX FRPC-1890W-1, KLX FRPC-1890B-KS, KLX FRPC-1890-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 115 oC	ANSI/UL 94	UL (E315185)
Alt.	NANTONG HUAPU PHOTOELECTRIC MATERIAL CO., LTD	HPC-EFR87X	Polycarbonate, thickness: 0,4 mm min. V-0, 80 oC	ANSI/UL 94	UL (E508063)
Alt.	Interchangeable	Interchangeable	Polycarbonate, thickness: 0,4 mm, min. V-0, Min. 80 oC	ANSI/UL 94	UL
LCD Panel	TPV	TPM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	TPV	TPT270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	AUO	M270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance

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Alt.	AUO	LM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	AUO	P270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	L&T	LM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	LGD	LM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	INNOLUX	M270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	PANDA	LM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	BOE	MV270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	SHARP	LQ270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	SAMSUNG	LTM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	BOE	ME270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Adhesive for mylar sheet between power board and metal enclosure	SYMBIO	DS50-A, DS50L	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	3M	55235, 55236, 9448A, 55230, 9495MP	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10, LA9120	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	NITTO DENKO CORP	GA835	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	TESA SE	68646	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	RIALS CORP	G4000	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance

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Alt.	FUJIAN YOUYI ADHESIVE TAPE GROUP CO., LTD	YS310	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Speaker (Optional)	Interchangeable	Interchangeable	4Ω, 2,5W *2	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
For power board 715GC023					
AC-Inlet (CN901)	Solteam	ST-01 (For ENEC) ST-01A ST-01C (For VDE) ST-01 Series (For UL)	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	ENEC (ENEC16/FI/20/10036) VDE (40015691) UL (E200241)
Alt.	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1 (For VDE), SA-4S 7, SA-4S 9 (For TUV), SA-4S 6, SA-4S 12 (For UL)	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40003610) TUV (R 50293856) UL (E154342)
Alt.	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40028101) UL (E102641)
Alt.	Kunshan DLK Electronics Technology Co., Ltd	CDJ-3	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40010513) UL (E217394)
Alt.	Kunshan DLK Electronics Technology Co., Ltd	CDJ-3-1	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40015913) UL (E217394)
Alt.	INALWAYS ELECTRONICS INC	0707-1, 0711-2, 0714	10A, 250Vac	UL 60320-1	UL (E94191)
Alt.	TECX-UNIONS TECHNOLOGY CORP	TU-301 series	10A, 250Vac	UL 60320-1	UL (E220004)
Alt.	Yueqing Hongchang Radio Co., Ltd	DB-14 series	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	VDE (40028645) UL (E327347)
Alt.	Solteam Incorporation	SC04 (For ENEC), SC04-1BWW, SC04-2BTT	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	ENEC (ENEC16/FI/20/10040) UL (E200241)

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Alt.	Interchangeable	Interchangeable	10A, 250Vac	IEC 60320-1: 2015 + A1: 2018 EN 60320-1: 2015 + AC: 2016 + AC: 2019 + A1: 2021 UL 60320-1	EU / UL certification mark
Fuse (F901 on primary)	Cooper Bussmann LLC	SR-5	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Littelfuse Inc.	382	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018249) UL (E67006)
Alt.	Littelfuse Inc.	392	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)
Alt.	Cooper Bussmann LLC	SS-5	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MET	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017157) UL (E82636)
Alt.	Conquer Electronics Co., Ltd.	MST	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	Suzhou Walter Electronic Co. Ltd.	2000	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018790) UL (E56092)

Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)
Alt.	Interchangeable	Interchangeable	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Fuse (F902, F903 in secondary)	Cooper Bussmann LLC	SR-5	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Littelfuse Inc.	382	T5AL, 250Vac	UL 248-1 UL 248-14	UL (E67006)
Alt.	Littelfuse Inc.	392	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)
Alt.	Cooper Bussmann LLC	SS-5	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MET	T5AL, 250Vac	UL 248-1 UL 248-14	UL (E82636)
Alt.	Conquer Electronics Co., Ltd.	MST	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	Suzhou Walter Electronic Co. Ltd.	2000	T5AL, 250Vac	UL 248-1 UL 248-14	UL (E56092)
Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)

Alt.	Interchangeable	Interchangeable	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011+ A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Y-cap (C920, C921, C944) (optional)	TDK CORPORATION	CD	Max. 1000 pF, 250 Vac, Min. 85°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029780) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KX	Max. 1000 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AH	Max. 1000 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001804) UL E146544
Alt.	JYA-NAY CO LTD	JN	Max. 1000 pF, AC 400 / 250 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	UL (E201384)
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 1000 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SB	Max. 1000 pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 1000 pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40012143) UL (E249006)
Alt.	Interchangeable	Interchangeable	Max. 1000 pF, Min. 250Vac, 85°C min. Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	EU / UL certification mark
Y-cap (C900) (optional)	TDK CORPORATION	CD	Max. 3300 pF, 250/ 400 Vac, Min. 85°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029780) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KX	Max. 3300 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AH	Max. 3300 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001804) UL E146544
Alt.	JYA-NAY CO LTD	JN	Max. 3300 pF, AC 400 / 250 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	UL (E201384)

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Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 3300 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SB	Max. 3300 pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 3300 pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40012143) UL (E249006)
Alt.	Interchangeable	Interchangeable	Max. 3300 pF, Min. 250Vac, 85°C min. Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	EU / UL certification mark
X- Cap. (C914) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0,47µF, AC 250/275/280/300/ 305/310V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40015608) UL (E183780)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,47µF, AC 275V; Min. 105 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40018238) UL (E211347)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,47µF, AC 275/305 V; 110 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40025981) UL (E211347)
Alt.	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0,47µF, 275 / 305 /310 VAC, X2 type, Min. 105 °C	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40000358) UL (E186600)
Alt.	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0,47µF, 275/300/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	ENEC (V4413) UL (E97797)
Alt.	LIOW GU ELECTRONICS INDUSTRY CO LTD	GS-L	Max. 0,47µF, 250/275/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40023391) UL (E186321)
Alt.	TDK (Zhuhai FTZ) Co., Ltd.	B3292	Max. 0,47µF, 305Vac; 105°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40010694) UL (E97863)
Alt.	NANJING TENGEN RONG GUANG DA ELECTRONICS (GROUP) CO LTD	MKP	Max. 0,47µF, AC 250 V / 275 / 305 / 310 V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40028680) UL (E200596)
Alt.	SHENZHEN JINGHAO CAPACITOR CO LTD	CBB62B	Max. 0,47µF, AC 250 / 280 / 305 V, Min.; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40018690) UL (E252286)

Alt.	Interchangeable	Interchangeable	Max. 0,47µF, 250Vac Min.; 100°C Min.	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	UL / EU certification mark
Optocoupler (U902)	Lite-on	LTV-817	Ext. cr ≥7,0 mm, Dti ≥ 0,4 mm, 105°	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40015248) UL (E113898)
Alt.	Sharp	PC123	Ext. cr ≥6,4 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008087) UL (E64380)
Alt.	VISHAY Semiconductor GmbH	TCET1103-3034	Ext. cr ≥ 8,4 mm, Dti ≥ 0,4 mm, 100°	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40028080)
Alt.	Everlight Electronics Co., Ltd.	EL817M, EL817	Ext. cr ≥ 7,6 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (132249) UL (E214129)
Alt.	TOSHIBA CORP	TLP781, TLP781F	Ext. cr ≥ 6,5 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40021173) UL (E67349)
Alt.	TOSHIBA CORP	TLP421F, TLP421	Min. Ext. cr ≥ 7,0 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40010944) UL (E67349)
Alt.	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Min. Ext. cr ≥ 8,1 mm, Dti ≥ 0,4 mm, 110° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40028391) UL (E214129)
Alt.	RENESAS	PS2561DL1-1, PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1	Min. Ext. cr ≥ 7,1 mm, Dti ≥ 0,4 mm, 100° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008862) UL (E72422)
Alt.	Interchangeable	Interchangeable	Min. Ext. cr ≥ 6,4 mm, Dti ≥ 0,4 mm, 100° C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	UL / EU certification mark
Line Choke (L901) (Optional)	ASET	373G0174558X	105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	LIANFENG	373G0174558J	105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Transformer (T901)	PHOENIX	380GL19P0170P	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	PHOENIX	PH01024600	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance

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Alt.	LFDJ	380GL19P0170J	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	LFDJ	BCK-35-L01379	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
- Bobbin	SUMITOMO BAKELITE CO., LTD	PM-9820	V-0, 150 °C	UL 94	UL (E41429)
- Magnet Winding	PROSPERITY ELECTRIC WIRE & CABLE CO	UEW	130°C	ANSI/UL 1446	UL (E196072)
- Alt.	HENG YA ELECTRIC KUN SHAN LTD	TYPU-130(UEW/QA-B), TYA1-130(UEW/QA-B)	130 °C	ANSI/UL 1446	UL (E245514)
- Alt.	SHANDONG SAINT ELECTRIC CO LTD	*UEW/130, QA-*/130, *UEW/130 Litz, QA-*/130 Litz, MW75-C	130 °C	ANSI/UL 1446	UL (E194410)
- Alt.	GUANGZHOU WANBAO ENAMELLED WIRE CO LTD	xUEW-130, QA-x/130	130°C	ANSI/UL 1446	UL (E167402)
- Alt.	Interchangeable	Interchangeable	130°C	ANSI/UL 1446	UL
- Triple insulation wire	KBI COSMOLINK CO., LTD.	TIW-M (For VDE), TIW-M(XX) (For UL)	Reinforced insulation, 130°C	EN 62368-1: 2014 + A11:2017 IEC 62368-1: 2014 ANSI/UL 2353	VDE (138053) UL (E213764)
- Alt.	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B* (For VDE), TIW-B* (For UL)	Reinforced insulation, 130°C	EN 62368-1: 2014 + A11:2017 IEC 62368-1: 2014 ANSI/UL 2353	VDE (40033527) UL (E332529)
- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (c)(g)	PET film insulating tape, 130°C	CAN/UL 510A	UL (E165111)
- Tube	GREAT HOLDING INDUSTRIAL CO., LTD.	TFL	PTFE, 200°C, VW-1	UL 224	UL (E156256)
- Alt.	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TT-L	PTFE, 200°C, VW-1	UL 224	UL (E180908)
Bleeding resistors (R916, R917, R918)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series,	Max. 680 kohm, 1/4 W	IEC 62368-1: 2014	CB of Nemko NO99693
Alt	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	Max. 680 kohm, 1/4 W	IEC 62368-1: 2014	CB of Nemko NO99692
Alt	YAGEO	RV0603, RV0805, RV1206	Max. 680 kohm, 1/4 W	IEC 62368-1: 2014	CB of UL certificate no. DK-64853-UL
Alt	TZAIYUAN	HSMD********* SMD*********	Max. 680 kohm, 1/4 W	IEC 62368-1: 2010	CB of UL certificate no. DK-29431-A1-UL
Alt.	Tzai Yuan Enterprise Co., Ltd.	MGUL1/4Wseries	Max. 680 kohm, 1/4 W	IEC 62368-1: 2014	CB issued by UL (CB cert No. DK-69874-UL)

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Alt.	Interchangeable	Interchangeable	Max. 680 kohm, 1/4 W	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
For main board 715GE142					
Limited current IC (U545)	Global Mixed-mode Technology Inc.	G509H10NTP1G	DC 2,7V – 5,5V; Continuous operating current of 1,0A	IEC 62368-1:2018 EN IEC 62368-1:2020 + A11: 2020 ANSI/UL 2367	[redacted] (CB report No. CN213HMD 001; CB certificate No. JPTUV-126218) UL (E232223)

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Appendix U **(Modelo/Model: 24B3HMF2, **24B3*******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2015 + A1:2019 Class B, CISPR 35:2016, IEC 61000-3-2:2018, IEC 61000-3-3: 2013 + A1:2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11: 2020

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
Plastic material of enclosure	Grand	D-1000A, D-150	HB or better, min. 1.5mm thickness	UL 94	UL (E88637)
Alt.)	LG CHEM LTD	LUPOY GN- 5001TF(#), LUPOY GN-5001RF(T), LUPOY GN-5008HF(#), LUPOY GN-2101F(m)(f1), XG568(#), XG569(#), GP-1000(m)(#), SE885(#), AF365(&), AF368(#), AF358	HB or better, min. 1.5mm thickness	UL 94	UL (E67171)
Alt.)	LOTTE CHEMICAL CORPORATION	VH-0810(+), VE-1890(+), EN-1052(+), VH-0815(+), VH-0819(+), HM-1100(+), VE-0819F, NH-1017T, NH-1017SG(+), VE-0812(+), NH-1000T(+)(&), NE-1030(+), LS-1159(r), LS-1159SF, LS-1159F, NH-1036, GC-1017(RR30), SD-0150(+), BF-0677(+), BF-0675(+), BF-0670F, GC-0700(+++)(RR28), LX-0951(+), LX-0957(+), HG-0760(+), NH-1027HF, NH-1027(+), SD-0150T, GC-1036(RR35), SC-1220R, ABF-0200E, ABF-1030NH	HB or better, min. 1.5mm thickness	UL 94	UL (E115797)

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Alt.)	KingFa	HF-606, HF-626, FRABS-518, JH960 6(M) (ccc) (##), FRHIPS-960, CK-572(M1) (##), FRABS-518C, 5197, RS-(hh)0, GAR-011C, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-55(M) (##), HP-126, CK-61(M) (##), HIPS-510 (o), HIPS-550	HB or better, min. 1.5mm thickness	UL 94	UL (E171666)
Alt.)	Covestro Deutschland AG [PC Resins]	FR3005, GF9011 MF + (z), FR3050 +	HB or better, min. 1.5mm thickness	UL 94	UL (E41613)
Alt.)	TEIJIN	TN-7500(c)	HB or better, min. 1.5mm thickness	UL 94	UL (E98529)
Alt.)	TEIJIN	MN-3600H(#)	HB or better, min. 1.5mm thickness	UL 94	UL (E244324)
Alt.)	SAMYANG	TRILOY:210NHF (@), 210NHF	HB or better, min. 1.5mm thickness	UL 94	UL (E121254)
Alt.)	CHI MEI	PC-540A, PA-765A, PA-756S, PA-757(+)	HB or better, min. 1.5mm thickness	UL 94	UL (E56070)
Alt.)	ORINKO	HIPS-2230(N), ABS-3070(T), HIPS-2000, ABS-340(X), ABS900F23	HB or better, min. 1.5mm thickness	UL 94	UL (E328304)
Alt.)	SABIC	C6600	HB or better, min. 1.5mm thickness	UL 94	UL (E207780)
Alt.)	Haier	HRABS-RS, HRABS-HG	HB or better, min. 1.5mm thickness	UL 94	UL (E230779)
Alt.)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106	HB or better, min. 1.5mm thickness	UL 94	UL (E103670)
Alt.)	INEOS STYROLUTION POLYMERS (FOSHAN) COMPANY LIMITED	3441, 260-XX	HB or better, min. 1.5mm thickness	UL 94	UL (E314268)
Alt.)	WISTRON	GA(M)(b)(c), NC(N)(a), GA85	HB or better, min. 1.5mm thickness	UL 94	UL (E359575)
Alt.)	HINGLONG	HL-ABS- PCR35/65/85	HB or better, min. 1.5mm thickness	UL 94	UL (E345434)
Alt.)	WOTE	2100	HB or better, min. 1.5mm thickness	UL 94	UL (E310240)
Alt.)	GUO HENG	YOUHO(#####)(Y), YOUHO13(##)(Y Y), YOUHE26(##)	HB or better, min. 1.5mm thickness	UL 94	UL (E471190)
Alt.)	UNIC	UR-3006+(RXX), UR-200+, UR-7085+(R90), UP-700+	HB or better, min. 1.5mm thickness	UL 94	UL (E135175)
Alt.)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 1.5mm thickness	UL 94	UL (E205938)
Alt.)	CHI LIN	GA-1(aaa)	HB or better, min. 1.5mm thickness	UL 94	UL (E177071)
Alt.)	FUHENG	HIPS-568, FH-101, FH-102	HB or better, min. 1.5mm thickness	UL 94	UL (E234833)
Alt.)	QING DAO GON TECHNOLOGY CO.,LTD.	ABS21(xx)G-A, ABS2030A, ABS20(xx)B	HB or better, min. 1.5mm thickness	UL 94	UL (E330547)
Alt.)	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	AC2820-A	HB or better, min. 1.6mm thickness	UL 94	UL (E162823)
Alt.)	Chongqing Gengye New Materials Technology Co Ltd	Ecorex® RN - + (R #), GU-022	HB or better, min. 1.5mm thickness	UL 94	UL (E514505)
Alt.)	Interchangeable	Interchangeable	HB or better, min. 1.5mm thickness	ANSI/UL 94	UL
Internal metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 0,5 mm	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance

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Certificado de Conformidade

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Base stand (optional use)	Interchangeable	Interchangeable	Metallic covered by the HB or better plastic	--	--
PWB	Interchangeable	Interchangeable	V-1 or better, Min. 105 oC	UL 796	UL
Mylar sheet (Located between power supply board and panel) (between power board and metal enclosure)	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E249605)
Alt.)	SICHUAN LONGHUA FILM CO LTD	PC-770F, PC-770F-A, PC-770	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E254551)
Alt.)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR117ECOC, DFR117ECOB, DFR117ECO, DFR3A(d)	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E199019)
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC- 1880B, KLX FRPC- 1860B, KLX FRPC- 1870B, KLX FRPC- 870B, KLX PP BK-10, KLX PP BK-10- KS	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E315185)
Alt.)	JINGMEN GORUN TECHNOLOGY CO LTD	HF70	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E305163)
Alt.)	KUNSHAN DOBESTY OPTOELECTRONIC MATERIALS CO LTD	PC9842B, PC9821B, PC9832B, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E339070)
Alt.)	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E329660)
LCD Panel	TPV	TPM238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 14.98W; LED Array Voltage: 31.9V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	LG Display	LM238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 17.76W; LED Array Voltage: 58.9V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	L&T	LM238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.1W; LED Array Voltage: 38.8V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	BOE	MV238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.04W; LED Array Voltage: 46.4V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance

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Alt.)	AUO	M238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.17W; LED Array Voltage: 44.86V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	INNOLUX	M238********** (* can be A to Z, a to z, 0 to 9, +, –, \, /, ".", "-" or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 14.19W; LED Array Voltage: 32V	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Adhesive for mylar sheet	SYMBIO	DS50-A, DS50L	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	3M	55236, 9448A, 55230, 9495MP	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10, LA9120	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	NITTO DENKO CORP	GA835	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	TESA SE	68646	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	DEXERIALS CORP	G4000	100°C, 0.05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.)	FUJIAN YOUYI ADHESIVE TAPE GROUP CO., LTD	YS310	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Tube used to wrap metal chassis pillar	JIANGSU PEARL SILICONE RUBBER MATERIAL CO LTD	TMC-8750Aseries, HD-87	V-0, 150°C, min. thickness 0.6mm	UL 94, UL746	UL E231325 and tested with appliance
Alt.)	DONGJUE SILICONE (NANJING) CO LTD	NE-Z150	V-0, 150°C, min. thickness 1.8mm	UL 94, UL746	UL E236040
Switching mode power supply board: 715GE360 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC16/FI/20/10036, UL E200241
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40003610, UL E154342
Alt.)	ZHANGJIAGANG HUAJIE ELECTRONIC CO LTD	SA-4S 9, SA-4S 6, SA-4S 7, SA-4S 12	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 502938560001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4D	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	TUV R 502746980001-0002, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40028101, UL E102641

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Alt.)	Kunshan DLK Electronics	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40010513, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40015913, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-7, CDJ-7 1	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	SE-ENEC-2001967, UL E317189
Alt.)	TECX	TU-301 series	10A, 250Vac	ANSI/UL60320-1	UL E220004
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0714-1, 0711-2	10A, 250Vac	ANSI/UL60320-1	UL E94191
Alt.)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14-05, DB-14-15, DB-14-07, DB-14-11-L, DB-14-14-L, DB-14-23, DB-14-14, DB-14-05E, DB-14-15-L-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40028645, UL E327347
Alt.)	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE, ENEC, TUV, UL
Fuse (F901) on primary	Littelfuse Inc.	382	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 503105510001-0004, UL E10480
Alt.)	Conquer	MET	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017157, UL E82636
Alt.)	CONQUER ELECTRONICS CO LTD	MST	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636

Alt.)	Conquer	PTU	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 503717560001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018787, UL E220181
Alt.)	Walter	2010	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T3.15AL, 250Vac	EN 60127-1, EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 504066050001-0003, UL E56092
Alt.)	Walter	2040	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 504263560001-0002, UL E56092
Alt.)	Walter	ICP	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003

Alt.)	Better	244	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 503357640001-0003, UL E300003
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua Electronic Co.	CT7	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SB	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861

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Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua Electronic Co.	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.47µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596
Alt.)	Europtronic	MPX	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.47µF, Min. 275Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT97000141, UL E97797

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Alt.)	TDK	B3292	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.47µF, Min. 275Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	SHENZHEN JINGHAO CAPACITOR CO LTD	CBB62B	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Bleeder Resistor (R907, R908, R909)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06********* series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB issued by NEMKO (CB report No. REP014995 and CB cert No. NO127737)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06********* series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB issued by NEMKO (CB report No. REP014996 and CB cert No. NO127738)
Alt.)	Yageo Corporation	RV1206XX- 07155ML (The first X can be D,F or J. the secondary X can be R or K)	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB issued by UL(CB report No. E491387-4787887815-1 Original, CB cert No. DK- 64853-UL)
Alt.)	Tzai Yuan Enterprise Co., Ltd.	HSMD1206*****, SMD1206*****	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB issued by UL (CB report No. DK-88747- A1-UL)
Alt.)	Interchangeable	Interchangeable	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB
Line Choke (L901) (Optional)	TAICHANG	373G0174600S	130°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	LIANFENG	373G0174600J	130°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.)	CHANNELON	373G0174600H	130°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Transformer (T901)	CHANNELON	380GL32P760H / CLT-116004	Class 130 material (B)	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
-Bobbin	CHANG CHUN PLASTICS CO.,LTD	T200HF	Phenolic, V-0, 150°C	UL94	UL E59481
-Triple insulation wire	KBI COSMOLINK CO., LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL E156256

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Transformer (T901) Alt.)	LF	380GL32P760J / BCK-30-L01625	Class 130 material (B)	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
-Bobbin	CHANG CHUN PLASTICS CO.,LTD	T200HF	Phenolic, V-0, 150°C	UL94	UL E59481
-Triple insulation wire	KBI COSMOLINK CO., LTD	TIW-M	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	PHOENIX	380GL32P760P / PH01087700-1	Class 130 material (B)	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
-Bobbin	SUMITOMO BAKELITE CO., LTD	PM-9750, PM-9823	Phenolic, V-0, 150°C	UL94	UL E41429
-Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B* (UL), TIW-B (VDE)	130°C	IEC/EN 62368-1, VDE0805 Teil1, UL 2353	UL E332529, VDE 40033527
- Insulation tape	YAHUA	CT*(c)(g)	130°C	UL 510	UL E165111
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL E156256
Current sensing Resistor (R911)	Interchangeable	Interchangeable	Min. 15kΩ, min. 1/10W	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Thermistor (NR901)	Interchangeable	Interchangeable	Min. 8Ω at 25°C, max. 5A	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Bridging Diode (BD901)	Interchangeable	Interchangeable	Min.500V, min.2.0A	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Ripple Capacitor (C907)	Interchangeable	Interchangeable	10-150µF, max. 450V, 105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance

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Appendix V **(Modelo/Model: 22B3HMF, 22B3********, Q22B3********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS: I/P: 100-240V ~ 50/60Hz, 1.5A, Class I; IPX0*

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 + A1:2009 + A2:2013; CISPR 32:2015 + A1:2019 Class B, CISPR 35:2016, IEC 61000-3-2:2018, IEC 61000-3-3: 2013 + A1:2017, IEC 61000-4-2: 2008, IEC 61000-4-3: 2020, IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11: 2020

Componente/ Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Mains cord set	Interchangeable	Interchangeable	--	NBR 14136, NBR NM 60884-1	INMETRO
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	V-0, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	HB or Better, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E207780)
Alt.	CHI MEI CORPORATION	PA-757(+), PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350, HF380	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP-1000(Z), GP-1000L	HB or Better thickness: 1,5mm, 130 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better thickness: 1,6mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568, XG568(#)	HB or Better thickness: 1,6mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569C, XG569(#)	HB or Better thickness: 1,5mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better thickness: 1,0mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GN-1002F(m)	HB or Better thickness: 1,5mm, 80 °C	ANSI/UL 94	UL (E67171)
Alt.	LOTTE CHEMICAL CORPORATION	SD-0150(+), BF-0677(+), BF-0675(+), GC-0700(+++), LX-0951(+), LX-0957(+), HG-0760(+), SD-0150T, ABF-0200E, NH-1027HF, NH-1027(+)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670F, BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	GC-1036, LS-1159SF, LS-1159F, NH-1036, GC-1036, ABF-1030NH, NH-1017SG(+)	V-0 or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E88637)
Alt.	KINGFA SCI & TECH CO LTD	5197	HB or Better Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E171666)

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Alt.	KINGFA SCI & TECH CO LTD	GAR-011 C, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-55111, HP-126	HB or Better Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	CK-61506 RS-900, RS-300, RS-400, RS-(hh)0	HB or Better Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	JH960 6(M), JH960 6(M) (ccc) (##), JH960-6(M) (ccc) (##), JH960 62(M4), JH960 62(M4) (ccc) (##), JH960-62(M4) (ccc) (##)	5VB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E230779)
Alt.	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106	V-0, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E103670)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441, 260-XX	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA1(e), GA35, NC30, GA65, GA85, GC(t) (t) – Replace the one, two, three or four numbers and/or letters to denote to serial number	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E359575)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E310240)
Alt.	UNIC	UR-200+ (+: A to Z), UR-3006+(R35), UR-3006+(R90), UR-3006+(RXX) UP-700+	HB or Better Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E205938)
Alt.	CHI LIN TECHNOLOGY CO LTD	GA-1535 GA-1(aaa)	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E177071)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E234833)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(xx)G-A, ABS2030A, ABS20(xx)B	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR35/65/85	HB or Better Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E345434)

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Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(1302)(B), YOUHO(1303)(B), YOUHO(1304)(B), YOUHO(1333)(B), YOUHO(#####)(Y),YOUHO(1303)(OP), YOUHO13(##)(YY) YOUHO1312B	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E471190)
Alt.	Chongqing Gengye New Materials Technology Co Ltd	GU-022	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E514505)
Alt.	Interchangeable	Interchangeable	HB or Better Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL
Internal metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 0,5 mm	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Base stand (optional)	LOTTE CHEMICAL CORPORATION	SD-0150(+)	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	Interchangeable	Interchangeable	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	V-1 or better, Min. 105 °C	UL 796	UL
Insulation Sheet (between power board and LCD panel, between power board and metal cover)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	Polycarbonate, min. thickness: 0,4 mm, V-0, 110 °C	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	Polycarbonate, min. thickness: 0,4 mm, V-0, 130 °C	ANSI/UL 94	UL (E199019)
Alt.	Sichuan Longhua Film Co Ltd	PC-770 series PC-770, PC-770 A, PC-870 A PC-770-60B, PC-770-60B-A, PC-770-63B, PC-770-63B-A, PC-770-65B, PC-770-65B-A, PC-770-83, PC-770-83B, PC-770-83F, PC-770F, PC-770F-A	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E254551)
Alt.	KunShan Dobesty Optoelectronic Materials Co Ltd	PC9821B, PC9832B, PC9842B, DB98HD, DB98, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E339070)
Alt.	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E249605)
Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX FRPC-1880 series	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E315185)

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Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-1860B, KLX FRPC-83	Polycarbonate, thickness: 0,40 mm, V-0, 80 °C	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX FRPC-1890 series	Polycarbonate, thickness: 0,4 mm min. V-0, 115 °C	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX PP BK-10-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 110 °C	ANSI/UL 94	UL (E315185)
Alt.	JINGMEN GORUN TECHNOLOGY CO LTD	HF70, HE70(x)(#)	Polycarbonate, thickness: 0,40 mm min. V-0, 80 °C	ANSI/UL 94	UL (E305163)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F TS-FR383H, TS-FR360H	Polycarbonate, thickness: 0,40 mm min. V-0, 80 °C	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR1370	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E357515)
Alt.	NANTONG HUAPU PHOTOELECTRIC MATERIAL CO., LTD	HPC-EFR87X	Polycarbonate, thickness: 0,4 mm min. V-0, 80 °C	ANSI/UL 94	UL (E508063)
Alt.	Interchangeable	Interchangeable	Polycarbonate, thickness: 0,4 mm min. V-0, Min. 80 °C	ANSI/UL 94	UL
LCD Panel	LG Display	LM215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	AUO	M215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	BOE	MV215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	TPV VISION INNOVATOR	TPM215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Adhesive for mylar sheet between power board and metal enclosure	SYMBIO	DS50-A, DS50L	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	3M	55235, 55236, 9448A, 55230, 9495MP	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10, LA9120	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance

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Alt.	NITTO DENKO CORP	GA835	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	TESA SE	68646	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	RIALS CORP	G4000	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Alt.	FUJIAN YOUYI ADHESIVE TAPE GROUP CO., LTD	YS310	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested with appliance
Silicone Rubber	ONGJUE SILICONE (NANJING) CO LTD	NE-Z150	Min. thickness: 1,8 mm, 150°C, V-0	UL 94	UL (E236040)
For power board model No. 715GD928:					
AC-Inlet (CN901)	Solteam	ST-01 (For ENEC) ST-01A ST-01C (For VDE) ST-01 Series (For UL)	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	ENEC (ENEC16/FI/20/10036) VDE (40015691) UL (E200241)
Alt.	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1 (For VDE), SA-4S 7, SA-4S 9 (For TUV), SA-4S 6, SA-4S 12 (For UL)	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40003610) TUV (R 50293856) UL (E154342)
Alt.	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40028101) UL (E102641)
Alt.	Kunshan DLK Electronics Technology Co., Ltd (For VDE) SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD (For UL)	CDJ-3	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40010513) UL (E217394)
Alt.	Kunshan DLK Electronics Technology Co., Ltd (For VDE) SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD (For UL)	CDJ-3-1	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40015913) UL (E217394)
Alt.	INALWAYS ELECTRONICS INC	0707-1, 0711-2, 0714	10A, 250Vac	UL 60320-1	UL (E94191)
Alt.	TECX-UNIONS TECHNOLOGY CORP	TU-301 series	10A, 250Vac	UL 60320-1	UL (E220004)
Alt.	Yueqing Hongchang Radio Co., Ltd	DB-14 series	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40028645) UL (E327347)
Alt.	Solteam Incorporation	SC04 (For ENEC), SC04-1BWW, SC04-2BTT	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	ENEC (ENEC16/FI/20/10040) UL (E200241)

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Alt.	Interchangeable	Interchangeable	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	EU / UL certification mark
Fuse (F901)	Cooper Bussmann LLC	SR-5	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Littelfuse Inc.	392	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)
Alt.	Cooper Bussmann LLC	SS-5	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MST	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)
Alt.	Interchangeable	Interchangeable	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Y-cap (C902, C903, C934) (optional)	TDK CORPORATION	CD	Max. 1000pF, 250 Vac, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40029780) UL (E37861)
Alt.	TDK CORPORATION	CS	Max. 1000pF, 250/ 300 Vac, 125 °C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40029781) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KH	Max. 1000 pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40002796) UL (E37921)

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Alt.	Murata Mfg. Co., Ltd.	KX	Max. 1000 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AC	Max. 1000pF, AC 250/300V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40001829) UL (E146544)
Alt.	Walsin Technology Corp.	AH	Max. 1000pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40001804) UL E146544
Alt.	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 1000pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40036246) UL (E154899)
Alt.	JYA-NAY CO LTD	JY	Max. 1000pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	UL (E201384)
Alt.	JYA-NAY CO LTD	JN	Max. 1000pF, AC 400 / 250 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	UL (E201384)
Alt.	Haohua Electronic Co.	CT7	Max. 1000pF, AC250/275/300V,125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40013601) UL (E233106)
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 1000pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SE	Max. 1000pF, AC 250/300 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (122995) UL (E114280)
Alt.	Success Electronics Co., Ltd.	SB	Max. 1000pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 1000pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40012143) UL (E249006)
Alt.	XIAMEN WANMING ELECTRONICS CO LTD	CK	Max. 1000pF, 250/300/400/500 Vac, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	ENEC (ENEC-04533) UL (E221839)
Alt.	Interchangeable	Interchangeable	Max. 1000pF, Min. 250Vac, Min. 85 °C, Y1/Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	EU / UL certification mark

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X- Cap. (C901) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0,33 µF, AC 250/275/280 /300/305/310V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40015608) UL (E183780)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,33 µF, AC 275V; Min. 105 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40018238) UL (E211347)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,33 µF, AC 275/305 V; 110 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40025981) UL (E211347)
Alt.	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0,33 µF, 275 / 305 /310 VAC, X2 type, Min. 105 °C	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40000358) UL (E186600)
Alt.	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0,33 µF, 275/300/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	ENEC (V4413) UL (E97797)
Alt.	LIOW GU ELECTRONICS Industry Co Ltd	GS-L	Max. 0,33 µF, 250/275/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40023391) UL (E186321)
Alt.	TDK (Zhuhai FTZ) Co., Ltd.	B3292	Max. 0,33 µF, 305Vac; 105°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40010694) UL (E97863)
Alt.	NANJING TENGEN RONG GUANG DA ELECTRONICS (GROUP) CO LTD	MKP	Max. 0,33 µF, AC 250 V / 275 / 305 / 310 V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40028680) UL (E200596)
Alt.	SHENZHEN JINGHAO CAPACITOR CO LTD	CBB62B	Max. 0,33 µF, AC 250/280/ 305V, Min. 110°C X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	VDE (40018690) UL (E252286)
Alt.	Interchangeable	Interchangeable	Max. 0,33 µF, Min. 250Vac Min. 105°C, X1 or X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL 60384-14	UL / EU certification mark
Optocoupler (U902)	Lite-on	LTV-817	Ext. cr ≥7,0 mm, Dti ≥ 0,4 mm, 105°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40015248) UL (E113898)
Alt.	Sharp	PC123	Ext. cr ≥6,4 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008087) UL (E64380)
Alt.	VISHAY Semiconductor GmbH	TCET1103-3034	Ext. cr ≥ 8,4 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015	VDE (40028080)

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Alt.	Everlight Electronics Co., Ltd.	EL817M, EL817	Ext. cr ≥ 7,6 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (132249) UL (E214129)
Alt.	TOSHIBA CORP	TLP781, TLP781F	Ext. cr ≥ 6,5 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40021173) UL (E67349)
Alt.	TOSHIBA CORP	TLP421F, TLP421	Min. Ext. cr ≥ 7,0 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40010944) UL (E67349)
Alt.	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Min. Ext. cr ≥ 8,1 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40028391) UL (E214129)
Alt.	RENESAS	PS2561DL1-1, PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1	Min. Ext. cr ≥ 7,1 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008862) UL (E72422)
Alt.	Interchangeable	Interchangeable	Min. Ext. cr ≥ 6,4 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	UL / EU certification mark
Line Choke (L901) (Optional)	LFDJ	373G0174557J	105°C	IEC/EN 62368-1	Tested With appliance
Alt.	HA	373G0174557H	105°C	IEC/EN 62368-1	Tested With appliance
Transformer (T901)	PHOENIX	380GL32P830P	Class B	IEC/EN 62368-1	Tested With appliance
Alt.	LF	380GL32P830J	Class B	IEC/EN 62368-1	Tested With appliance
Alt.	HA	380GL32P830H	Class B	IEC/EN 62368-1	Tested With appliance
- Bobbin	SUMITOMO Bakelite Co Ltd	PM-9750, PM-9823,	V-0, 150 °C	UL 94	UL (E41429)
- Alt.	CHANG CHUN Plastics Co Ltd	T200HF	V-0, 150 °C	UL 94	UL (E59481)
- Magnet Winding	NINGBO JINTIAN NEW MATERIAL CO LTD	xUEW/130, QA-x/130 (MW75-C)	130°C	ANSI/UL 1446	UL (E227047)
- Alt.	BAIYIN YIZHI CHANGTONG SUPER MICRO-WIRE CO., LTD	xUEW/130 (MW75-C)	130°C	ANSI/UL 1446	UL (E363385)
- Alt.	DONG GUAN YIDA INDUSTRIAL CO LTD	xUEW/155, QA-x/155	155 °C	ANSI/UL 1446	UL (E344055)
- Alt.	SHANDONG SAINT Electric Co Ltd	*UEW/130, QA-*/130, *UEW/130 Litz, QA-*/130 Litz, MW75-C	130 °C	ANSI/UL 1446	UL (E194410)
- Alt.	HENG YA ELECTRIC KUN SHAN LTD	TYPU-130(UEW/QA-B)	130 °C	ANSI/UL 1446	UL (E245514)
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B*	Reinforced insulation, 130°C	EN 62368-1: 2014 + A11:2017 IEC 62368-1: 2014 ANSI/UL 2353	VDE (40033527) UL (E332529)
- Alt.	KBI COSMOLINK CO., LTD.	TIW-M	Reinforced insulation, 130°C	ANSI/UL 2353 IEC 62368-1: 2014	VDE (138053) UL (E213764)

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- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (c)(g)	PET film insulating tape, 130°C	CAN/UL 510A	UL (E165111)
- Tube	GREAT HOLDING Industrial Co Ltd	TFL	PTFE, 200°C, VW-1	UL 224	UL (E156256)
- Alt.	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-L	PTFE, 200°C, VW-1	UL 224	UL (E180908)
Bleeding resistors (R907, R908, R909)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series (The "#" can be L or K represent resistor grade, L=Mohm grade or K=Kohm grade; the "xxx" can be any numeric represent the 3-digit resistor code for resistor value)	Max. 620K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by NEMKO (CB report No. 336992 and CB certificate No. NO99692)
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series (The "#" can be L or K represent resistor grade, L=Mohm grade or K=Kohm grade; the "xxx" can be any numeric represent the 3-digit resistor code for resistor value)	Max. 620K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by NEMKO (CB report No. 337017 and CB certificate No. NO99693)
Alt.	Yageo Corporation	RV1206 series	Max. 620K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by UL (CB report No. E491387-4787887815-1 and CB certificate No. DK-64853-UL)
Alt.	Tzai Yuan Enterprise Co., Ltd.	HSMD1206 series, *SMD1206 * series (The * denote the tolerance, which can be "F", "G" or "J")	Max. 620K ohm, 1/4 W	IEC 62368-1:2010	CB issued by UL (CB report No. OFF-12CA24616-A-1, OFF-12CA24616-A-1 am1 and E354677-12CA24616-A-1. CB certificate No.DK-29431-UL, DK-29431-A1-UL and DK-29431-A1-M1-UL)
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06********* series	Max. 620K ohm, 1/4 W	IEC 62368-1: 2018	CB issued by NEMKO (CB report No. REP014996 and CB certificate No. NO127738)
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06********* series	Max. 620K ohm, 1/4 W	IEC 62368-1: 2018	CB issued by NEMKO (CB report No. REP014995 and CB certificate No. NO127737)
Alt.	Interchangeable	Interchangeable	Max. 620K ohm, 1/4 W	IEC/EN 62368-1	CB report & certification issued by NCB

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Appendix W (Modelo/Model: 22B30HM2, 22B35HM2, **22********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:*
DC Input: 19 V d.c., 1,31 A; Class III; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 62368-1:2018, CISPR 32:2015+AMD1:2019, CISPR 35:2016, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A2:2021, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014+AMD1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
External power supply	TPV Electronics (Fujian) Co., Ltd.	ADPC1925EX	Input: 100-240 VAC, 50 - 60 Hz, 1,3 A, Class II; Output: 19,0 VDC, 1,31 A, Tma= 40°C, PS2, Altitude: 5000m	IEC 62368-1:2014; EN 62368-1:2014 +A11:2017	(CB certificate No. NO106527; CB report No. 373441)
External power supply	Ten Pao Industrial Co., Ltd.	S025ANP1900131	Input: 100-240 VAC, 50 - 60 Hz, 0,6 A, Class II; Output: 19,0 VDC, 1,31 A, 25,0 W, Tma = 40°C, PS2, Altitude:5000m	IEC 62368-1:2018	(CB certificate No. JPTUV-149645; CB report No. CN23WCFE 001)
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5 mm, 130 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E88637)

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Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	HB or Better, Min. thickness: 0,75 mm, 60 °C	ANSI/UL 94	UL (E207780)
Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##)	HB or Better, Min. thickness: 1,0 mm, 50°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(ll)	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPSCM(ee), HIPSHG(ee)	HB or Better, Min. thickness: 1,3 mm, 50°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35)(a), UR-3006+(R90)(a), UR-3006+(RXX)(a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	AFE5000N, AFE5100N, 9004BKGA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG (+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50°C	ANSI/UL 94	UL (E115797)

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Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABSPCR35/ 65/85	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E345434)
Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(####) (Y), YOUHO13(##) (YY)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E471190)
Alt.	RUNYE(CHONGQIN G) NEW MATERIALS CO., LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	RUNYE(CHONGQIN G) NEW MATERIALS CO., LTD	Ecorex® RN - + (R #)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H (#)	HB or Better, Min. thickness: 0,45 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60°C	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125°C	ANSI/UL 94	UL (E238753)
Alt.	Interchangeable	Interchangeable	HB or Better, Min. thickness: 0,45 mm, 50°C	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	Min. V-1, 105 °C	UL 796	UL
LCD Panel	LG Display	LM215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank	21,5” with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	AUO	M215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank))	21,5” with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	BOE	MV215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	TPV VISION INNOVATOR	TPM215********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	21,5” with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	L&T	BM215********** (* can be 0~9, A~Z, “.”, “- “, sign absence or blank)	21,5inch (54.6cm) TFT LCD with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	CHIMEI INNOLUX	M215********** (* can be 0~9, A~Z, “.”, “-“, sign absence or blank)	21,5inch (54.6cm) TFT LCD with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	CPT	CLAA215********** (* can be 0~9, A~Z, “.”, “- “, sign absence or blank)	21,5inch (54.6cm) TFT LCD with LED backlight	IEC/EN 62368-1	Tested With appliance
Alt.	L&T	LM215********** (* can be 0~9, A~Z, “.”, “- “, sign absence or blank)	21,5inch (54.6cm) TFT LCD with LED backlight	IEC/EN 62368-1	Tested With appliance

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Appendix X (Modelo/Model: 27B30H, 27B35H, **27********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:*
DC Input: 19 V d.c., 1,31 or 2,0 A; Class III; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 62368-1:2018, CISPR 32:2015+AMD1:2019, CISPR 35:2016, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A2:2021, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014+AMD1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
External power supply	TPV Electronics (Fujian) Co., Ltd.	ADPC1925EX	Input: 100-240 VAC, 50 - 60 Hz, 1,3 A, Class II; Output: 19,0 VDC, 1,31 A, Tma= 40°C, PS2, Altitude: 5000m	IEC 62368-1:2014; EN 62368-1:2014 +A11:2017	Nemko (CB certificate No. NO106527; CB report No. 373441)
External power supply	TPV Electronics (Fujian) Co., Ltd.	ADPC1938EX	Input: 100-240 VAC, 50 - 60 Hz,1,3 A, Class II; Output: 19,0 VDC, 2,0 A, Tma =40°C, PS2, Altitude: 5000m	IEC 62368-1:2014; EN 62368-1:2014 +A11:2017	Nemko (CB certificate No. NO106527; CB report No. 373441)
External power supply	Ten Pao Industrial Co., Ltd.	S025ANP1900131	Input: 100-240 VAC, 50 - 60 Hz, 0,6 A, Class II; Output: 19,0 VDC, 1,31 A, 25,0W, Tma = 40°C, PS2, Altitude:5000m	IEC 62368-1:2018	TÜVRheinland (CB certificate No. JPTUV-149645; CB report No. CN23WCFE 001)
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50°C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80°C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105°C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, 60°C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6 mm, 50°C	ANSI/UL 94	UL (E67171)

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Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5 mm, 130°C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E88637)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50°C	ANSI/UL 94	UL (E314268)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	HB or Better, Min. thickness: 0,75 mm, 60°C	ANSI/UL 94	UL (E207780)
Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##)	HB or Better, Min. thickness: 1,0 mm, 50°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(ll)	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPSCM (ee), HIPSHG (ee)	HB or Better, Min. thickness: 1,3 mm, 50°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	AR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60°C	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35) (a), UR-3006+(R90) (a), UR-3006+(RXX)(a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG (+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E115797)

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Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60°C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50°C	ANSI/UL 94	UL (E115797)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E330547)
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABSPCR35/ 65/85	HB or Better, Min. thickness: 1,6 mm, 60°C	ANSI/UL 94	UL (E345434)
Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO (####) (Y), YOUHO13(##) (YY)	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E471190)
Alt.	RUNYE (CHONG QING) NEW MATERIALS CO., LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	RUNYE (CHONG QING) NEW MATERIALS CO., LTD	Ecorex® RN - + (R #)	HB or Better, Min. thickness: 0,8 mm, 60°C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H (#)	HB or Better, Min. thickness: 0,45 mm, 80°C	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60°C	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125°C	ANSI/UL 94	UL (E238753)
Alt.	Interchangeable	Interchangeable	HB or Better, Min. thickness: 0,45 mm, 50°C	ANSI/UL 94	UL
PCB	Interchangeable	Interchangeable	Min. V-1, 105°C	UL 796	UL
LCD Panel	L&T	LM270********** * (* can be A to Z, a to z, 0 to 9, '+', '-', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	M270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	P270**********(* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	LM270********** * (* can be A to Z, a to z, 0 to 9, '+', '-', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance

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Alt.	INNOLUX	M270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	TPV	TPM270********** *** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	TPV	TPT270********** ** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	BOE	MV270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	BOE	ME270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	SHARP	LQ270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	SAMSUNG	LTM270********** *** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	LGD	LM270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	Panda	LM270********** * (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' , sign absence or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance

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Appendix Y (Modelo/Model: 27G4, 27G4/P, **27G4*****)**
CARACTERÍSTICAS NOMINAIS / *RATINGS:*
AC Input: 100V-240v~, 50Hz/60Hz, 1.5A; Class I; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (ed.2), am1, am2, CISPR 32:2015+AMD1:2019, CISPR 35:2016, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A2:2021, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014+AMD1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	V-0, Min. thickness: 1,6 mm, 60 oC	ANSI/UL 94	UL (E328304)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	HB or Better, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E207780)
Alt.	CHI MEI CORPORATION	PA-757(+), PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350, HF380	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP-1000(Z), GP-1000L	HB or Better thickness: 1,5mm, 130 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better thickness: 1,6mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568, XG568(#)	HB or Better thickness: 1,6mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569C, XG569(#)	HB or Better thickness: 1,5mm, 50 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better thickness: 1,0mm, 60 °C	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GN-1002F(m)	HB or Better thickness: 1,5mm, 80 °C	ANSI/UL 94	UL (E67171)
Alt.	LOTTE CHEMICAL CORPORATION	SD-0150(+), BF-0677(+), BF-0675(+), GC-0700(+++), LX-0951(+), LX-0957(+), HG-0760(+), SD-0150T, ABF-0200E, NH-1027HF, NH-1027(+)	HB or Better, Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670F, BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 50 °C	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	GC-1036, LS-1159SF, LS-1159F, NH-1036, GC-1036, ABF-1030NH, NH-1017SG(+)	V-0 or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E115797)

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Alt.	GRAND PACIFIC PETR°C HEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E88637)
Alt.	KINGFA SCI & TECH CO LTD	5197	HB or Better Min. thickness: 1,6 mm, 50 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011 C, GAR-011(L65), GAR-011(L85), GAR-011(HG6), CK-100, CK-55111, HP-126	HB or Better Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	CK-61506 RS-900, RS-300, RS-400, RS-(hh)0	HB or Better Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	JH960 6(M), JH960 6(M) (ccc) (##), JH960-6(M) (ccc) (##), JH960 62(M4), JH960 62(M4) (ccc) (##), JH960-62(M4) (ccc) (##)	5VB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E171666)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E230779)
Alt.	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106	V-0, Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E103670)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441, 260-XX	HB or Better, Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E314268)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA1(e), GA35, NC30, GA65, GA85, GC(t) (t) – Replace the one, two, three or four numbers and/or letters to denote to serial number	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E359575)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E310240)
Alt.	UNIC	UR-200+ (+: A to Z), UR-3006+(R35), UR-3006+(R90), UR-3006+(RXX) UP-700+	HB or Better Min. thickness: 1,5 mm, 50 °C	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E205938)
Alt.	CHI LIN TECHNOLOGY CO LTD	GA-1535 GA-1(aaa)	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E177071)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better Min. thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E234833)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(xx)G-A, ABS2030A, ABS20(xx)B	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E330547)

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Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR35/65/85	HB or Better Min. thickness: 1,6 mm, 60 °C	ANSI/UL 94	UL (E345434)
Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(1302)(B), YOUHO(1303)(B), YOUHO(1304)(B), YOUHO(1333)(B), YOUHO(#####)(Y),YOUHO(1303)(OP), YOUHO13(##)(YY) YOUHO1312B	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E471190)
Alt.	Chongqing Gengye New Materials Technology Co Ltd	GU-022	HB or Better Min. thickness: 1,5 mm, 60 °C	ANSI/UL 94	UL (E514505)
Internal metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 0,5 mm	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Base stand (optional)	LOTTE CHEMICAL CORPORATION	SD-0150(+)	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL (E115797)
Alt.	Interchangeable	Interchangeable	HB or Better thickness: 1,4 mm, 60 °C	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	V-1 or better, Min. 105 °C	UL 796	UL
Insulation Sheet (between power board and LCD panel, between power board and metal cover)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	Polycarbonate, min. thickness: 0,4 mm, V-0, 110 °C	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	Polycarbonate, min. thickness: 0,4 mm, V-0, 130 oC	ANSI/UL 94	UL (E199019)
Alt.	Sichuan Longhua Film Co Ltd	PC-770 series PC-770, PC-770 A, PC-870 A PC-770-60B, PC-770-60B-A, PC-770-63B, PC-770-63B-A, PC-770-65B, PC-770-65B-A, PC-770-83, PC-770-83B, PC-770-83F, PC-770F, PC-770F-A	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E254551)
Alt.	KunShan Dobesty Optoelectronic Materials Co Ltd	PC9821B, PC9832B, PC9842B, DB98HD, DB98, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E339070)
Alt.	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	Polycarbonate, min. thickness: 0,4mm, V-0, 80 °C	ANSI/UL 94	UL (E249605)

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Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX FRPC-1880 series	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-1860B, KLX FRPC-83	Polycarbonate, thickness: 0,40 mm, V-0, 80 °C	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX FRPC-1890 series	Polycarbonate, thickness: 0,4 mm min. V-0, 115 °C	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN Plastics Co Ltd	KLX PP BK-10-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 110 °C	ANSI/UL 94	UL (E315185)
Alt.	JINGMEN GORUN TECHNOLOGY CO LTD	HF70, HE70(x)(#)	Polycarbonate, thickness: 0,40 mm min. V-0, 80 °C	ANSI/UL 94	UL (E305163)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F TS-FR383H, TS-FR360H	Polycarbonate, thickness: 0,40 mm min. V-0, 80 °C	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR1370	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	Polycarbonate, thickness: 0,4 mm min. V-0, 125 °C	ANSI/UL 94	UL (E357515)
Alt.	NANTONG HUAPU PHOTOELECTRIC MATERIAL CO., LTD	HPC-EFR87X	Polycarbonate, thickness: 0,4 mm min. V-0, 80 °C	ANSI/UL 94	UL (E508063)
Alt.	JIANGSU JIUTONG PHOTOELECTRIC MATERIAL CO., LTD	JTZ42B	Polycarbonate, thickness: 0,4 mm min. V-0, 80 °C	ANSI/UL 94	UL (E509998)
LCD Panel	TPV	TPM270********** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.', sign absence or blank)	27" with LED backlight	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Adhesive for mylar sheet between power board and metal enclosure	SYMBIO	DS50-A, DS50L	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	3M	55235, 55236, 9448A, 55230, 9495MP	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10, LA9120	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	NITTO DENKO CORP	GA835	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	TESA SE	68646	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	RIALS CORP	G4000	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance

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Alt.	FUJIAN YOUYI ADHESIVE TAPE GROUP CO., LTD	YS310	100°C, 0,05mm Thickness	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
For power board model No. 715G7610:	--	--	--	--	--
AC-Inlet (CN9901)	Solteam	ST-01 (For ENEC) ST-01A ST-01C (For VDE) ST-01 Series (For UL)	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	ENEC (ENEC16/FI/20/10036) VDE (40015691) UL (E200241)
Alt.	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1 (For VDE), SA-4S 7, SA-4S 9 (For TUV), SA-4S 6, SA-4S 12 (For UL)	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40003610) TUV (R 50293856) UL (E154342)
Alt.	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40028101) UL (E102641)
Alt.	Kunshan DLK Electronics Technology Co., Ltd (For VDE) SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD (For UL)	CDJ-3	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40010513) UL (E217394)
Alt.	Kunshan DLK Electronics Technology Co., Ltd (For VDE) SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD (For UL)	CDJ-3-1	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40015913) UL (E217394)
Alt.	INALWAYS ELECTRONICS INC	0707-1, 0711-2, 0714	10A, 250Vac	UL 60320-1	UL (E94191)
Alt.	TECX-UNIONS TECHNOLOGY CORP	TU-301 series	10A, 250Vac	UL 60320-1	UL (E220004)
Alt.	Yueqing Hongchang Radio Co., Ltd	DB-14 series	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40028645) UL (E327347)
Alt.	Solteam Incorporation	SC04 (For ENEC), SC04-1BWW, SC04-2BTT	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	ENEC (ENEC16/FI/20/10040) UL (E200241)
Alt.	Interchangeable	Interchangeable	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	EU / UL certification mark

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Fuse (F9901)	Cooper Bussmann LLC	SR-5	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Littelfuse Inc.	392	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)
Alt.	Cooper Bussmann LLC	SS-5	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MST	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)
Alt.	Interchangeable	Interchangeable	T5AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Fuse (F901)	Cooper Bussmann LLC	SR-5	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Littelfuse Inc.	392	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)

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Alt.	Cooper Bussmann LLC	SS-5	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MST	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)
Alt.	Interchangeable	Interchangeable	T4AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Y-cap (C9903, C9904) (optional)	TDK CORPORATION	CD	Max. 470pF, 250 Vac, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029780) UL (E37861)
Alt.	TDK CORPORATION	CS	Max. 470pF, 250/ 300 Vac, 125 °C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029781) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KH	Max. 470 pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002796) UL (E37921)
Alt.	Murata Mfg. Co., Ltd.	KX	Max. 470 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AC	Max. 470pF, AC 250/300V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001829) UL (E146544)
Alt.	Walsin Technology Corp.	AH	Max. 470pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001804) UL E146544

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Alt.	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 470pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40036246) UL (E154899)
Alt.	JYA-NAY CO LTD	JY	Max. 470pF, AC 300 / 250 V, 125°C, Y2 type	UL1414	UL (E201384)
Alt.	JYA-NAY CO LTD	JN	Max. 470pF, AC 400 / 250 V, 125°C, Y1 type	UL1414	UL (E201384)
Alt.	Haohua Electronic Co.	CT7	Max. 470pF, AC250/275/300V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40013601) UL (E233106)
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 470pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SE	Max. 470pF, AC 250/300 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (122995) UL (E114280)
Alt.	Success Electronics Co., Ltd.	SB	Max. 470pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 470pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40012143) UL (E249006)
Alt.	Interchangeable	Interchangeable	Max. 470pF, Min. 250Vac, Min. 125 °C, Y1/Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	EU / UL certification mark
Y-cap (C9902) (optional)	TDK CORPORATION	CD	Max. 2200pF, 250 Vac, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029780) UL (E37861)
Alt.	TDK CORPORATION	CS	Max. 2200pF, 250/ 300 Vac, 125 °C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029781) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KH	Max. 2200 pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002796) UL (E37921)
Alt.	Murata Mfg. Co., Ltd.	KX	Max. 2200 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AC	Max. 2200pF, AC 250/300V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001829) UL (E146544)

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Alt.	Walsin Technology Corp.	AH	Max. 2200pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001804) UL E146544
Alt.	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 2200pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40036246) UL (E154899)
Alt.	JYA-NAY CO LTD	JY	Max. 2200pF, AC 300 / 250 V, 125°C, Y2 type	UL1414	UL (E201384)
Alt.	JYA-NAY CO LTD	JN	Max. 2200pF, AC 400 / 250 V, 125°C, Y1 type	UL1414	UL (E201384)
Alt.	Haohua Electronic Co.	CT7	Max. 2200pF, AC250/275/300V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40013601) UL (E233106)
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 2200pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SE	Max. 2200pF, AC 250/300 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (122995) UL (E114280)
Alt.	Success Electronics Co., Ltd.	SB	Max. 2200pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 2200pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40012143) UL (E249006)
Alt.	Interchangeable	Interchangeable	Max. 2200pF, Min. 250Vac, Min. 125 °C, Y1/Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	EU / UL certification mark
X- Cap. (C9901) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0,33 µF, AC 250/275/280 /300/305/310V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40015608) UL (E183780)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,33 µF, AC 275V; Min. 105 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40018238) UL (E211347)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,33 µF, AC 275/305 V; 110 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40025981) UL (E211347)
Alt.	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0,33 µF, 275 / 305 /310 VAC, X2 type, Min. 105 °C	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40000358) UL (E186600)

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Alt.	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0,33 µF, 275/300/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	ENEC (V4413) UL (E97797)
Alt.	LIOW GU ELECTRONICS Industry Co Ltd	GS-L	Max. 0,33 µF, 250/275/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40023391) UL (E186321)
Alt.	TDK (Zhuhai FTZ) Co., Ltd.	B3292	Max. 0,33 µF, 305Vac; 105°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40010694) UL (E97863)
Alt.	NANJING TENGEN RONG GUANG DA ELECTRONICS (GROUP) CO LTD	MKP	Max. 0,33 µF, AC 250 V / 275 / 305 / 310 V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40028680) UL (E200596)
Alt.	SHENZHEN JINGHAO CAPACITOR CO LTD	CBB62B	Max. 0,33 µF, AC 250/280/ 305V, Min. 110°C X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40018690) UL (E252286)
Alt.	Interchangeable	Interchangeable	Max. 0,33 µF, Min. 250Vac Min. 105°C, X1 or X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	UL / EU certification mark
Optocoupler (U902)	Lite-on	LTV-817	Ext. cr ≥7,0 mm, Dti ≥ 0,4 mm, 105°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40015248) UL (E113898)
Alt.	Sharp	PC123	Ext. cr ≥6,4 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008087) UL (E64380)
Alt.	VISHAY Semiconductor GmbH	TCET1103-3034	Ext. cr ≥ 8,4 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015	VDE (40028080)
Alt.	Everlight Electronics Co., Ltd.	EL817M, EL817	Ext. cr ≥ 7,6 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (132249) UL (E214129)
Alt.	TOSHIBA CORP	TLP781, TLP781F	Ext. cr ≥ 6,5 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40021173) UL (E67349)
Alt.	TOSHIBA CORP	TLP421F, TLP421	Min. Ext. cr ≥ 7,0 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40010944) UL (E67349)
Alt.	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Min. Ext. cr ≥ 8,1 mm, Dti ≥ 0,4 mm, 110°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40028391) UL (E214129)

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Alt.	RENESAS	PS2561DL1-1, PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1	Min. Ext. cr ≥ 7,1 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	VDE (40008862) UL (E72422)
Alt.	Interchangeable	Interchangeable	Min. Ext. cr ≥ 6,4 mm, Dti ≥ 0,4 mm, 100°C	IEC 60747-5-5: 2007 + A1:2013 EN 60747-5-5: 2011+A1:2015 ANSI/UL 1577	UL / EU certification mark
Line Choke (L9902) (Optional)	HA	373G0174563H	105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	LZ	373G0174563Z	105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	ASET	373G0174563X	105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	LFDJ	373G0174563J	105°C	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Transformer (T901)	PHOENIX	380GL32P547P 00	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	PHOENIX	BCK-30-L01004	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	LFDJ	380GL32P547J 00	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
Alt.	LFDJ	PH01016700	Class B	IEC 60950-1: 2005 + Am 1: 2009 + Am 2: 2013	Tested With appliance
- Bobbin	SUMITOMO Bakelite Co Ltd	PM-9820	V-0, 150 °C	UL 94	UL (E41429)
- Magnet Winding	HENG YA ELECTRIC KUN SHAN LTD	TYPU-130(UEW/QA-B)	130 °C	ANSI/UL 1446	UL (E245514)
- Alt.	SHANGHAI ASIA PACIFIC Electric Co Ltd	UEW, UEW-U	130 °C	ANSI/UL 1446	UL (E214423)
- Alt.	SHANDONG SAINT Electric Co Ltd	*UEW/130, QA-*/130, *UEW/130 Litz, QA-*/130 Litz, MW75-C	130 °C	ANSI/UL 1446	UL (E194410)
- Alt.	GUANGZHOU WANBAO ENAMELLED WIRE CO LTD	xUEW-130, QA-x/130	130 °C	ANSI/UL 1446	UL (E167402)
- Triple insulation wire	KBI COSMOLINK CO., LTD.	TIW-M	Reinforced insulation, 130°C	ANSI/UL 2353 IEC 62368-1: 2014	VDE (138053) UL (E213764)
- Alt.	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B	Reinforced insulation, 130°C	ANSI/UL 2353 IEC 62368-1: 2018 EN IEC 62368-1:2020+A11:2020 EN IEC 62368-1:2020	VDE (40033527) UL (E332529)
- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (c)(g), PF*(d)(g)	PET film insulating tape, 130°C	CAN/UL 510A	UL (E165111)
- Tube	GREAT HOLDING Industrial Co Ltd	TFL	PTFE, 200°C, VW-1	UL 224	UL (E156256)

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Bleeding resistors (R9901, R9902, R9903)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series (The "#" can be L or K represent resistor grade, L=Mohm grade or K=Kohm grade; the "xxx" can be any numeric represent the 3-digit resistor code for resistor value)	Max. 750K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by NEMKO (CB report No. 336992 and CB certificate No. NO99692)
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series (The "#" can be L or K represent resistor grade, L=Mohm grade or K=Kohm grade; the "xxx" can be any numeric represent the 3-digit resistor code for resistor value)	Max. 750K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by NEMKO (CB report No. 386200 and CB certificate No. NO99693)
Alt.	Yageo Corporation	RV1206 series	Max. 750K ohm, 1/4 W	IEC/EN 62368-1:2014 (Second Edition)	CB issued by UL (CB report No. E491387-4787887815-1 and CB certificate No. DK-64853-UL)
Alt.	Charter Resistors (Yiyang) Company Ltd.	1210J, 1210F, 2512J, 2512F	Max. 750K ohm, 1/4 W	IEC 62368-1:2014	CB issued by UL (CB report No. ESTS-P19122518 and CB certificate No. DK-93814-UL)
Alt.	Tzai Yuan Enterprise Co., Ltd.	HSMD0805*****, HSMD1206*****, HSMD1210*****, HSMD2010***** and HSMD2512***** series SMD0805*****, SMD1206*****, SMD1210*****, SMD2010***** and SMD2512***** series	Max. 750K ohm, 1/4 W	IEC 62368-1:2018	CB issued by UL (CB report No. OFF-12CA24616-A-1, OFF-12CA24616-A-1 am1 and E354677-12CA24616-A-1. CB certificate No. DK-29431-UL, DK-29431-A1-UL and DK-29431-A1-M1-UL)
Alt.	Interchangeable	Interchangeable	Max. 750K ohm, 1/4 W	IEC/EN 62368-1	CB report & certification issued by NCB

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Appendix Z (Modelo/Model: 24G4, 24G4/P, **24G4******)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:*
AC Input: 100V-240v~, 50Hz/60Hz, 1.5A; Class I; IPX0

Normas aplicáveis / *Applicable standards:*
IEC 60950-1: 2005 (ed.2), am1, am2, CISPR 32:2015+AMD1:2019, CISPR 35:2016, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A2:2021, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014+AMD1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2020

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
Plastic material of enclosure	Orinko Advanced Plastics Co., Ltd	ABS-3070H, HIPS-2000	HB or Better, Min. thickness: 1,6 mm, 50 ºC	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS-340X(X=0-10)	HB or Better, Min. thickness: 1,6 mm, 60 ºC	ANSI/UL 94	UL (E328304)
Alt.	Orinko Advanced Plastics Co., Ltd	ABS900F23	V-0, Min. thickness: 1,6 mm, 60 ºC	ANSI/UL 94	UL (E328304)
Alt.	CHI MEI CORPORATION	PA-757(+)	HB or Better, Min. thickness: 1,5 mm, 80 ºC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-345(+), PA-756S, PA-756(+)	HB or Better, Min. thickness: 1,0 mm, Min. 60 ºC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-110(+)	HB or Better, Min. thickness: 1,5 mm, 105 ºC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540H	HB or Better, Min. thickness: 0,8 mm, 60 ºC	ANSI/UL 94	UL (E56070)
Alt.	CHI MEI CORPORATION	PC-540(Y)(a)	HB or Better, Min. thickness: 0,75 mm, Min. 60 ºC	ANSI/UL 94	UL (E56070)
Alt.	LG CHEM LTD	HF350	HB or Better, Min. thickness: 1,4 mm, 60 ºC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	HF380	HB or Better, Min. thickness: 0,8 mm, 60 ºC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	SE750(#)	HB or Better, Min. thickness: 1,6mm, 60 ºC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG568(#), SE885(#)	HB or Better, Min. thickness: 1,6mm, 50 ºC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	XG569(#)	HB or Better, Min. thickness: 1,5 mm, 50 ºC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	GP1000(Z), GP1000	HB or Better, Min. thickness: 1,5mm, 130 ºC	ANSI/UL 94	UL (E67171)
Alt.	LG CHEM LTD	AF365(&)	HB or Better, Min. thickness: 1,0mm, Min. 60 ºC	ANSI/UL 94	UL (E67171)
Alt.	GRAND PACIFIC PETROCHEMICAL CORP	D-150	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E88637)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	3441	HB or Better, Min. thickness: 1,5 mm, 50 ºC	ANSI/UL 94	UL (E314268)
Alt.	INEOS Styrolution Polymers (Foshan) Company Limited	260-XX	HB or Better, Min. thickness: 1,4 mm, 50 ºC	ANSI/UL 94	UL (E314268)
Alt.	HUIZHOU WOTE ADVANCED Materials Co Ltd	2100	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E310240)
Alt.	SABIC JAPAN L L C	C6600(GG)(X)(VS)	V-2 or Better, Min. thickness: 0,75 mm, 60 ºC	ANSI/UL 94	UL (E207780)

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Alt.	KINGFA SCI & TECH CO LTD	CK-61(M) (##),	HB or Better, Min. thickness: 1,0 mm, 50 ºC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011(II)	HB or Better, Min. thickness: 1,0 mm, 60 ºC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	4418, 5197, HIPS-4418, HIPS-5197, HIPS-3399, HIPS-CM(ee), HIPS-HG(ee)	HB or Better, Min. thickness: 1,3 mm, 50 ºC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	GAR-011C, CK-100	HB or Better, Min. thickness: 1,6 mm, 60 ºC	ANSI/UL 94	UL (E171666)
Alt.	KINGFA SCI & TECH CO LTD	HP-126, ABS-660, ABS-122, GAR-332, H12, G360, GAR-322, GAR-220, GAR-011, CK-55(M) (##), CK-58(M) (##), GAR-011C, GAR-011(ww)	HB or Better, Min. thickness: 1,2 mm, 60 ºC	ANSI/UL 94	UL (E171666)
Alt.	UNIC TECHNOLOGY CORP.	UR-3006+(R35) (a), UR-3006+(R90) (a), UR-3006+(RXX) (a), UP-700+, UR-7085+(R90)	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E135175)
Alt.	UNIC TECHNOLOGY CORP.	UR-200+	HB or Better, Min. thickness: 1,5 mm, 50 ºC	ANSI/UL 94	UL (E135175)
Alt.	PONTEX POLYBLEND CO LTD	AFE5000N, AFE5100N, 9004BK	HB or Better, Min. thickness: 1,0 mm, 60 ºC	ANSI/UL 94	UL (E205938)
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA65, GA85, GA35, GC(t), GA1(e), GA(M)(b)(c), AO(t)	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E359575)
Alt.	SHENZHEN FUHENG NEW Material Co Ltd	HIPS-568	HB or Better, Min. thickness: 1,5 mm, 50 ºC	ANSI/UL 94	UL (E234833)
Alt.	LOTTE CHEMICAL CORPORATION	ABF-0200E, SD-0150	HB or Better, Min. thickness: 1,0 mm, 60 ºC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	NH-1017SG(+), NH-1017(p)	HB or Better, Min. thickness: 0,8 mm, 60 ºC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0670(+)	HB or Better, Min. thickness: 0,8 mm, 50 ºC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0677(+), GC-0700(+++), LX-0951(+)	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	BF-0675(+)	HB or Better, Min. thickness: 1,5 mm, 50 ºC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	HG-0760(+)	HB or Better, Min. thickness: 1,2 mm, 60 ºC	ANSI/UL 94	UL (E115797)
Alt.	LOTTE CHEMICAL CORPORATION	LX-0957(+)	HB or Better, Min. thickness: 1,2 mm, 50 ºC	ANSI/UL 94	UL (E115797)
Alt.	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-HG, HRABS-RS	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E230779)
Alt.	QING DAO GON TECHNOLOGY CO., LTD.	ABS21(B)G-A	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E330547)

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Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR35/65/85	HB or Better, Min. thickness: 1,6 mm, 60 ºC	ANSI/UL 94	UL (E345434)
Alt.	GUO HENG (DONGGUAN) PLASTIC TECHNOLOGY CO LTD	YOUHO(####)(Y), YOUHO13(##)(YY)	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E471190)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO.,LTD	GU-022	HB or Better, Min. thickness: 1,5 mm, 60 ºC	ANSI/UL 94	UL (E514505)
Alt.	RUNYE(CHONGQING) NEW MATERIALS CO., LTD	Ecorex® RN - +(R #)	HB or Better, Min. thickness: 0,8 mm, 60 ºC	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	MN-3600H(#)	HB or Better, Min. thickness: 0,45 mm, 80 ºC	ANSI/UL 94	UL (E514505)
Alt.	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c)	HB or Better, Min. thickness: 0,45 mm, 60 ºC	ANSI/UL 94	UL (E98529)
Alt.	Formosa Idemitsu Petrochemical Corp	#1900+(f2)	HB or Better, Min. thickness: 1,5 mm, 125 ºC	ANSI/UL 94	UL (E238753)
Internal metal enclosure	Interchangeable	Interchangeable	Metal, Min. thickness: 0,5 mm	IEC 60950-1	Tested with appliance
Base stand (optional)	LOTTE CHEMICAL CORPORATION	SD-0150	HB or Better, thickness: 1,0 mm, 60 ºC	ANSI/UL 94	UL (E115797)
Alt.	Interchangeable	Interchangeable	HB or Better, thickness: 1,0 mm, 60 ºC	ANSI/UL 94	UL
PWB	Interchangeable	Interchangeable	V-1 or better, Min. 105 ºC	UL 796	UL
Mylar Sheet	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	Polycarbonate, min. thickness: 0,4mm, V-0, 80 ºC	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	Polycarbonate, min. thickness: 0,4 mm, V-0, 110 ºC	ANSI/UL 94	UL (E199019)
Alt.	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	Polycarbonate, min. thickness: 0,4 mm, V-0, 130 ºC	ANSI/UL 94	UL (E199019)
Alt.	Sichuan Longhua Film Co Ltd	PC-770, PC-770 A, PC-870 A, PC-770-60B, PC-770-60B-A, PC-770-63B, PC-770-63B-A, PC-770-65B, PC-770-65B-A, PC-770-83, PC-770-83B, PC-770-83F, PC-770F, PC-770F-A	Polycarbonate, min. thickness: 0,4mm, V-0, 80 ºC	ANSI/UL 94	UL (E254551)

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Alt.	KunShan Dobesty Optoelectronic Materials Co Ltd	PC9821B, PC9832B, PC9842B, DB98HD, DB98	Polycarbonate, min. thickness: 0,4mm, V-0, 80 ºC	ANSI/UL 94	UL (E339070)
Alt.	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	Polycarbonate, min. thickness: 0,4mm, V-0, 80 ºC	ANSI/UL 94	UL (E249605)
Alt.	JINGMEN GORUN TECHNOLOGY CO LTD	HF70, HE70(x)(#)	Polycarbonate, thickness: 0,40 mm min. V-0, 80 ºC	ANSI/UL 94	UL (E305163)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F TS-FR383H, TS-FR360H	Polycarbonate, thickness: 0,40 mm min. V-0, 80 ºC	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR1365, TS-FR1363, TS-FR1360, TS-FR1362, TS-FR160Y, TS-FR1370F, TS-FR1370, TS-FR1383, TS-FR1370-32, TS-FR1383-13	Polycarbonate, thickness: 0,40 mm min. V-0, 125 ºC	ANSI/UL 94	UL (E329660)
Alt.	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	Polycarbonate, thickness: 0,4 mm min. V-0, 125 ºC	ANSI/UL 94	UL (E357515)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-870BF, KLX FRPC-870BH, KLX FRPC-870BFH, KLX FRPC-83B, KLX FRPC-83, KLX FRPC-F70, KLX FRPC-700B, KLX FRPC-700BF, KLX FRPC-60, KLX FRPC-60H, KLX FRPC-63, KLX FRPC-63H, KLX FRPC-65, KLX FRPC-65H, KLX FRPC-1870B	Polycarbonate, thickness: 0,4 mm min. V-0, 80 ºC	ANSI/UL 94	UL (E315185)

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Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1860, KLX FRPC-1860B, KLX FRPC-1860-83, KLX FRPC-1860-83B, KLX FRPC-1860-1, KLX FRPC-1860-NTC, KLX FRPC-1860B-NTC, KLX FRPC-1860B-3, KLX FRPC-1870B-K, KLX FRPC-1860B-HY, KLX FRPC-1860-HY, KLX FRPC-1860B-K, KLX FRPC-1860-K, KLX FRPC-1860W	Polycarbonate, thickness: 0,4 mm min. V-0, 80 ºC	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1880, KLX FRPC-1880B, KLX FRPC-1880-83, KLX FRPC-1880-83B, KLX FRPC-1880-1, KLX FRPC-1880B-1, KLX FRPC-1880-2, KLX FRPC-1880B-2, KLX FRPC-1880-3, KLX FRPC-1880B-3, KLX FRPC-1880-NTC, KLX FRPC-1880B-NTC, KLX FRPC-1880B-HY, KLX FRPC-1880-HY, KLX FRPC-1880B-K, KLX FRPC-1880-K, KLX FRPC-1860-YM, KLX FRPC-1860B-YM, KLX FRPC-1880-YM, KLX FRPC-1880B-YM, KLX FRPC-1880W, KLX FRPC-1880W-1, KLX FRPC-1860B-KS, KLX FRPC-1860-KS, KLX FRPC-1880-KS, KLX FRPC-1880B-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 125 ºC	ANSI/UL 94	UL (E315185)
Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP BK-10-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 110 ºC	ANSI/UL 94	UL (E315185)

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Alt.	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1890B,KLX FRPC-1890, KLX FRPC-1890-83, KLX FRPC-1890-83B, KLX FRPC-1890-1, KLX FRPC-1890B-1, KLX FRPC-1890-2, KLX FRPC-1890B-2,KLX FRPC-1890B-2, KLX FRPC-1890-3, KLX FRPC-1890B-3, KLX FRPC-1890-NTC, KLX FRPC-1890B-NTC, KLX FRPC-1890B-HY, KLX FRPC-1890-HY, KLX FRPC-1890B-K, KLX FRPC-1890-K, KLX FRPC-1890-YM, KLX FRPC-1890B-YM KLX FRPC-1890W, KLX FRPC-1890W-1, KLX FRPC-1890B-KS, KLX FRPC-1890-KS	Polycarbonate, thickness: 0,4 mm min. V-0, 115 ºC	ANSI/UL 94	UL (E315185)
Alt.	NANTONG HUAPU PHOTOELECTRIC MATERIAL CO., LTD	HPC-EFR87X	Polycarbonate, thickness: 0,4 mm min. V-0, 80 ºC	ANSI/UL 94	UL (E508063)
LCD Panel	TPV	TPM238********** *** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	23,8” with LED backlight	IEC 60950-1	Tested with appliance
Adhesive for mylar insulation sheet between power board and metal enclosure	SYMBIO	DS50-A, DS50L	100°C, 0,05mm Thickness	IEC 60950-1	Tested with appliance
Alt.	3M	55235, 55236, 9448A, 55230, 9495MP	100°C, 0,05mm Thickness	IEC 60950-1	Tested with appliance
Alt.	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10, LA9120	100°C, 0,05mm Thickness	IEC 60950-1	Tested with appliance
Alt.	NITTO DENKO CORP	GA835	100°C, 0,05mm Thickness	IEC 60950-1	Tested with appliance
Alt.	TESA SE	68646	100°C, 0,05mm Thickness	IEC 60950-1	Tested with appliance
Alt.	RIALS CORP	G4000	100°C, 0,05mm Thickness	IEC 60950-1	Tested with appliance
Alt.	FUJIAN YOUYI ADHESIVE TAPE GROUP CO., LTD	YS310	100°C, 0,05mm Thickness	IEC 60950-1	Tested with appliance
Switching mode power supply board: 715GD461					

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AC-Inlet	Solteam	ST-01 (For ENEC) ST-01A ST-01C (For VDE) ST-01 Series (For UL)	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	ENEC (ENEC16/FI/20/10036) VDE (40015691) UL (E200241)
Alt.	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1 (For VDE), SA-4S 7, SA-4S 9 (For TUV), SA-4S 6, SA-4S 12 (For UL)	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40003610) TUV (R 50293856) UL (E154342)
Alt.	Rong Feng Industrial Co., Ltd.	SS-120, SS-7B	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40028101) UL (E102641)
Alt.	Kunshan DLK Electronics Technology Co., Ltd (For VDE) SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD (For UL)	CDJ-3	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40010513) UL (E217394)
Alt.	Kunshan DLK Electronics Technology Co., Ltd (For VDE) SHENZHEN DELIKANG ELECTRONICS TECHNOLOGY CO LTD (For UL)	CDJ-3-1	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40015913) UL (E217394)
Alt.	INALWAYS ELECTRONICS INC	0707-1, 0711-2, 0714	10A, 250Vac	UL 60320-1	UL (E94191)
Alt.	TECX-UNIONS TECHNOLOGY CORP	TU-301 series	10A, 250Vac	UL 60320-1	UL (E220004)
Alt.	Yueqing Hongchang Radio Co., Ltd	DB-14 series	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	VDE (40028645) UL (E327347)

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Alt.	Solteam Incorporation	SC04 (For ENEC), SC04-1BWW, SC04-2BTT	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	ENEC (ENEC16/FI/20/10040) UL (E200241)
Alt.	Interchangeable	Interchangeable	10A, 250Vac	IEC 60320-1: 2015 EN 60320-1: 2015 + AC: 2016 UL 60320-1	EU / UL certification mark
Fuse (F901)	Littelfuse Inc.	392	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (126983) UL (E67006)
Alt.	Littelfuse Inc.	382	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018249) UL (E67006)
Alt.	Cooper Bussmann LLC	SR-5	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (122052) UL (E19180)
Alt.	Cooper Bussmann LLC	SS-5	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40015513) UL (E19180)
Alt.	Conquer Electronics Co., Ltd.	MST	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40017118) UL (E82636)

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Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018781) UL (E56092)
Alt.	Suzhou Walter Electronic Co. Ltd.	2000	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40018790) UL (E56092)
Alt.	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	VDE (40033369) UL (E300003)
Alt.	Interchangeable	Interchangeable	T3,15AL, 250Vac	IEC/EN 60127-1: 2006 + A1: 2011 + A2: 2015 IEC/EN 60127-3: 2015 UL 248-1 UL 248-14	EU / UL certification mark
Y-cap (C902. C903) (optional)	TDK CORPORATION	CD	Max. 680 pF, 250 Vac, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029780) UL (E37861)
Alt.	TDK CORPORATION	CS	Max. 680 pF, 250/ 300 Vac, 125 °C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40029781) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KH	Max. 680 pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002796) UL (E37921)
Alt.	Murata Mfg. Co., Ltd.	KX	Max. 680 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40002831) UL (E37921)

Alt.	Walsin Technology Corp.	AC	Max. 680 pF, AC 250/300V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001829) UL (E146544)
Alt.	Walsin Technology Corp.	AH	Max. 680 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40001804) UL (E146544)
Alt.	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 680 pF, AC 300 / 250 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40036246) UL (E154899)
Alt.	JYA-NAY CO LTD	JY	Max. 680 pF, AC 300 / 250 V, 125°C, Y2 type	UL1414	UL (E201384)
Alt.	JYA-NAY CO LTD	JN	Max. 680 pF, AC 400 / 250 V, 125°C, Y1 type	UL1414	UL (E201384)
Alt.	Haohua Electronic Co.	CT7	Max. 680 pF, AC250/275/300V,125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40013601) UL (E233106)
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 680 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SE	Max. 680 pF, AC 250/300 V, 125°C, Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (122995) UL (E114280)
Alt.	Success Electronics Co., Ltd.	SB	Max. 680 pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 680 pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40012143) UL (E249006)
Alt.	Interchangeable	Interchangeable	Max. 680 pF, Min. 250Vac, 125 °C Y1/Y2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	EU / UL certification mark

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Y-cap (C913) (optional)	TDK CORPORATION	CD	Max. 1000 pF, 250/ 400 Vac, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (40029780) UL (E37861)
Alt.	Murata Mfg. Co., Ltd.	KX	Max. 1000 pF, AC 250/300 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (40002831) UL (E37921)
Alt.	Walsin Technology Corp.	AH	Max. 1000 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (40001804) UL E146544
Alt.	JYA-NAY CO LTD	JN	Max. 1000 pF, AC 400 / 250 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	UL (E201384)
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 1000 pF, AC 250/400 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (135256) UL (E145038)
Alt.	Success Electronics Co., Ltd.	SB	Max. 1000 pF, AC 250/500 V, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (40037221) UL (E114280)
Alt.	Kunshan Wansheng Electronics Co., Ltd.	CT7	Max. 1000 pF, AC 500 / 400 / 300 / 250 V, 125 °C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	VDE (40012143) UL (E249006)
Alt.	Interchangeable	Interchangeable	Max. 1000 pF, Min. 250Vac, 125°C, Y1 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013/A1:2016 UL1414	EU / UL certification mark
X-Cap. (C901) (optional)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max. 0,33 µF, AC 250/275/280 /300/305/310V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40015608) UL (E183780)
Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,33 µF, AC 275V; Min. 105 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40018238) UL (E211347)

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Alt.	Europtronic (SuZhou) Co. Ltd.	MPX	Max. 0,33 µF, AC 275/305 V; 110 °C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40025981) UL (E211347)
Alt.	Xiamen Faratronic Co. Ltd.	MKP62	Max. 0,33 µF, 275 / 305 /310 VAC, X2 type, Min. 105 °C	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40000358) UL (E186600)
Alt.	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0,33 µF, 275/300/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	ENEC (V4413) UL (E97797)
Alt.	LIOW GU ELECTRONICS Industry Co Ltd	GS-L	Max. 0,33 µF, 250/275/310 Vac; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40023391) UL (E186321)
Alt.	TDK (Zhuhai FTZ) Co., Ltd.	B3292	Max. 0,33 µF, 305Vac; 105°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40010694) UL (E97863)
Alt.	NANJING TENGEN RONG GUANG DA ELECTRONICS (GROUP) CO LTD	MKP	Max. 0,33 µF, AC 250 V / 275 / 305 / 310 V; 110°C, X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40028680) UL (E200596)
Alt.	SHENZHEN JINGHAO CAPACITOR CO LTD	CBB62B	Max. 0,33 µF, AC 250/280/ 305V, Min. 110°C X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	VDE (40018690) UL (E252286)
Alt.	Interchangeable	Interchangeable	Max. 0,33 µF, Min. 250Vac Min. 105°C, X1 or X2 type	IEC 60384-14: 2013 + A1:2016 EN 60384-14: 2013 + A1:2016 UL1414	UL / EU certification mark
Bleeding resistors (R907, R908, R909; R924, R925, R926)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series	1,3MΩ, 1/4 W	IEC 62368-1: 2014	CB of Nemko NO99693
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	1,3MΩ, 1/4 W	IEC 62368-1: 2014	CB of Nemko NO99692
Alt	YAGEO	RV0603, RV0805, RV1206	1,3MΩ, 1/4 W	IEC 62368-1: 2014	CB of UL Cert. No. DK-64853-UL
Alt	TZAIYUAN	HSMD********* SMD*********	1,3MΩ, 1/4 W	IEC 62368-1: 2010	CB of UL Cert. No. DK-29431-A1-UL

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Alt.	Tzai Yuan Enterprise Co., Ltd.	MGUL1/4Wseries	1,3MΩ, 1/4 W	IEC 62368-1: 2014	CB issued by UL (CB cert No. DK-69874-UL)
Alt.	Interchangeable	Interchangeable	1,3MΩ, 1/4 W	IEC/EN 62368-1	CB report and certificates issued by National certification body
Line Choke (L901) (Optional)	HA	373G0174602H	105 °C	IEC 60950-1	Tested with appliance
Alt.	TC	373G0174602S	105 °C	IEC 60950-1	Tested with appliance
Alt	LFDJ	373G0174602J	105 °C	IEC 60950-1	Tested with appliance
Transformer (T901)	HA	380GL32P618H	See attachment 2 for details, Class B	IEC 60950-1	Tested with appliance
Alt.	HA	BCK-11641-HA	See attachment 2 for details, Class B	IEC 60950-1	Tested with appliance
Alt.	PHOENIX	380GL32P618P	See attachment 2 for details, Class B	IEC 60950-1	Tested with appliance
Alt.	PHOENIX	PH01087700	See attachment 2 for details, Class B	IEC 60950-1	Tested with appliance
Alt.	ASET	380GL32P618X	See attachment 2 for details, Class B	IEC 60950-1	Tested with appliance
Alt.	ASET	31010389	See attachment 2 for details, Class B	IEC 60950-1	Tested with appliance
- Bobbin	SUMITOMO Bakelite Co Ltd	PM-9750	V-0, 150 °C	UL 94	UL (E41429)
- Alt.	CHANG CHUN Plastics Co Ltd	T200HF, T200NA	V-0, 150 °C	UL 94	UL (E59481)
- Winding	Interchangeable	Interchangeable	130 °C	ANSI/UL 1446	UL
- Triple insulation wire	KBI COSMOLINK CO., LTD.	TIW-M(XX) (UL) TIW-M (VDE)	Reinforced insulation, 130°C	ANSI/UL 2353 EN 62368-1:2014/A11:2017	VDE (138053) UL (E213764)
- Alt.	SUZHOU YUSHENG ELECTRONIC CO LTD (UL) Suzhou Yusheng Electronic Co., Ltd. (VDE)	TIW-B* (UL); TIW-B (VDE)	Reinforced insulation, 130°C	ANSI/UL 2353 EN IEC 62368-1:2020+A11:2020	UL (E332529) VDE (40033527)
- Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT* (c)(g)	PET film insulating tape, 130°C	CAN/UL 510A	UL (E165111)
- Tube	GREAT HOLDING Industrial Co Ltd	TFL	PTFE, 200°C, VW-1	UL 224	UL (E156256)

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Appendix AB (Modelo/Model: 24E3UM, 24E3UF, 24E3QF, 24E3********, Q24E3**********)**

CARACTERÍSTICAS NOMINAIS / *RATINGS:*
I/P: 100-240V~, 50/60Hz, 1.5A

Normas aplicáveis / *Applicable standards:*
IEC 62368-1:2018, CISPR 32:2015/AMD1:2019, CISPR 35:2016, EN IEC 61000-3-2:2019/A1:2021, EN 61000-3-3:2013/A2:2021, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014/AMD1:2017, IEC 61000-4-6:2023, IEC 61000-4-8:2009, IEC 61000-4-11:2020/COR2:2022

LISTA DE COMPONENTES CRÍTICOS / LIST OF CRITICAL COMPONENTS:

Componente/Component	Fabricante/ *Manufacturer*	Tipo/Modelo *Type/Model*	Características técnicas/ *Technical data*	Norma/ *Standard*	Marca de conformidade/ *Mark(s) of conformity*
LCD Panel with LED backlight	TPV	TPM238*** (* can be 0-9, A- Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 14.98W; LED Array Voltage: 31.9V	--	Tested in equipment
Alt.)	LG Display	LM238*** (* can be 0-9, A- Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 17.76W; LED Array Voltage: 58.9V	--	Tested in equipment
Alt.)	L&T	LM238*** (* can be 0-9, A- Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.1W; LED Array Voltage: 38.8V	--	Tested in equipment
Alt.)	BOE	MV238***-*** (* can be 0-9, A- Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.04W; LED Array Voltage: 46.4V	--	Tested in equipment
Alt.)	AUO	M238H****.* (* can be 0-9, A- Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 12.17W; LED Array Voltage: 44.86V	--	Tested in equipment
Alt.)	INNOLUX	M238***-*** (* can be 0-9, A- Z or blank for marketing purpose only)	23.8 inch TFT type, with LED back light, power consumption: 14.19W; LED Array Voltage: 32V	--	Tested in equipment
Plastic Enclosure	CHI MEI	PC-540(Y)(a), PA-765A, PA-756S, PA-757(+), PC-110(+), PC-345(+), PA-765A(+), PC-540H	HB or better, min. 1.6mm thickness	UL 94	UL (E56070)
Alt.)	ORINKO	HIPS-2230(N), ABS-3070(T), HIPS-2000, ABS-340(X), ABS900F23, ABS-3070H	HB or better, min. 1.6mm thickness	UL 94	UL (E328304)
Alt.)	LOTTE CHEMICAL CORPORATION	VH-0810(+), VE-1890(+), EN-1052(+), VH-0815(+), VH-0819(+), HM-1100(+), VE-0819F, NH-1017(p), NH-1017SG(+), VE-0812(+), NH-1000T(+)(&), NE-1030(+), LS-1159(r), LS-1159SF, LS-1159F, NH-1036, GC-1017, SD-0150(+), BF-0677(+), BF-0675(+), BF-0670(+), GC-0700(+++), LX-0951(+), LX-0957(+), HG-0760(+), NH-1027HF, NH-1027(+), SD-0150T, GC- 1036(RR35), SC-1220R, ABF-0200E, ABF-1030NH	HB or better, min. 1.6mm thickness	UL 94	UL (E115797)

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Alt.)	Grand	D-150	HB or better, min. 1.6mm thickness	UL 94	UL (E88637)
Alt.)	Covestro Deutschland AG [PC Resins]	GF9011 MF + (z), FR3005 + BBS310, FR3005 HF + BBS910, FR3005 HF +, FR3005 HF + BBS314	HB or better, min. 1.6mm thickness	UL 94	UL (E41613)
Alt.)	TEIJIN	MN-3600H(#)	HB or better, min. 1.6mm thickness	UL 94	UL (E244324)
Alt.)	SAMYANG	TRILOY:210NH F(@), 210NHF	HB or better, min. 1.6mm thickness	UL 94	UL (E121254)
Alt.)	LG CHEM LTD	LUPOY GN- 5001TF(#), LUPOY GN- 5001RF(T), LUPOY GN- 5008HF(#), LUPOY GN-2101F(m)(f1), XG568(#), XG569(#), GP-1000(m)(#), SE885(#), AF365(&), AF368(#), AF358, HF350, SE750(#), GP-1000L, LUPOY GN5001RF(T), AF303S, AF312T, AF312T	HB or better, min. 1.6mm thickness	UL 94	UL (E67171)
Alt.)	KingFa	HF-606, HF-626, FRABS-518, JH960 6(M) (ccc) (##), FRHIPS-960, CK-572(M1) (##), FRABS-518C, 5197, RS-(hh)0, GAR-011C, CK-100, CK-55(M) (##), HP-126, CK-61(M) (##), HIPS-510 (o), HIPS-550, GAR-011(ll), ABS-660, ABS-122, H12, GAR-322, GAR-220, GAR-011, GAR-011(ww)	HB or better, min. 1.6mm thickness	UL 94	UL (E171666)
Alt.)	SABIC	C6600, C6600(GG)(X) (VS), CM4219 (gg*), CY5100 (GG), CY5005 (gg*)	HB or better, min. 1.6mm thickness	UL 94	UL (E207780)
Alt.)	QINGDAO HAIER NEW MATERIAL R & D CO LTD	HRABS-RS, HRABS-HG, HRABS-RS HRABS-HG	HB or better, min. 1.6mm thickness	UL 94	UL (E230779)
Alt.)	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106	HB or better, min. 1.6mm thickness	UL 94	UL (E103670)
Alt.)	INEOS STYROLUTION POLYMERS (FOSHAN) COMPANY LIMITED	3441, 260-XX	HB or better, min. 1.6mm thickness	UL 94	UL (E314268)
Alt.)	WISTRON	GA(M)(b)(c), NC(N)(a), GA85, GA65, GA35, GC(t), GA1(e)	HB or better, min. 1.6mm thickness	UL 94	UL (E359575)
Alt.)	HINGLONG	HL-ABS- PCR35/65/85	HB or better, min. 1.6mm thickness	UL 94	UL (E345434)
Alt.)	WOTE	2100	HB or better, min. 1.6mm thickness	UL 94	UL (E310240)
Alt.)	GUO HENG	YOUHO(#####)(Y), YOUHO13(##)(YY), YOUHE26(##)	HB or better, min. 1.6mm thickness	UL 94	UL (E471190)
Alt.)	UNIC	UR- 3006+(RXX), UR-200+, UR-7085+(R90), UP-700+	HB or better, min. 1.6mm thickness	UL 94	UL (E135175)
Alt.)	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, min. 1.6mm thickness	UL 94	UL (E205938)
Alt.)	CHI LIN	GA-1(aaa)	HB or better, min. 1.6mm thickness	UL 94	UL (E177071)
Alt.)	FUHENG	HIPS-568, FH-101, FH-102	HB or better, min. 1.6mm thickness	UL 94	UL (E234833)
Alt.)	QING DAO GON TECHNOLOGY CO.,LTD.	ABS21(xx)G-A, ABS2030A, ABS20(xx)B	HB or better, min. 1.6mm thickness	UL 94	UL (E330547)
Alt.)	FORMOSA CHEMICALS &	AC2820-A	HB or better, min. 1.6mm thickness	UL 94	UL (E162823)

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	FIBRE CORP PLASTICS DIV				
Alt.)	Chongqing Gengye New Materials Technology Co Ltd	GU-022	HB or better, min. 1.6mm thickness	UL 94	UL (E514505)
Alt.)	FORMOSA IDEMITSU PETROCHEMICAL CORP	#1900+(f2)	HB or better, min. 1.6mm thickness	UL 94	UL (E238753)
Alt.)	LOTTE ADVANCED MATERIALS CO LTD	HN-1074(+), NE-1030(+)	V-0, min. 1.6mm thickness	UL 94	UL (E115797)
Alt.)	LG CHEM LTD	AF312, AF312K, AF312A, AF312AR, LUPOY GN5001RF(T), LUPOY GN- 5001RF(T), LUPOY GN- 5008HF(#)	V-0, min. 1.6mm thickness	UL 94	UL (E67171)
Alt.)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7500(c), MN-3600H(#), MN-3600V(#)	V-0, min. 1.6mm thickness	UL 94	UL (E98529)
Alt.)	GUO HENG(DONGGUAN)PLASTIC TECHNOLOGY CO LTD	YOUHE26(##)	V-0, min. 1.6mm thickness	UL 94	UL (E471190)
Alt.)	SAMYANG	210NHF(@)	V-0, min. 1.6mm thickness	UL 94	UL (E121254)
Mylar sheet	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B, SE42B-F	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E249605)
Alt.)	SICHUAN LONGHUA FILM CO LTD	PC-770F, PC-770F-A, PC-770, PC-770 A, PC-770-60B, PC-770-60B-A, PC-770-63B, PC-770-63B-A, PC-770-65B, PC-770-65B-A	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E254551)
Alt.)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B, DFR117ECOC, DFR117ECOB	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E199019)
Alt.)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECO	min. 0.4mm thickness, min. V-0 or better, 100°C	UL 94	UL (E199019)
Alt.)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR3A(d)	min. 0.4mm thickness, min. V-0 or better, 110°C	UL 94	UL (E199019)
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC- 1860B, KLX FRPC- 1870B, KLX FRPC- 870B, KLX FRPC-83	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E315185)
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP BK-10, KLX PP BK-10- KS	min. 0.4mm thickness, min. V-0 or better, 110°C	UL 94	UL (E315185)
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1880B series	min. 0.4mm thickness, min. V-0 or better, 125°C	UL 94	UL (E315185)
Alt.)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-1890B series	min. 0.4mm thickness, min. V-0 or better, 115°C	UL 94	UL (E315185)
Alt.)	JINGMEN GORUN TECHNOLOGY CO LTD	HF70, HE11(#), HE32(#), HE70(x)(#), HE70, HE42, HF11, HF42, HF41	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E305163)
Alt.)	KUNSHAN DOBESTY OPTOELECTRONIC MATERIALS CO LTD	PC9842B, PC9821B, PC9832B, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1, DB98HD, DB98	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E339070)

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Alt.)	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F, TS-FR383H, TS-FR360H	min. 0.4mm thickness, min. V-0 or better, 80°C	UL 94	UL (E329660)
Alt.)	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR1370	min. 0.4mm thickness, min. V-0 or better, 125°C	UL 94	UL (E329660)
Alt.)	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	min. 0.4mm thickness, min. V-0 or better, 125°C	UL 94	UL (E357515)
Adhesive for mylar sheet	SYMBIO	DS50-A, DS50L	100°C, 0.05mm Thickness	--	Tested with appliance
Alt.)	3M	55236, 9448A	100°C, 0.05mm Thickness	--	Tested with appliance
Alt.)	XIAMEN LABAO OPTICS & ELECTRONIC CO LTD	TD-10	100°C, 0.05mm Thickness	--	Tested with appliance
Tube used to wrap metal chassis pillar	JIANGSU PEARL SILICONE RUBBER MATERIAL CO LTD	TMC-8750Aseries, HD-87	V-0, 150°C, min. thickness 0.6mm	UL 94, UL746	UL E231325 and tested with appliance
Alt.)	Dow Toray Co., Ltd	RBB-6300-50	V-0, 150°C, min. thickness 0.75mm	UL 94, UL746	UL E55519 and tested with appliance
Switching mode power supply board: 715GD270 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	ENEC16/FI/20/10036, UL E200241
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VDE 40003610, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 9, SA-4S 6	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 7	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4D	10A, 250Vac	EN 60320-1, ANSI/UL60320- 1	TUV R 50274698 0001-0002, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VDE 40028101, UL E102641
Alt.)	Kunshan DLK Electronics	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VDE 40010513, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VDE 40015913, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-7, CDJ-7 1	10A, 250Vac	EN 60320-1, ANSI/UL60320- 1	SE-ENEC- 2001967, UL E317189
Alt.)	TECX	TU-301 series	10A, 250Vac	ANSI/UL60320- 1	UL E220004
Alt.)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14-05, DB-14-15, DB-14-07, DB-14-11-L, DB-14-14-L, DB-14-23	10A, 250Vac	IEC/EN 60321-1, ANSI/UL60320- 1	VDE 40028645, UL E327347
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0714-1, 0711-2	10A, 250Vac	ANSI/UL60320- 1	UL E94191
Alt.)	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	ENEC, UL, TUV mark
Fuse (F901 on primary)	Littelfuse Inc.	382	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1,	TUV R 50310551 0001-0004, UL E10480

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				ANSI/UL 248-14	
Alt.)	Conquer	MET	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017157, UL E82636
Alt.)	Conquer	MST	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50371756 0001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018790, UL E220181
Alt.)	Walter	2010 Serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T4AL, 250Vac	EN 60127-1, EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T4AL, 250Vac	EN 60127-1, EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092
Alt.)	Walter	ICP-Series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T4AL, 250Vac	EN 60127-1, EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754

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Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.47µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596
Alt.)	Europtronic	MPX	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.47µF, Min. 275Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT9700014 1, UL E97797
Alt.)	TDK	B3292	Max. 0.47µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.47µF, Min. 275Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	Jianghao	CBB62B	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Bleeder resistor (R907, R908, R909)	Tzai Yuan Enterprise Co., Ltd.	HSMD series, SMD series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	UL CB (Report No. E354677-4789012814-1 Original)
Alt.)	Yageo Corporation	RV1206 series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	UL CB (Report No. E491387-4787887815-1 Original)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO99692)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO109707)
Alt.)	Interchangeable	Interchangeable	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB

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Line Choke (L901) (Optional)	CHANNELON	373G0174602H	105°C	--	--
Alt.)	LIANFENG	373G0174602J	105°C	--	--
Alt.)	Taichang	373G0174602S	105°C	--	--
Transformer (T901)	LIANFENG	380GL32P783J	Class 130 material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	SUMITOMO	PM-9750	Phenolic, V-0, 150°C	UL 94	UL (E41429)
Alt.)	CHANG CHUN PLASTICS CO. LTD	T200HF	Phenolic, V-0, 150°C	UL 94	UL (E59481)
-Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E213764), VDE (138053)
-Insulation Tape	JINGJIANG YAHUA	CT*(c)(g)	130°C	UL 510	UL (E165111)
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL (E156256)
Transformer (T901) Alt.)	PHOENIX	380GL32P783P	Class 130 material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	SUMITOMO	PM-9750, PM-9823	Phenolic, V-0, 150°C	UL 94	UL (E41429)
-Triple insulation wire	YUSHENG	TIW-B	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E332529), VDE (40033527)
-Insulation Tape	JINGJIANG YAHUA	CT*(c)(g)	130°C	UL 510	UL (E165111)
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL (E156256)
Transformer (T901) Alt.)	CHANNELON	380GL32P783H	Class 130 material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Accepted by TÜV Rheinland
-Bobbin	CHANG CHUN PLASTICS CO. LTD	T200HF	Phenolic, V-0, 150°C	UL 94	UL (E59481)
-Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E213764), VDE (138053)
-Insulation Tape	JINGJIANG YAHUA	CT*(c)(g)	130°C	UL 510	UL (E165111)
-Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL (E156256)
Switching mode power supply board: 715GD270 Type B by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	ENEC16/FI/2 0/10036, UL E200241
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VDE 40003610, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 9, SA-4S 6	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 7	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4D	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	TUV R 50274698 0001-0002, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VDE 40028101, UL E102641
Alt.)	Kunshan DLK Electronics	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VDE 40010513, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VD 400105913, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-7, CDJ-7 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	SE-ENEC-2001967, UL E317189
Alt.)	TECX	TU-301 series	10A, 250Vac	ANSI/UL60320- 1	UL E220004

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Alt.)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14-05, DB-14-15, DB-14-07, DB-14-11-L, DB-14-14-L, DB-14-23	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	VDE 40028645, UL E327347
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0714-1, 0711-2	10A, 250Vac	ANSI/UL60320- 1	UL E94191
Alt.)	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320- 1	ENEC, UL, TUV mark
Fuse (F901)	Littelfuse Inc.	382	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50310551 0001-0004, UL E10480
Alt.)	Conquer	MET	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017157, UL E82636
Alt.)	Conquer	MST	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50371756 0001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018790, UL E220181
Alt.)	Walter	2010 Serie(s)	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T3.15AL, 250Vac	EN 60127-1, EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092
Alt.)	Walter	ICP-Series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003

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Certificado de Conformidade

Certificate of Conformity

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June 5, 2027

Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SB	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 680pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.47µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.47µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596
Alt.)	Europtronic	MPX	Max. 0.47 µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.47 µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.47 µF, Min. 275Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT97000141, UL E97797
Alt.)	TDK	B3292	Max. 0.47 µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863

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Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.47μF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	Jinghao	CBB62B	Max. 0.47μF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.47 μF, 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Bleeder resistor (R907, R908, R909)	Tzai Yuan Enterprise Co., Ltd.	HSMD series, SMD series	Each 620KΩ Min. 1/4W	IEC 62368-1	UL CB (Report No. E354677-4789012814-1 Original)
Alt.)	Yageo Corporation	RV1206 series	Each 620KΩ Min. 1/4W	IEC 62368-1	UL CB (Report No. E491387-4787887815-1 Original)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	Each 620KΩ Min. 1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO99692)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series	Each 620KΩ Min. 1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO109707)
Alt.)	Interchangeable	Interchangeable	Each 620KΩ Min. 1/4W	IEC 62368-1	CB
Line Choke (L901) (Optional)	CHANNELON	373G0174600H	105°C	--	--
Alt.)	LIANFENG	373G0174600J	105°C	--	--
Alt.)	Taichang	373G0174600S	105°C	--	--
Transformer (T901)	JIANGSU CHANNELON ELECTRONIC GROUP CO.,LTD.	380GL32P789H / CLT-116005	Class (B)	--	Accepted by TÜV Rheinland
- Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HF	V-0, Phenolic, 150°C	UL 94	UL E59481
- Triple insulation wire	KBI COSMOLINK CO.,LTD	TIW-M(XX) (UL) TIW-M (VDE)	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	No.CT	130°C	UL 510	UL E165111
- Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	HAINING LIANFENG DONGJIN ELECTRONICS CO.,LTD	380GL32P789J / BCK-30-L01702	Class (B)	--	Accepted by TÜV Rheinland
- Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HF	V-0, Phenolic, 150°C	UL 94	UL E59481
- Triple insulation wire	KBI COSMOLINK CO.,LTD	TIW-M	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	No.CT	130°C	UL 510	UL E165111
- Teflon tube	GREAT HOLDING	TEFLON TUBING TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	PHOENIX	380GL32P789P / PH01087700-2	Class (B)	--	Accepted by TÜV Rheinland
- Bobbin	SUMITOMO BAKELITE CO.,LTD	PM-9750, PM-9823	V-0, Phenolic, 150°C	UL 94	UL E41429
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B* (UL) TIW-B (VDE)	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E332529, VDE 40033527
- Insulation tape	YAHUA	No.CT	130°C	UL 510	UL E165111
- Teflon tube	GREAT HOLDING	TEFLON TUBING TFL	200°C	UL 224	UL E156256
Switching mode power supply board: 715GD270 Type C by TPV					
AC-Inlet (CN901)	Solteam Incorporation	ST-01 (For ENEC) ST-01A, ST-01C (For VDE) ST-01 Series (For UL)	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC (ENEC16/FI/20/10036) VDE (40015691) UL (E200241)

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Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

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June 5, 2027

Alt.)	Solteam Incorporation	SC04 (For ENEC), SC04-1BWW, SC04-2BTT	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC (ENEC16/FI/20/10040) UL (E200241)
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1 (For VDE) SA-4S 7, SA-4S 9 (For TUV) SA-4S 6, SA-4S 12 (For UL)	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE (40003610) TUV (R50293856) UL (E154342)
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 28 SA-4S 29	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV (R50293856) UL (E154342)
Alt.)	Rong Feng Industrial Co., Ltd.	SS-7B, SS-120	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE (40028101) UL (E102641)
Alt.)	Rong Feng Industrial Co., Ltd.	SS-3B	10A/250Vac	ANSI/UL60320-1	UL (E102641)
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0711-2, 0714	10A/250Vac	ANSI/UL60320-1	UL (E94191)
Alt.)	TECX-UNIONS TECHNOLOGY CORP	TU-301 series	10A/250Vac	ANSI/UL60320-1	UL (E220004)
Alt.)	Kunshan DLK Electronics Technology Co., Ltd	CDJ-3	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE (40010513) UL (E217394)
Alt.)	Kunshan DLK Electronics Technology Co., Ltd	CDJ-3-1	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE (40015913) UL (E217394)
Alt.)	Kunshan DLK Electronics Technology Co., Ltd	CDJ-7, CDJ-7 1	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC (SE- ENEC-2001967) UL (E317189)
Alt.)	Kunshan DLK Electronics Technology Co., Ltd	DB-14 series	10A/250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE (40028645) UL (E327347)
Alt.)	Interchangeable	Interchangeable	10A, 250Vac, 15A, 250Vac,	IEC/EN 60320-1, ANSI/UL60320-1	VDE, UL
Fuse (F901)	Littelfuse Inc.	382	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50310551 0001-0004, UL E10480
Alt.)	Conquer	MET	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017157, UL E82636
Alt.)	Conquer	MST	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50371756 0001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180

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Alt.)	Walter	2000	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018790, UL E56092
Alt.)	Walter	2010 Serie(s)	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E56092
Alt.)	Walter	1032ST	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092
Alt.)	Walter	ICP-Series	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T4AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	XIAMEN WANMING ELECTRONICS CO LTD	CM series, SD series, CK series (for ENEC) CM, SD, CK (for UL)	Max. 1500pF, Min. 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC ENEC-02630, UL E221839
Alt.)	SICHUAN TERUIXIANG	TL series (for ENEC) TL (for UL)	Max. 1500pF, Min. 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC ENEC-02630, UL E221839
Alt.)	Sichuan Teruixiang	TRX series (for ENEC) TRX (for UL)	Max. 1500pF, Min. 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC ENEC-02084-M1 UL E315719
Alt.)	Shenzhen Teruixiang Electronic Co, Ltd. (VDE) Sichuan Teruixiang Technology International Co Ltd (UL)	TY-Series (VDE), TY (UL)	Max. 1500pF, Min. 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40031733, UL E315719
Alt.)	Interchangeable	Interchangeable	Max. 1500pF, Min. 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL

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June 5, 2027

X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.47µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.47 µF, 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596
Alt.)	Europtronic	MPX	Max. 0.47 µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.47 µF, 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.47 µF, Min. 275Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT97000141, UL E97797
Alt.)	TDK	B3292	Max. 0.47 µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	Jinghao	CBB62B	Max. 0.47µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.47 µF, 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Bleeder resistor (R907, R908, R909)	Tzai Yuan Enterprise Co., Ltd.	HSMD series, SMD series	Each 620KΩ Min. 1/4W	IEC 62368-1	UL CB (Report No. E354677-4789012814-1 Original)
Alt.)	Yageo Corporation	RV1206 series	Each 620KΩ Min. 1/4W	IEC 62368-1	UL CB (Report No. E491387-4787887815-1 Original)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	Each 620KΩ Min. 1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO99692)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series	Each 620KΩ Min. 1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO109707)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06********* series	Each 620KΩ Min. 1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO127737)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06********* series	Each 620KΩ Min. 1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO127738)
Alt.)	Interchangeable	Interchangeable	Each 620KΩ Min. 1/4W	IEC 62368-1	CB
Line Choke (L901) (Optional)	JIANGSU CHANNELON	373G0174602H	130°C	--	--
Alt.)	HAINING LIANFENG DONGJIN ELECTRONICS CO.,LTD	373G0174602J	130°C	--	--
Alt.)	Taichang	373G0174602S	130°C	--	--
Transformer (T901)	JIANGSU CHANNELON ELECTRONIC GROUP CO.,LTD.	380GL88P084H / CLT-126057	Class (B)	--	Accepted by TÜV Rheinland
- Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HA	V-0, 150°C, min. 0.45mm thickness	UL 94	UL E59481
- Triple insulation wire	KBI COSMOLINK CO.,LTD	TIW-M(XX) (UL) TIW-M (VDE)	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT	130°C	UL 510	UL E165111
- Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	LIANFENG DONGJIN	380GL88P084J / BCK-35-L026HC	Class (B)	--	Accepted by TÜV Rheinland

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- Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HF	V-0, 150°C, min. 0.45mm thickness	UL 94	UL E59481
- Triple insulation wire	KBI COSMOLINK CO.,LTD	TIW-M(XX) (UL) TIW-M (VDE)	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT	130°C	UL 510	UL E165111
- Teflon tube	GREAT HOLDING	TEFLON TUBING TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	PHOENIX	380GL88P084P / PH-001260003	Class (B)	--	Accepted by TÜV Rheinland
- Bobbin	SUMITOMO BAKELITE CO.,LTD	PM-9750, PM-9823	V-0, 150°C, min. 0.45mm thickness	UL 94	UL E41429
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B* (UL) TIW-B (VDE)	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E332529, VDE 40033527
- Insulation tape	YAHUA	CT	130°C	UL 510	UL E165111
- Teflon tube	GREAT HOLDING	TEFLON TUBING TFL	200°C	UL 224	UL E156256
Transformer (T901) Alt.)	ASET	380GL88P084X / 3101282126	Class (B)	--	Accepted by TÜV Rheinland
- Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HA	V-0, 150°C, min. 0.45mm thickness	UL 94	UL E59481
- Triple insulation wire	KBI COSMOLINK CO.,LTD	TIW-M(XX) (UL) TIW-M (VDE)	Max.130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL E213764, VDE 138053
- Insulation tape	YAHUA	CT	130°C	UL 510	UL E165111
- Teflon tube	GREAT HOLDING	TFL	200°C	UL 224	UL E156256
Switching mode power supply board: 715GE031 by TPV					
AC-Inlet (CN9001)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC16/FI/20/ 10036, UL E200241
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40003610, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 9, SA-4S 6	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 7	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4D	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	TUV R 50274698 0001-0002, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40028101, UL E102641
Alt.)	Kunshan DLK Electronics	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40010513, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40015913, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-7, CDJ-7 1	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	SE-ENEC- 2001967, UL E317189
Alt.)	TECX	TU-301 series	10A, 250Vac	ANSI/UL60320-1	UL E220004
Alt.)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14-05, DB-14-15, DB-14-07, DB-14-11-L, DB-14-14-L, DB-14-23	10A, 250Vac	IEC/EN 60321-1, ANSI/UL60320-1	VDE 40028645, UL E327347
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0714-1, 0711-2	10A, 250Vac	ANSI/UL60320-1	UL E94191
Alt.)	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC, UL, TUV mark
Fuse (F9001 on primary)	Littelfuse Inc.	382	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1,	VDE 126983, UL E67006

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				ANSI/UL 248-14	
Alt.)	Littelfuse Inc.	443	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50310551 0001-0004, UL E10480
Alt.)	Conquer	MET	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017157, UL E82636
Alt.)	Conquer	MST	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50371756 0001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018790, UL E220181
Alt.)	Walter	2010 Serie(s)	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T3.15AL, 250Vac	EN 60127-1, EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092
Alt.)	Walter	ICP-Series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003
Y- Capacitor (C9016, C9017) Y1 or Y2 type (optional)	Walsin	AC	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006

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Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C9009) Y1 type (optional)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C9014) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596
Alt.)	Europtronic	MPX	Max. 0.22µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.22µF, Min. 275Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT97000141, UL E97797
Alt.)	TDK	B3292	Max. 0.22µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	Jianghao	CBB62B	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Photo Coupler (U9002)	Sharp	PC123 (UL), PC123 Option Y (VDE)	Di more than 0.4mm, int = thermal cycling test, ext. more than 8.0mm, 5000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40008087, UL E64380
Alt.)	Vishay Semiconductor	TCET1103-3034	Di more than 0.5mm, int = thermal cycling test, ext. cr more than 7.7mm, 4000Vac, 100°C.	EN 60747-5-5	VDE 40028080
Alt.)	Everlight Electronics Co., Ltd.	EL817	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 8.0mm, 4000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 132249, UL E214129
Alt.)	Everlight Electronics Co., Ltd.	EL817M (VDE), EL817 (UL)	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 8.0mm, 4000Vac, 110°C.	IEC/EN 60747-5-5	VDE 132249, UL 214129

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Alt.)	TOSHIBA	TLP781F , TLP781	Di more than 0.5mm, int. cr =thermal cycling test, ext. cr more than 6.5mm, 4800Vac, 115°C.	EN 60747-5-5, ANSI/UL 1577	VDE 40021173, UL E67349
Alt.)	TOSHIBA	TLP421F	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.0mm, 5000Vac, 110°C.	IEC/EN 60747-5-5	VDE 40010944
Alt.)	RENESAS ELECTRONICS CORPORATION	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, 5000Vac, 100°C.	EN 60747-5-5, ANSI/UL 1577	VDE 40008862, UL E72422
Alt.)	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.1mm, 4000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40028391, UL E214129
Alt.)	Lite-On	LTV-817	Di more than 0.6mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, 4000Vac, 100°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40015248, UL E113898
Alt.)	Interchangeable	Interchangeable	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 6.5mm, 4800Vac, 115°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE, UL
Bleeder resistor (R9018, R9019, R9020)	Tzai Yuan Enterprise Co., Ltd.	HSMD series, SMD series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	UL CB (Report No. E354677-4789012814-1 Original)
Alt.)	Yageo Corporation	RV1206 series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	UL CB (Report No. E491387-4787887815-1 Original)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO99692)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO109707)
Alt.)	Interchangeable	Interchangeable	Each Max. 620KΩ, Min.1/4W	IEC 62368-1	CB
Line Choke (L9002) (Optional)	CHANNELON	373G0174600H	105°C	--	--
Alt.)	LIANFENG	373G0174600J	105°C	--	--
Alt.)	Taichang	373G0174600S	105°C	--	--
Transformer (T9001)	JIANGSU CHANNELON ELECTRONIC GROUP CO.,LTD	380GL32P628H / BACK-11312-HA	Class 130 material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	CHANG CHUN PLASTICS CO. LTD	T200HF	Phenolic, V-0, 150°C	UL 94	UL (E59481)
- Triple insulation wire	KBI COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E213764), VDE (138053)
- Insulation Tape	JINGJIANG YAHUA	NO.CT	130°C	UL 510	UL (E165111)
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL (E156256)
Transformer (T9001) Alt.)	HAINING LIANFENG DONGJIN ELECTRONICS CO., LTD	380GL32P628J / BACK-30-L01312	Class 130 material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HF	Phenolic, V-0, 150°C	UL 94	UL (E59481)
- Triple insulation wire	KBI COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E213764), VDE (138053)
- Insulation Tape	JINGJIANG YAHUA	No.CT	130°C	UL 510	UL (E165111)
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL (E156256)
Transformer (T9001) Alt.)	Phoenix	380GL32P628P / PH01090100	Class 130 material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Accepted by TÜV Rheinland

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- Bobbin	CHANG CHUN PLASTICS CO.LTD	T200HF	Phenolic, V-0, 150°C	UL 94	UL (E59481)
- Triple insulation wire	KBI COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E213764), VDE (138053)
- Insulation Tape	JINGJIANG YAHUA	No.CT	130°C	UL 510	UL (E165111)
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TFL	200°C	UL 224	UL (E156256)
Transformer (T9001) Alt.)	TAICHANG	380GL32P628S / BCK-EE13-06019	Class 130 material (B)	Applicable parts of IEC 62368-1 and according to IEC 60085	Accepted by TÜV Rheinland
- Bobbin	SUMITOMO BAKELITE CO LTD	PM-9630	Phenolic, V-0, 150°C	UL 94	UL (E41429)
- Triple insulation wire	GREAT LEOFLON INDUSTRIAL CO., LTD	TRW(B)* (UL) TRW(B) VDE	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E211989), VDE (136581)
- Insulation Tape	JINGJIANG YAHUA	No.CT	130°C	UL 510	UL (E165111)
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBING TFL	200°C	UL 224	UL (E156256)
Switching mode power supply board: 715G7300 by TPV					
AC-Inlet (CN901)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC16/FI/20/ 10036, UL E200241
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S, SA-4S 1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40003610, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 9, SA-4S 6	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4S 7	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	TUV R 50293856 0001-0012, UL E154342
Alt.)	Zhangjiagang Huajie Electronic Co., Ltd.	SA-4D	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	TUV R 50274698 0001-0002, UL E154342
Alt.)	Rong Feng	SS-120, SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40028101, UL E102641
Alt.)	Kunshan DLK Electronics	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40010513, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	VDE 40015913, UL E217394
Alt.)	Kunshan DLK Electronics	CDJ-7, CDJ-7 1	10A, 250Vac	EN 60320-1, ANSI/UL60320-1	SE-ENEC- 2001967, UL E317189
Alt.)	TECX	TU-301 series	10A, 250Vac	ANSI/UL60320-1	UL E220004
Alt.)	Yueqing Hongchang	DB-14, DB-14-14-R, DB-14-05, DB-14-15, DB-14-07, DB-14-11-L, DB-14-14-L, DB-14-23	10A, 250Vac	IEC/EN 60321-1, ANSI/UL60320-1	VDE 40028645, UL E327347
Alt.)	INALWAYS ELECTRONICS INC	0707-1, 0714-1, 0711-2	10A, 250Vac	ANSI/UL60320-1	UL E94191
Alt.)	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1, ANSI/UL60320-1	ENEC, UL, TUV mark
Fuse (F901 on primary)	Littelfuse Inc.	382	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018249, UL E67006
Alt.)	Littelfuse Inc.	392	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 126983, UL E67006
Alt.)	Littelfuse Inc.	443	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50310551 0001-0004, UL E10480
Alt.)	Conquer	MET	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3,	VDE 40017157, UL E82636

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1498

				ANSI/UL 248-1, ANSI/UL 248-14	
Alt.)	Conquer	MST	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40017118, UL E82636
Alt.)	Conquer	PTU	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40001462, UL E82636
Alt.)	Conquer	SEI	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50371756 0001, UL E82636
Alt.)	Cooper Bussmann LLC	SR-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 122052, UL E19180,
Alt.)	Cooper Bussmann LLC	SS-5	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40015513, UL E19180
Alt.)	Walter	2000	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018790, UL E220181
Alt.)	Walter	2010 Serie(s)	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40018781, UL E220181
Alt.)	Walter	1032ST	T3.15AL, 250Vac	EN 60127-1, EN 60127-7, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50406605 0001-0003, UL E56092
Alt.)	Walter	2040	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV J 50426356 0001-0002, UL E56092
Alt.)	Walter	ICP-Series	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40012824, UL E56092
Alt.)	Better	932	T3.15AL, 250Vac	IEC/ EN 60127-1, IEC/ EN 60127-3, ANSI/UL 248-1, ANSI/UL 248-14	VDE 40033369, UL E300003
Alt.)	Better	244	T3.15AL, 250Vac	EN 60127-1, EN 60127-4, ANSI/UL 248-1, ANSI/UL 248-14	TUV R 50335764 0001-0003, UL E300003
Y- Capacitor (C902, C903) Y1 or Y2 type (optional)	Walsin	AC	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001829, UL E146544
Alt.)	Walsin	AH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CS	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029781, UL E37861
Alt.)	TDK	CD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002831, UL E37921
Alt.)	Murata	KH	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40002796, UL E37921
Alt.)	JYA-NAY	JY, JN	Max. 1000pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SB	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1499

Alt.)	Interchangeable	Interchangeable	Max. 1000pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Y- Capacitor (C913) Y1 type (optional)	Walsin	AH	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40001804, UL E146544
Alt.)	TDK	CD	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40029780, UL E37861
Alt.)	Murata	KX	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 UL 60384-14	VDE 40002831, UL E37921
Alt.)	JYA-NAY	JN	Max. 2200pF, 250Vac, 125°C	ANSI/UL 60384-14	UL E201384
Alt.)	Hongming	F	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40036393, UL E154899
Alt.)	Wansheng	CT7	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40012143, UL E249006
Alt.)	Haohua	CT7	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40003902, UL E233106
Alt.)	Samwha	SD	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40015804, UL E97754
Alt.)	Success	SE	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037218, UL E114280
Alt.)	Success	SB	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40037221, UL E114280
Alt.)	Yinan Don's	CT81	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 135256, UL E145038
Alt.)	Interchangeable	Interchangeable	Max. 2200pF, 250Vac, 125°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
X-Capacitor (X1 or X2 type) (C901) (optional)	Ultra Tech Xiphi	HQX	Max. 0.22µF, Min. 275Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40024534, UL E183780
Alt.)	Faratronic	MKP62	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40000358, UL E186600
Alt.)	Hua Jung	MKP	Max. 0.22µF, Min. 250Vac, 110°C	ANSI/UL 60384-14	UL E149075
Alt.)	Nanjing Tengen Rongguangda	MKP	Max. 0.22µF, Min. 250Vac, 100°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40028680, UL E200596
Alt.)	Europtronic	MPX	Max. 0.22µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018238, UL E211347
Alt.)	Europtronic	MPX2	Max. 0.22µF, Min. 275Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40025981, UL E211347
Alt.)	Liow Gu	GS-L	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40023391, UL E186321
Alt.)	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	ENEC DAT97000141, UL E97797
Alt.)	TDK	B3292	Max. 0.22µF, Min. 250Vac, 105°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40010694, UL E97863
Alt.)	ZhuHai Sung Ho Electronics Co., Ltd.	CMPP	Max. 0.22µF, Min. 275Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40026078, UL E327138
Alt.)	Jianghao	CBB62B	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE 40018690, UL E252286
Alt.)	Interchangeable	Interchangeable	Max. 0.22µF, Min. 250Vac, 110°C	IEC/EN 60384-14 ANSI/UL 60384-14	VDE, UL
Bleeder resistor (R907, R908, R909)	Tzai Yuan Enterprise Co., Ltd.	HSMD series, SMD series	Each Max. 1MΩ, Min.1/4W	IEC 62368-1	UL CB (Report No. E354677-4789012814-1 Original)
Alt.)	Yageo Corporation	RV1206 series	Each Max. 1MΩ, Min.1/4W	IEC 62368-1	UL CB (Report No. E491387-4787887815-1 Original)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	Each Max. 1MΩ, Min.1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO99692)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series	Each Max. 1MΩ, Min.1/4W	IEC 62368-1	NEMKO CB (CB cert No. NO109707)
Alt.)	Interchangeable	Interchangeable	Each Max. 1MΩ, Min.1/4W	IEC 62368-1	CB
Photo Coupler (U902)	Sharp	PC123 (UL), PC123 Option Y (VDE)	Di more than 0.4mm, int = thermal cycling test, ext. more than 8.0mm, 5000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40008087, UL E64380
Alt.)	Vishay Semiconductor	TCET1103-3034	Di more than 0.5mm, int = thermal cycling test, ext. cr more than 7.7mm, 4000Vac, 100°C.	EN 60747-5-5	VDE 40028080

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1500

Certificado de Conformidade

Certificate of Conformity

Certificado / *Certificate:* **UL-BR 24.0764**

Emissão / ***Issue***
6 de junho de 2024
June 6, 2024

Revisão/Review: **04**

Validade / ***Expiration***
5 de junho de 2027
June 5, 2027

Alt.)	Everlight Electronics Co., Ltd.	EL817	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 8.0mm, 4000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 132249, UL E214129
Alt.)	Everlight Electronics Co., Ltd.	EL817M (VDE), EL817 (UL)	Di more than 0.5mm, int. cr = thermal cycling test, ext. cr more than 8.0mm, 4000Vac, 110°C.	IEC/EN 60747-5-5	VDE 132249, UL 214129
Alt.)	TOSHIBA	TLP781F , TLP781	Di more than 0.5mm, int. cr =thermal cycling test, ext. cr more than 6.5mm, 4800Vac, 115°C.	EN 60747-5-5, ANSI/UL 1577	VDE 40021173, UL E67349
Alt.)	TOSHIBA	TLP421F	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.0mm, 5000Vac, 110°C.	IEC/EN 60747-5-5	VDE 40010944
Alt.)	RENESAS ELECTRONICS CORPORATION	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1, PS2561DL1-1	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, 5000Vac, 100°C.	EN 60747-5-5, ANSI/UL 1577	VDE 40008862, UL E72422
Alt.)	Everlight Electronics Co., Ltd.	EL1013 V (VDE), EL1013 (UL)	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 8.1mm, 4000Vac, 110°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40028391, UL E214129
Alt.)	Lite-On	LTV-817	Di more than 0.6mm, int.cr=thermal cycling test, ext. cr more than 7.0mm, 4000Vac, 100°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE 40015248, UL E113898
Alt.)	Interchangeable	Interchangeable	Di more than 0.4mm, int.cr=thermal cycling test, ext. cr more than 6.5mm, 4800Vac, 115°C.	IEC/EN 60747-5-5, ANSI/UL 1577	VDE, UL
Line Filter (L901 or L903)	CHANNELON	373G0174557H	105°C	--	--
Alt.)	LIANFENG DONGJJIN	373G0174557J	105°C	--	--
Transformer (T901)	Channelon	380GL19P535H / BCK-11628-HA	Class (B)	--	Accepted by TÜV Rheinland
- Bibbin	SUMITOMO BAKELITE CO.,LTD	PM-9820	Phenolic, V-0, 150°C	UL 94	UL (E41429)
- Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E213764), VDE (138053)
- Insulation Tape	JINGJIANG YAHUA	No.CT	130°C	UL 510	UL (E165111)
Alt.)	SYMBIO INC	No.35660Y	130°C	UL 510	UL (E50292)
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBING TFL	200°C	UL 224	UL (E156256)
Transformer (T901) Alt.)	LIANFENG DONGJJIN	380GL19P535J / BCK-30-L0535H	Class (B)	--	Accepted by TÜV Rheinland
- Bibbin	SUMITOMO BAKELITE CO.,LTD	PM-9820	Phenolic, V-0, 150°C	UL 94	UL (E41429)
- Triple insulation wire	COSMOLINK CO.,LTD	TIW-M	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E213764), VDE (138053)
- Insulation Tape	JINGJIANG YAHUA	No.CT	130°C	UL 510	UL (E165111)
Alt.)	SYMBIO INC	No.35660Y	130°C	UL 510	UL (E50292)
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBING TFL	200°C	UL 224	UL (E156256)
Transformer (T901) Alt.)	PHOENIX	380GL19P535P / PH01014600	Class (B)	--	Accepted by TÜV Rheinland
- Bibbin	SUMITOMO BAKELITE CO.,LTD	PM-9820	Phenolic, V-0, 150°C	UL 94	UL (E41429)
- Triple insulation wire	SUZHOU YUSHENG ELECTRONIC CO LTD	TIW-B+@	130°C	IEC/EN 60950-1, VDE0805 Teil1, UL 2353	UL (E332529), VDE (40033527)
- Insulation Tape	JINGJIANG YAHUA	No.CT	130°C	UL 510	UL (E165111)
Alt.)	SYMBIO INC	No.35660Y	130°C	UL 510	UL (E50292)
- Tube	GREAT HOLDING INDUSTRIAL CO.,LTD	TEFLON TUBING TFL	200°C	UL 224	UL (E156256)

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*
X4 50463017

Blatt *Sheet*
0001

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Ausstellungsdatum**	*Date of Issue*
X.L.	02-Zhaoso-60356586 001	31.03.2020	*(day/mo/yr)*

Genehmigungsinhaber *License Holder*
TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and
Technological Development Zone
Fuqing City
Fujian
P.R. China

Fertigungsstätte *Manufacturing Plant*
Refer to latest revision
of the annex list of factories

Prüfzeichen *Test Mark*

Bildqualität
ISO 9241-307
TÜVRheinland
www.tuv.com
ID 1111221669

Geprüft nach *Tested acc. to*
ISO 9241-307:2008

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Bildschirm LCD monitor (LED Backlight)

Bezeichnung (Type Designation)	: 27B2 ; 27B2******** ; 27P2 ; 27P2******** ; Q27P2 ; Q27P2******** ; U27P2 ; U27P2******** (AOC) * = 0-9, A-Z, a-z, *, -, /, \ oder (or) Leerzeichen (blank)	12
Nennspannung(Rated Voltage)	: 100-240VAC; 50/60Hz	
Nennstrom(Rated Current)	: 1.5A	
LCD-Display/LCD-Panel:	TPM270NF1 (TPV) 27 inch (68,6cm)	
Pixelfehlerklasse/Pixel Fault Class:	I	
Vorgesehener Sehabstand/Sehrichtung Design Viewing Distance/Direction	: 520mm, senk./perpendic.	
Sehrichtungsbereich/ Viewing Direction Range	: 66,8°	
Inhalt und Wahrnehmung Content and Perception	: Virtualitätsdarstellung : Artificial Information	
Farbgleichmäßigkeit/Chromaticity Uniformity - mittel/medium		

Fortsetzung Blatt (continued on page) 0002

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulations. The product
fulfills above-mentioned requirements, the production is subject to surveillance.

Zertifizierungsstelle

Aegean Certification

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
Tel.: +49 221 806-1371 e-mail: cert-validity@de.tuv.com
Fax: +49 221 806-3935 http://www.tuv.com/safety

Proposta de Preço PREW-2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1502

Anlage Fertigungsstättenliste
/Attachment List of Factories

X4 50463017 0001

1 TPV Display Technology (Wuhan)
Co., Ltd.
Unique No. 11, Zhuankou Development
District of Economic Technological
Development Zone
430056 Wuhan City
P.R. China

2 TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and
Technological Development Zone
Fuqing City
Fujian
P.R. China

3 TPV Display Technology (Beihai)
Co., Ltd.
China Electronic Beihai Industry
Park, Northeast of the Crossing
Between Taiwan Road and Jaim Road,
Beihai City
Guangxi, P.R. China

Dieser Anhang ersetzt den Vorgänger vom/
This annex replaces the previous annex dated

Datum / Date 31.03.2020

Zertifizierungsstelle
/ Certification Body

Aegean Li

Proposta de Preço HEM-2 - TORK INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1503

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*	Blatt *Sheet*
X4 50463017	0002

Ihr Zeichen *Client Reference*	Unser Zeichen *Our Reference*	Ausstellungsdatum	*Date of Issue*
X.L.	02-Zhaoso-60356586 001	31.03.2020	*(dd/mm/yr)*

Genehmigungsinhaber *License Holder*
TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and
Technological Development Zone
Fuqing City
Fujian
P.R. China

Fertigungsstätte *Manufacturing Plant*
Refer to latest revision
of the annex list of factories

Prüfzeichen *Test Mark*

Bildqualität
ISO 9241-307

Geprüft nach *Tested acc. to*
ISO 9241-307:2008

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Bildschirm LCD monitor (LED Backlight)

Fortsetzung (continuation)

Bestandteile der Beleuchtung/Components of the illumination
max. Bildschirmbeleuchtungsstärke/
max. Screen illuminance : 200lx
Quelle mit großer, kleiner Öffnung
large, small aperture source : 200cd/m² & 2000cd/m²
Hinweis/Remark : Geprüft mit/Tested with
VESA 60Hz - 1920 X 1080, Arial Large Font 12t., 24bpp.

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulation. The product fulfills above mentioned requirements. The production is subject to surveillance.

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
Tel +49 221 806-1371 e-mail: cert-validity@de.tuv.com
Fax +49 221 806-3935 http://www.tuv.com/safety

Aegean Li

Proposta de Preço 1YEM42-1FORIN® INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1504

TÜV Rheinland (China) Ltd.
Member of TÜV Rheinland Group

TÜVRheinland®
Precisely Right.

TPV Electronics (Fujian) Co., Ltd.
Mr. Xinliang Wu RD-SE

Rongqiao Economic and
Technological Development Zone
Fuqing City
Fujian
P.R. China

Date : 31.03.2020
Our ref. : Zhaosc 02
Your ref.: X.L.

Ref : X4 ISO 9241-307 Zaichen

Type of Equipment : LCD monitor (LED Backlight)
Model Designation : See Certificate
Certificate No. : X4 50463017 0001
Report No. : 60356586 001

Dear Mr. Xinliang Wu,

The above specified technical equipment has been tested and found to be in accordance with the relevant requirements.

Enclosed you will find the certificate of approval.

If cancellation of the certificate is submitted by November 15 in a given year, no fee will be charged for the following year.

We appreciate your kind support and would like to offer our assistance and continuous services in the future.

Please contact our office for approval of your new products.

With kind regards,

Certification Body

Aegean Li

Enclosure

请访问我们的网站www.tuvdotcom.com查阅，或拨打我们客服热线800 999 3638 / 400 883 1300咨询

TÜV Rheinland (China) Ltd.
莱茵检测认证服务（中国）有限公司
No. 01(03)-06, Floor 7 and No. 01/04(8-08, Floor 11, AVIC Building, No. 10B, Central Road, East 3rd Ring Road, Chaoyang District, Beijing, P.R. China
北京市朝阳区东三环中路乙10号 艾维克大厦7层第01、03-08号，第11层第01、04-05号 邮编：100022
Tel: (86 10) 8524 2222
Fax: (86 10) 8524 2200
e-mail: info@bj.chn.tuv.com
Internet: http://www.chn.tuv.com

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1505

CERTIFICATE

TCO Certified, generation 9

for displays



Brand name: AOC
Model name: 27*2*

Certification date: 2021-12-01
Expiry date: 2023-12-01

Toward sustainable IT products
TCO Certified is the world-leading sustainability certification for IT products. It is an easy-to-use tool that helps you get environmental and social sustainability right. Criteria are mandatory, tough, and apply globally. Compliance is always independently verified.

For more information, visit tcocertified.com.

Emma Hagrot
Certification process
TCO Development

No. D921110104

This certificate confirms that a sample of the certified product, as stated herein, has been tested and approved as to its compliance with the criteria document valid at the time of the laboratory test. The certified product may, subject to the use of the unique combination of brand name, type/model name and sales name as stated in this certificate, be marked and sold with the TCO Certified label in accordance with the agreement.

Appendix to certificate No. D921110104 -1

Brand name: AOC

Model name(s):
27*2*

1st * : P or E
2nd *: E, D, Q, H or blank
Separate power supply: No



85%
Recycled plastic



5.2 kg
Total weight of product



Energy consumption
On mode: 13.6 Watt
Sleep mode: 0.3 Watt
Off mode: 0.2 Watt



Aspect ratio: 16:9
Panel size: 27 in
Min. resolution width: 1920 px
Min. resolution height: 1080 px
Type of stand: Pivot

Sales name(s):
27E2QAE, 27P2C, 27P2Q

Additional information:
For products delivered without stand; the emission criteria 4.2 and 4.3 is not covered.

Emma Hagrot
Certification process
TCO Development

Appendix to certificate No. D921110104 -1



Panels:
TPV TPM270WF1

Emma Hagrot
Certification process
TCO Development

Declaration of Conformity

We declare that products with CTNs listed in following page produced by TPV and its affiliates comply with European RoHS 2 DIRECTIVE 2011/65/EU (on the restriction of the use of certain hazardous substances in electrical and electronic equipment) with COMMISSION DELEGATED DIRECTIVE (EU) 2015/863 of 31 March 2015 amending Annex II to Directive 2011/65/EU of the European Parliament and of the Council as regards the list of restricted substances and all its related exemptions; and Regulation (EC) No. 1907/2006 of the European Parliament and of the Council (concerning the Registratin, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, and all related regulations and annexes.

Exemption of RoHS directive used in the product: 6(c); 7(a); 7(c)-I
Covered entry no. for Resitrcted Substances of REACH: 76
Covered candidate list for Substances of Very High Concern (SVHC) of REACH: 2023.1.17

Product type: LCD Display, LCD Monitor, LCD TV, LED Display, LED TV
Brand name: PHILIPS & AOC

Best Regards.



Date: May-18’2023

PHILIPS

Monitor

27B1U5601H

27″



Especificações gerais

Tela	27" Widescreen IPS
Resolução	2560 x 1440
Brilho	350 cd/m²
Contraste dinâmico	50.000.000:1
Contraste estático	1.000:1
Ângulo de visão	H: 178° | V: 178°
Taxa de atualização	75 Hz
Tempo de resposta	4 ms
Tecnologia de sincronização	Adaptive-Sync
Alto-falantes	Sim (2 x 5W)

Especificações da tela

Tamanho do painel	27"
Tamanho da imagem visível (diagonal)	68,5 cm
Tipo de painel	IPS
Proporção de tela	16:9
Formato de tela	Widescreen
Iluminação do painel	W-LED
Resolução máxima	2560 x 1440 @ 75 Hz DP1.2: 2560 x 1440@155Hz
Pixel pitch	0,2331 (H) x 0,2331 (V) mm
Densidade de pixel	108,7 ppi
Tipo de tela	Antirreflexivo
Bit	8 bits
Brilho	350 cd/m²
sRGB	101%
Relação de contraste dinâmico	50.000.000:1
Relação de contraste estático	1.000:1
Taxa de atualização	75 Hz
Tempo de resposta	4 ms
Ângulo de visão	H: 178° | V: 178°
Frequência de varredura horizontal	30 – 114 kHz
Frequência de varredura vertical	48 – 75 Hz
Suporte de cores	Maior que 16,7 milhões

Ergonomia

VESA	Sim - 100 x 100 mm
Base ajustável	Altura: 150mm Giro: -180°/180° Inclinação: -5°/+30° Pivô: -90° ~ 90° (bidirecional)

Certificações

Normas e Certificações	EnergyStar, EPEAT, Certificação TCO Edge, ROHS, Plástico reciclado pós-consumo: 85%, Embalagem em material reciclável: 100 %, Sem mercúrio, Estrutura sem PVC/BFR,CB, Marcação CE, FCC Classe B, ICES-003, CU-EAC, TUV Ergo, TUV/GS, Certificação TUV Eye Comfort, Anti-Roubo Kensington, HDCP 2.2, HBR 3

Conexões e Recursos

Conectores	1x HDMI 1.4 (HDCP 2.2) 1x DisplayPort 1.4 (HDCP 2.2) 1x Saída DisplayPort 1x USB-C 3.2 Gen 2 (10 Gbps, Upstream, DP Alt mode, Data, PD até 100 W) 4x USB-A downstream 3.2 Gen 2 (1x Fast Charging) 1x USB-C downstream (Data, PD 15 W) 1x USB-C upstream x 1 (dados) 1x Entrada de Headset P3 (Entrada e Saída de Áudio) 1x Entrada RJ45 (Ethernet LAN up to 1 G, Wake on LAN) 1x Entrada de Sincronização (Separada)
Alto-falantes	Sim (2 x 5W)
Tecnologias	Adaptive-Sync, Low Blue Mode, Flicker-Free, PowerSensor, KVM e Multiview
Webcam	Pop-Up Windows Hello™ Webcam 5MP Noise Cancelling
Daisy Chain / MST	Daisy Chain / MST
Compatibilidade	DDC/CI, Mac OS X, sRGB, Windows 11/10/8.1/8/7
Plug & Play	DDC/CI, Mac OS X, sRGB, Windows 11/10/8.1/8/7
Função OSD (On Screen Display)	Sim - Português e outros idiomas
Destaque	Hello Webcam 5MP Noise Cancelling | QHD | USB-C Docking Station 100W | Daisy Chain MST | KVM | IPS | PowerSensor | Light Sensor | Base ajustável

Energia

Fonte	Interna - 100-240 V CA, 50-60 Hz
Consumo	Ligado: 21 W (Típico - Método de Teste EnergyStar) , Stand-by: < 0,4 W Desligado: 0 W com interruptor de CA

Dimensões, peso e embalagem

Dimensões monitor com base (L x A x P)	613 x 537 x 225 mm
Dimensões monitor sem base (L x A x P)	613 x 366 x 55 mm
Dimensões embalagem (L x A x P)	730 x 471 x 193 mm
Peso sem embalagem (com base)	7,30 kg
Peso sem embalagem (sem base)	5,54 kg
Peso com embalagem	10,88 kg
Itens inclusos na embalagem	Cabo de força brasileiro NBR 14136, cabo DP, Cabo HDMI, cabo USB, certificado de garantia, base e monitor

Outros

Cor predominante do produto	Preto
Cor predominante da base	Preto
Sugestão de descrição	Monitor Philips 27" QHD Hello Webcam 5MP Noise Cancelling USB-C 100W 27B1U5601H
Garantia	3 anos
Código EAN	8721038004373
Classificação fiscal (NCM)	8528.52.00
CEST	21.068.00
PPB	Não
Local de fabricação	China

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ENERGY STAR CERTIFIED

Displays

PHILIPS - 27B1U5601H : 27B1U56

Specifications

ENERGY STAR Unique ID:	2401079
Brand Name:	PHILIPS
Model Name:	27B1U5601H
Model Number:	27B1U56
Product Type:	Monitor
Panel Type:	TFT LCD
Screen Size (inches):	27.0
Screen Area (square inches):	310.47
Native Resolution (pixels):	2560 x 1440
Maximum Luminance (candelas per square meter):	300.0
Total Native Resolution (megapixels):	3.7
Model Features:	Full Network Connectivity,USB-C,Built-In Speakers
Signal or Data Interfaces:	RJ45,Display,HDMI,USB
Power Source:	Ac to dc internal power supply
Monitor Total Energy Consumption at 115 Volts (kWh/yr):	64.02
On Mode Power (watts):	20.36
Markets:	United States, Taiwan, Japan, Canada
Sleep Mode Power (watts):	0.28
Off Mode Power (watts):	0.26
ENERGY STAR Certified:	Yes
ENERGY STAR Most Efficient:	No

Additional Model Information

,27B1U5601H,

UPC Codes	609585255807

Captured On:
07/01/2025

IEC IECEE CB SCHEME		Ref. Certif. No. **SE-108911**

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product	LCD Monitor
Name and address of the applicant	TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, China
Name and address of the manufacturer	MMD (Shanghai) Electronics Technology Co., Ltd. Room 5060A, No. 2 Building, 555 Dongchuan Road, Minhang District, Shanghai, 200241, China
Name and address of the factory Note: *When more than one factory, please report on page 2*	See page 2
Ratings and principal characteristics	100-240V~, 50/60Hz, 2A, Class I
Trademark (if any)	PHILIPS
Customer's Testing Facility (CTF) Stage used	-
Model / Type Ref.	27B1U5601H, 27B1U56, 27B**********, 27*1**********
Additional information (if necessary may also be reported on page 2)	See page 2
A sample of the product was tested and found to be in conformity with	IEC 62368-1:2014
As shown in the Test Report Ref. No. which forms part of this Certificate	220501892SHA-001

This CB Test Certificate is issued by the National Certification Body

Intertek Semko AB
Torshamnsgatan 43
Box 1103
SE-164 22 Kista, Sweden

intertek

Signature:

Gary Hu

Date: 26 August, 2022

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1512

Factories

1. TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, China

2. TPV Electronics (Fujian) Co., Ltd.
Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, China

3. TPV Electronics (Fujian) Co., Ltd.
Optoelectronic Park, Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, China

4. L&T Display Technology (Fujian) Ltd
Optoelectronic Park, Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, China

5. TPV Display Technology (China) Co., Ltd.
No. 106 Jinghai 3 Rd., BDA Beijing City 100176, China

6. TPV Display Technology (Wuhan) Co., Ltd
Unique No.11 Zhuankou Development District of Economic Technological Development Zone, Wuhan City, China

7. TPV Display Technology (Beihai) Co., Ltd.
China Electronic Beihai Industry Park, Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi, China

8. Trend Smart CE Mexico S. DE R.L. DE C.V.
Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana, Baja California, C.P. 22435, Mexico

9. Envision Indústria de Produtos Eletrônicos Ltda.
Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM – Brasil

10. TPV Technology (Thailand) Company Limited
No.267, Mu 7, Tha Tum Sub-District, Si Maha Pho District, Prachin Buri Province, Thailand

11. GeneTouch Corporation
No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012, Taiwan

12. Dixon Technologies (India) Limited.
EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post, Revenue Vikruthamala, Yerpedu Mandelam, District-Chittoor, Andhra Pradesh, 517526, India

13. Fábrica Austral de Productos Eléctricos S.A.
Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur, Argentina

Additional information

Explanation of models 27B**********, 27*1*********:
The symbol “*” can be 0-9, A-Z, a-z, “+”, “-”, “/”, “\” or blank, which is not influencing on safety.

The group and national differences for the CENELEC countries, and the national differences for USA, Canada, Australia/New Zealand and Japan have been checked.

Date: 26 August, 2022

Signature:

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1513

Test Report issued under the responsibility of:

intertek
Total Quality. Assured.

TEST REPORT
IEC 62368-1
Audio/video, information and communication technology equipment
Part 1: Safety requirements

Report Number ..... :	220501892SHA-001
Date of issue ..... :	August 12, 2022
Total number of pages ..... :	129 pages
Name of Testing Laboratory preparing the Report ..... :	Intertek Testing Services Shanghai
Applicant's name ..... :	TPV Electronics (Fujian) Co., Ltd.
Address ..... :	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China
Test specification:	
Standard ..... :	IEC 62368-1:2014
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
TRF template used ..... :	IECEE OD-2020-F1:2021, Ed.1.4
Test Report Form No. ..... :	IEC62368_1D
Test Report Form(s) Originator .. :	UL(US)
Master TRF ..... :	Dated 2022-04-14

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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Disclaimer: This document is controlled and has been released electronically.
Only the version on the IECEE Website is the current document version

Test Item description .....:	LCD Monitor	
Trade Mark(s) .....:	PHILIPS	
Manufacturer.....:	MMD (Shanghai) Electronics Technology Co.,Ltd. Room 5060A, No.2 Building, 555 DongChuan Road, Minhang District, Shanghai, 200241, China	
Model/Type reference .....:	27B1U5601H, 27B1U56, 27B**********, 27*1********** (The symbol "*" can be 0-9, A-Z, a-z, "+", "-", "/", "\" or blank, which is not influencing on safety.)	
Ratings .....:	100-240V~, 50/60Hz, 2A Class I	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ **CB Testing Laboratory:**	Intertek Testing Services Shanghai	
Testing location/ address .....:	Building No. 86, 1198 Qinzhou Road (North) 200233 Shanghai CHINA	
Tested by (name, function, signature) .....:	Peter Lin (Engineer)	Peter.Lin
Approved by (name, function, signature) .....:	Jacky Shu (Mandated Reviewer)	
☐ **Testing procedure: CTF Stage 1:**		
Testing location/ address ..... :		
Tested by (name, function, signature) .....:		
Approved by (name, function, signature) .....:		
☐ **Testing procedure: CTF Stage 2:**		
Testing location/ address .....:		
Tested by (name, function, signature) .....:		
Witnessed by (name, function, signature) .....:		
Approved by (name, function, signature) .....:		
☐ **Testing procedure: CTF Stage 3 :**		
☐ **Testing procedure: CTF Stage 4:**		
Testing location/ address .....:		
Tested by (name, function, signature) .....:		
Witnessed by (name, function, signature) .....:		
Approved by (name, function, signature) .....:		
Supervised by (name, function, signature).....:		

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1515

List of Attachments (including a total number of pages in each attachment):

Page 85 – 94 : Group and national differences for the CENELEC countries

Page 95 – 101 : National differences for USA and Canada

Page 102 – 112 : National differences for Australia/New Zealand

Page 113 – 116 : National differences for Japan

Page 117 – 126 : Photos

Page 127 – 129 : Measurement Section

Summary of testing:

All tests are performed and the most disadvantageous results are recorded. We conclude that the appliances comply with this standard.

Tests performed (name of test and test clause):	**Testing location:**
5.2, Classification of electrical energy sources 5.3.2, Accessibility to electrical energy sources and safeguards (Accessibility test) 5.4.1.4, 6.3.2,9.0, B.2.6, Maximum operating temperature test (Heating test) 5.4.1.8, Determination of working voltage 5.4.8, Humidity test 5.4.9, Electric strength test 5.5.2.2, Safeguards against capacitance discharge test 5.6.6.2, Resistance of the protective bonding system (Ground continuity test) 5.7.2.2, 5.7.4, Earthed accessible conductive part test 6.2.2, Power source circuit classifications 6.3, 6.4, Simulated abnormal operating and single fault Conditions 8.6, Static stability test 8.7, Wall or ceiling mount loading test 9.2.5 Temperature measurements B.2.5, Input test B.3, Simulated abnormal operating conditions test B.4, Simulated single fault conditions test Annex F.3, Durability, legibility and permanence of markings Annex Q.1, Circuits intended for interconnection with building wiring P2.2, Safeguards against entry of foreign object P.4, Adhesive test T.2, T.3, T.5, Steady force test, 10N, 30N, 250N T.6, Enclosure impact test T.8, Stress relief test The equipment under test (EUT) fulfilled the test requirement according to the standard IEC 62368-1:2014 and EN 62368-1:2014+A11: 2017.	Intertek Testing Services Shanghai Building No.86, 1198 Qinzhou Road (North), 200233 Shanghai, China

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1516

Summary of compliance with National Differences (List of countries addressed):

The group and national differences for the CENELEC countries have been checked.
National differences for USA, Canada, Australia/New Zealand and Japan have also been checked.

☒ **The product fulfils the requirements of** IEC 62368-1:2014 and EN 62368-1:2014+A11: 2017.

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

☒ **Statement not required by the standard used for type testing**

(Note: When IEC or ISO standard requires a statement concerning the uncertainty of the measurement systems used for tests, this should be reported above. The informative text in parenthesis should be delete in both cases after selecting the applicable option)

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1517

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Note: For other models, marking plates are the same except for model name.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1518

TEST ITEM PARTICULARS:	
Classification of use by.....:	☒ Ordinary person ☐ Instructed person ☐ Skilled person ☒ Children likely to be present
Supply Connection .....:	☒ AC Mains ☐ DC Mains ☐ External Circuit - not Mains connected - ☐ ES1 ☐ ES2 ☐ ES3
Supply % Tolerance .....:	☒ +10%/-10% ☐ +20%/-15% ☐ +____%/ -_____% ☐ None
Supply Connection – Type .....:	☒ pluggable equipment type A - ☐ non-detachable supply cord ☒ appliance coupler ☐ direct plug-in ☐ mating connector ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☐ other:_____
Considered current rating of protective device as part of building or equipment installation.....:	16A or 20A; Installation location: ☒ building; ☐ equipment
Equipment mobility.....:	☒ movable ☐ hand-held ☐ transportable ☐ stationary ☐ for building-in ☐ direct plug-in ☐ rack-mounting ☒ wall-mounted
Over voltage category (OVC) .....:	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other: _____
Class of equipment .....:	☒ Class I ☐ Class II ☐ Class III ☐ Class II with functional earthing ☐ Not classifed
Access location .....:	☐ restricted access area ☒ N/A
Pollution degree (PD) .....:	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maxium operating ambient .....:	40°C
IP protection class .....:	☒ IPX0 ☐ IP___
Power Systems .....:	☒ TN ☐ TT ☐ IT - ____ V L-L; ☐ dc mains ☐ N/A
Altitude during operation (m) .....:	☐ 2000m or less ☒ 5000m
Altitude of test laboratory (m) .....:	☐ 2000m or less ☒ 50m
Mass of equipment (kg) .....:	☒ Approx:7.36kg (with pedestal), pedestal: approx. 1.76kg.

TRF No. IEC62368_1D

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1519

Possible test case verdicts:	
- test case does not apply to the test object .....:	N/A
- test object does meet the requirement .....:	P (Pass)
- test object does not meet the requirement .....:	F (Fail)
Testing .....:	
Date of receipt of test item.....:	June 1, 2022
Date (s) of performance of tests .....:	June 1, 2022 ~ August 12, 2022

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

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When determining the test conclusion, the Measurement Uncertainty of test has been considered.

The samples submitted from for evaluation are representative of the products from each factory.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☒ **Yes** ☐ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1520

Name and address of factory (ies).....:	1.TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China 2.TPV Electronics (Fujian) Co., Ltd. Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, P.R.China 3.TPV Electronics (Fujian) Co., Ltd. Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, PRC 4. L&T Display Technology (Fujian) Ltd Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, PRC 5.TPV Display Technology (China) Co., Ltd No.106 Jinghai 3 Rd., BDA, Beijing City 100176 P.R. China 6. TPV Display Technology (Wuhan) Co., Ltd Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,P.R.China 7. TPV Display Technology（Beihai）Co.,Ltd. China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi,P.R.China 8. TREND SMART CE MEXICO S. DE R.L. DE C.V. Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana , Baja California, C.P. 22435 Mexico 9. Envision Indústria de Produtos Eletrônicos Ltda. Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM – Brasil 10.TPV Technology (Thailand) Co., Ltd. No.267 Mu7, Tha Tum Sub- District, Si Maha Pho District,Prachin Buri Province, Thailand 11. GeneTouch Corporation No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012, Taiwan 12. Dixon Technologies (India) Ltd. EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post, Revenue Vikruthamala, Yerpedu Mandelam, District-Chittoor, Andhra Pradesh, 517526 India 13. Fábrica Austral de Productos Eléctricos S.A. Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur, Argentina

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1521

General product information and other remarks:
Product Description – The equipments under test (EUTs) are 27” (68.58cm) LCD monitor with LED backlight, for general office and indoor use. For the product listed in this report, the HDMI function, DP function, USB function and USB C function were treated as optional function. The EUT have the following features: 1. Building-in power supply board 715GB656. 2. The internal metal chassis is considered as fire enclosure, which is covered all parts. 3. The external plastic enclosure is regarded as mechanical and electrical enclosure, made of min. HB material. Maximum recommended ambient (Tma):40℃ In this report, the test record for the alternative component, such as T9102 has been considered the most rigorous result. BS EN 62368-1:2014+A11:2017 is also considered in this report.
Model Differences – All models are identical except for model designation.
Additional application considerations – (Considerations used to test a component or sub-assembly) – N/A

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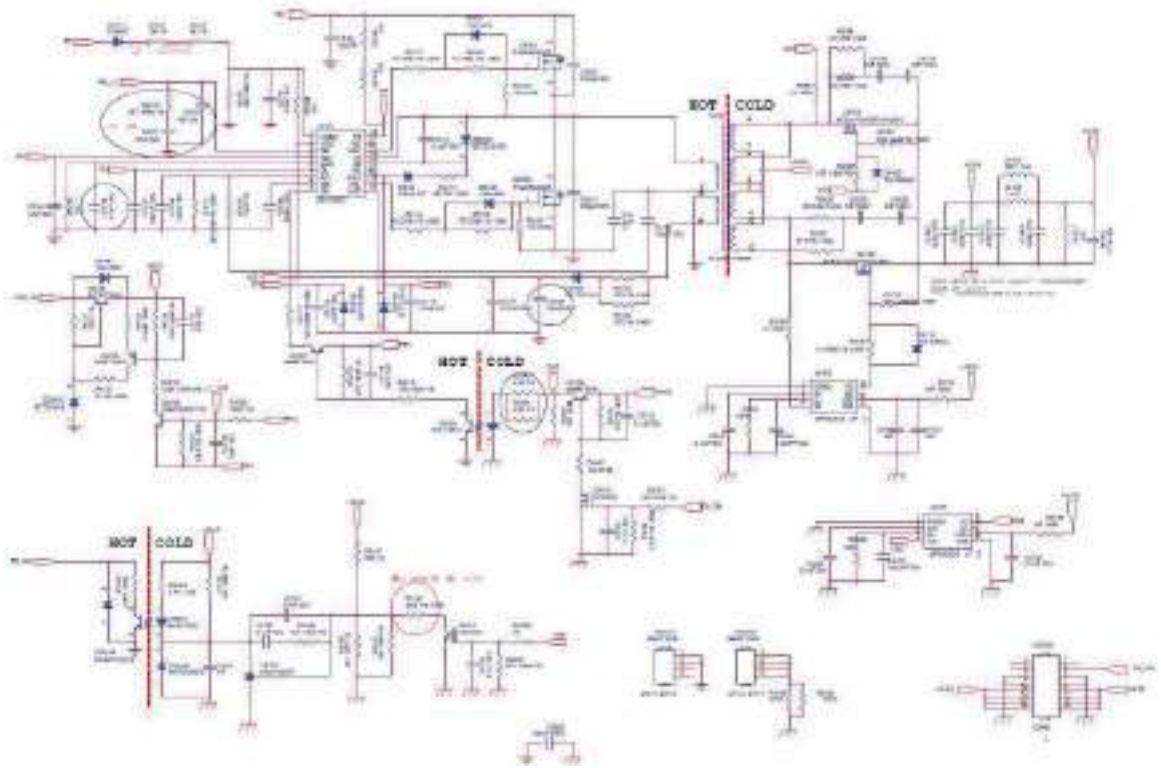
ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.	
Electrically-caused injury (Clause 5): (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input ES1	
Source of electrical energy	**Corresponding classification (ES)**
L/N pin of appliance inlet	ES3
Primary circuit	ES3
DC output of power board	ES1
Electrically-caused fire (Clause 6): (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): PS2	
Source of power or PIS	**Corresponding classification (PS)**
Primary circuit	PS3
DC output of power board	PS2
Injury caused by hazardous substances (Clause 7) (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component Glycol	
Source of hazardous substances	**Corresponding chemical**
--	--
Mechanically-caused injury (Clause 8) (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit MS2	
Source of kinetic/mechanical energy	**Corresponding classification (MS)**
Sharp edges and corners	MS1
Equipment mass	MS2
Wall mount	MS3
Thermal burn injury (Clause 9) (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure TS1	
Source of thermal energy	**Corresponding classification (TS)**
All accessible parts	TS1
Radiation (Clause 10) (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product RS1	
Type of radiation	**Corresponding classification (RS)**
Indicating lights	RS1

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ENERGY SOURCE DIAGRAM
Indicate which energy sources are included in the energy source diagram. Insert diagram below

☒ ES ☒ PS ☐ MS ☐ TS ☐ RS

See “Source of electrical energy” and “Source of power or PIS” on previous page for details.



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OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	**Possible Hazard**			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	ES3: L/N pin of appliance	--	--	Bleeding resistors Discharge IC
Ordinary	ES3: Primary circuit	Air gap	Enclosure	Transformer Y-cap Photo coupler
Ordinary	ES1: DC output of power board	--	--	--
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Combustible materials inside Primary circuit	PS3	Ignition not occur	Fire enclosure	--
Combustible materials supplied by DC output of power board	PS2	Ignition not occur	Mounted on V-1 Min. PCB	--
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
--	--	--	--	--
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS1: Sharp edges and corners	--	--	--
Ordinary	MS2: Equipment mass	--	--	Compliance with test 8.6
Ordinary	MS3: Wall mount	--	--	Compliance with test 8.7
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced

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Ordinary	TS1: Accessible parts	--	--	--
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	RS1: Indicating lights	--	--	--
Supplementary Information:				
(1) See attached energy source diagram for additional details. (2) “N” – Normal Condition; “A” – Abnormal Condition; “S” Single Fault				

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2.	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
4.1.3	Equipment design and construction	No accessible part which could cause injury.	P
4.1.15	Markings and instructions.....:	(See Annex F)	P
4.4.4	Safeguard robustness		P
4.4.4.2	Steady force tests.....:	(See Annex T.4, T.5)	P
4.4.4.3	Drop tests .....:		N/A
4.4.4.4	Impact tests .....:	(See Annex T.6)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests.....:		N/A
4.4.4.6	Glass Impact tests .....:		N/A
4.4.4.7	Thermoplastic material tests.....:	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard.....:		N/A
4.4.4.9	Accessibility and safeguard effectiveness		P
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions.	P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard		P
4.6.2	10 N force test applied to .....:	See appended table 5.4.2.2, 5.4.2.4 and 5.4.3	P
4.7	Equipment for direct insertion into mains socket - outlets		N/A
4.7.2	Mains plug part complies with the relevant standard.....:		N/A
4.7.3	Torque (Nm) .....:		N/A
4.8	Products containing coin/button cell batteries	No lithium coin/button batteries used.	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery.....:		—

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.8.4	Battery Compartment Mechanical Tests .....:		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object.....:	(See Annex P)	P
5	**ELECTRICALLY-CAUSED INJURY**		P
5.2.1	Electrical energy source classifications.....:	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits	See below	P
5.2.2.2	Steady-state voltage and current.....:	See appended table 5.2)	P
5.2.2.3	Capacitance limits.....:	(See appended table 5.2)	P
5.2.2.4	Single pulse limits .....:		N/A
5.2.2.5	Limits for repetitive pulses .....:		N/A
5.2.2.6	Ringing signals .....:		N/A
5.2.2.7	Audio signals .....:		N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
5.3.2.2	Contact requirements		P
	a) Test with test probe from Annex V.....:	Test probe V.1, V.2 applied.	P
	b) Electric strength test potential (V) .....:		N/A
	c) Air gap (mm) .....:	Complied with the minimum distance requirement. (See appended table 5.4.2.2, 5.4.2.4 and 5.4.3.)	P
5.3.2.4	Terminals for connecting stripped wire	No such terminals.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	Hygroscopic materials are not used for insulating material.	P
5.4.1.3	Humidity conditioning .....:	(See sub-clause 5.4.8)	P
5.4.1.4	Maximum operating temperature for insulating materials .....:	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree .....:	Pollution degree 2.	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Certified sources of optical isolators used.	P
5.4.1.5.3	Thermal cycling	Certified sources of optical isolators used.	P
5.4.1.6	Insulation in transformers with varying dimensions		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.1.9	Insulating surfaces	considered	P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	Bobbin materials of all transformers are Phenolic that is accepted without further tests.	P
5.4.1.10.2	Vicat softening temperature..... :	(See appended table 5.4.1.10.2)	N/A
5.4.1.10.3	Ball pressure ..... :	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	P
5.4.2.3	Determining clearance using required withstand voltage ..... :	(See appended table 5.4.2.3)	P
	a) a.c. mains transient voltage ..... :	2500V	—
	b) d.c. mains transient voltage ..... :		—
	c) external circuit transient voltage..... :		—
	d) transient voltage determined by measurement ... :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	(See appended table 5.4.2.4)	P
5.4.2.5	Multiplication factors for clearances and test voltages ..... :		P
5.4.3	Creepage distances ..... :	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group ..... :	IIIb	—
5.4.4	Solid insulation		P
5.4.4.2	Minimum distance through insulation ..... :	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation	Alternative by 5.4.4.4.	N/A
5.4.4.4	Solid insulation in semiconductor devices	Complies with Clause G.12.	P
5.4.4.5	Cemented joints		P
5.4.4.6	Thin sheet material	See below	P
5.4.4.6.1	General requirements	See below	P
5.4.4.6.2	Separable thin sheet material	(See appended Table 5.4.9)	P
	Number of layers (pcs) ..... :	2	P
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material ..... :	(See appended Table 5.4.9)	N/A
5.4.4.6.5	Mandrel test		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz .....:	(See appended Table 5.4.4.9)	P
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (MΩ).....:		—
5.4.6	Insulation of internal wire as part of supplementary safeguard.....:		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning	Complied.	P
	Relative humidity (%).....:	95	—
	Temperature (°C) .....:	40	—
	Duration (h) .....:	120	—
5.4.9	Electric strength test.....:	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test		P
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test .....:		N/A
5.4.10.2.3	Steady-state test.....:		N/A
5.4.11	Insulation between external circuits and earthed circuitry .....:		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V).....:		—
	Nominal voltage U_{peak} (V).....:		—
	Max increase due to variation U_{sp} .....:		—
	Max increase due to ageing ΔU_{sa} .....:		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ .....:		—
5.5	Components as safeguards		P
5.5.1	General		P
5.5.2	Capacitors and RC units		P

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.2.1	General requirement	X-Cap. and Y-Cap. are IEC 60384-14 approval components and complied with Annex G.11.	P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....:	(See appended table 5.5.2.2)	P
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers		P
5.5.5	Relays		N/A
5.5.6	Resistors	(See Annex G.10)	P
5.5.7	SPD's		N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable.....:		N/A
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors	Protective conductor served as a supplementary safeguard to prevent accessible conductive parts from exceeding ES2 limits.	P
5.6.2.1	General requirements	No switch or overcurrent protective device in protective conductor.	P
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm^2) .....:		—
5.6.4	Requirement for protective bonding conductors	See below	P
5.6.4.1	Protective bonding conductors	Protective bonding wire complied with 5.6 and the minimum sizes in table 31.	P
	Protective bonding conductor size (mm^2). .....:	1.1	—
	Protective current rating (A) ..... :	20	—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		P
5.6.5.1	Requirement	Screws fixing earthed PCB trace to metal chassis for protective bonding. Size of screws is according with Table 32.	P
	Conductor size (mm^2), nominal thread diameter (mm). .....:	3.7 mm	P
5.6.5.2	Corrosion	Complied.	P

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.6	Resistance of the protective system	See below.	P
5.6.6.1	Requirements	See below.	P
5.6.6.2	Test Method Resistance (Ω).....:	(See appended table 5.6.6.2)	P
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks	Figure 5 of IEC 60990 was used in determining of the limit of ES2.	P
5.7.2.1	Measurement of touch current .....:	(See appended table 5.7.4)	P
5.7.2.2	Measurement of prospective touch voltage	(See appended table 5.7.2.2, 5.7.4)	P
5.7.3	Equipment set-up, supply connections and earth connections	Clause 4, 5.3 and 5.4 of IEC 60990: 1999 applied.	P
	System of interconnected equipment (separate connections/single connection) .....:	Single equipment.	—
	Multiple connections to mains (one connection at a time/simultaneous connections) .....:	Single equipment.	—
5.7.4	Earthed conductive accessible parts.....:	(See appended Table 5.7.4)	P
5.7.5	Protective conductor current	Protective conductor current does not exceed the ES2 limits.	P
	Supply Voltage (V).....:	240	—
	Measured current (mA).....:	0.58	—
	Instructional Safeguard.....:		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		-
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA).....:		-

6	**ELECTRICALLY- CAUSED FIRE**		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications		P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault ... :	(See appended table 6.2.2)	P

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.3	Power measurement for worst-case power source fault ..... :	(See appended table 6.2.2)	P
6.2.2.4	PS1 ..... :		N/A
6.2.2.5	PS2 ..... :	(See appended table 6.2.2)	P
6.2.2.6	PS3 ..... :	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS ..... :	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS ..... :	(See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials ..... :	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	The method “Control fire spread” is selected.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards	See 6.4.3.3.	N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions ..... :	(See appended table 6.4.3)	N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards ..... :	(See appended tables 4.1.2 and Annex G)	P
6.4.6	Control of fire spread in PS3 circuit	Providing fire enclosure for PS3 circuit.	P
6.4.7	Separation of combustible materials from a PIS	Providing fire enclosure for PS3 circuit.	P
6.4.7.1	General ..... :	(See tables 6.2.3.1 and 6.2.3.2)	P
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier	Providing fire enclosure for PS3 circuit.	P
6.4.8	Fire enclosures and fire barriers	See below.	P

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.1	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	Metal enclosure and V-0 Mylar sheet used as fire enclosure.	N/A
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	See below	P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....:	See table 6.4.8.3.3, 6.4.8.3.4 & P.2.2 for details.	P
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....:	See above	P
	Flammability tests for the bottom of a fire enclosure .....:		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) .....:	No door or cover in fire enclosure	N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....:	Metal or Min. V-0	P
6.5	Internal and external wiring		P
6.5.1	Requirements		P
6.5.2	Cross-sectional area (mm^2) .....:		—
6.5.3	Requirements for interconnection to building wiring .....:	(See Annex Q.)	N/A
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1	(See appended table Annex Q.1)	P

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions ..... :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010) .....:		—
7.6	Batteries.....:	(See Annex M)	N/A
8	**MECHANICALLY-CAUSED INJURY**		P
8.1	General		P
8.2	Mechanical energy source classifications	See ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE.	P
8.3	Safeguards against mechanical energy sources	See “OVERVIEW OF EMPLOYED SAFEGUARDS” table.	P
8.4	Safeguards against parts with sharp edges and corners	No sharp edges and corners in accessible area.	P
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts		N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard..... :		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks .....:	(See Annex F.4 and Annex K)	N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard.....:		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N) .....:		N/A
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test.....:	(See appended table 8.5.5.2)	N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.6	Stability		P
8.6.1	Product classification	MS2	P
	Instructional Safeguard.....:		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force .....:		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt.....:		—
8.6.4	Glass slide test		P
8.6.5	Horizontal force test (Applied Force).....:	Moved through any angle after being tilted 15°	P
	Position of feet or movable parts.....:		—
8.7	Equipment mounted to wall or ceiling		P
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....:	See below	P
8.7.2	Direction and applied force.....:	Test 2: 54.88N plied for each point (four directions plus inward and outward). Test 3: 1.2Nm applied.	P
8.8	Handles strength	No handles.	N/A
8.8.1	Classification		N/A
8.8.2	Applied Force .....:		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force .....:		—
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard.....:		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force .....:		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N) .....:		—
8.10.6	Thermoplastic temperature stability (°C).....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.11	Mounting means for rack mounted equipment		N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable *N* .....:		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas.....		N/A
	Button/Ball diameter (mm).....:		—
9	**THERMAL BURN INJURY**		P
9.2	Thermal energy source classifications	See below.	P
9.3	Safeguard against thermal energy sources	No safeguards are required for TS1.	N/A
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard .....:		N/A
10	**RADIATION**		P
10.2	Radiation energy source classification	See below.	P
10.2.1	General classification	The following parts are considered as RS1 without tests: - Indicating lights.	P
10.3	Protection against laser radiation		N/A
	Laser radiation that exists in the equipment:		—
	Normal, abnormal, single-fault.....:		N/A
	Instructional safeguard .....:		—
	Tool.....:		—
10.4	Protection against visible, infrared, and UV radiation		N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons.....:		N/A
10.4.1.b)	RS3 accessible to a skilled person.....:		N/A
	Personal safeguard (PPE) instructional safeguard.....:		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 . :		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions .....:	(See appended table B.3 & B.4)	N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque.....:		N/A
10.4.1.f)	UV attenuation.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.4.1.g)	Materials resistant to degradation UV .....:		N/A
10.4.1.h)	Enclosure containment of optical radiation.....:		N/A
10.4.1.i)	Exempt Group under normal operating conditions.....:		N/A
10.4.2	Instructional safeguard .....:		N/A
10.5	Protection against x-radiation		N/A
10.5.1	X- radiation energy source that exists equipment:	(See appended table B.3 & B.4)	N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards.....:		N/A
	Instructional safeguard for skilled person..... :		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation .....:		—
	Abnormal and single-fault condition ..... :	(See appended table B.3 & B.4)	N/A
	Maximum radiation (pA/kg)..... :		N/A
10.6	Protection against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A)..... :		N/A
	Output voltage, unweighted r.m.s..... :		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards ..... :		N/A
	Equipment safeguard prevent ordinary person to RS2..... :		—
	Means to actively inform user of increase sound pressure..... :		—
	Equipment safeguard prevent ordinary person to RS2..... :		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output..... :		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A)..... :		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A)..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.2	Normal Operating Conditions	See below	P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers..... :	For internal speakers, adjusted to the maximum volume while testing.	P
B.2.3	Supply voltage and tolerances	Considered	P
B.2.5	Input test..... :	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements..... :	(See appended table B.3)	P
B.3.2	Covering of ventilation openings	(See appended table B.3)	P
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector..... :		N/A
B.3.5	Maximum load at output terminals ..... :	(See appended table B.3)	P
B.3.6	Reverse battery polarity		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	(See appended table B.3)	P
B.3.8	Safeguards functional during and after abnormal operating conditions	Abnormal operating condition does not lead to a single fault condition, all safeguards remain effective. After restoration of normal operating conditions, all safeguards comply with applicable requirements.	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited..... :	(See appended table B.4)	P
B.4.3	Motor tests		N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature ..... :	(See Clause G.5)	N/A
B.4.4	Short circuit of functional insulation	For traces before fuse, comply with the clearance/creepage for basic insulation, others are considered to perform short-circuited during the tests.	P
B.4.4.1	Short circuit of clearances for functional insulation	See above	P
B.4.4.2	Short circuit of creepage distances for functional insulation	See above	P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnect of passive components		P
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions ... :		N/A
C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
D	**TEST GENERATORS**		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V) .....:		—
	Rated load impedance (Ω) .....:		—
E.2	Audio amplifier abnormal operating conditions		N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	General requirements		P
	Instructions – Language .....:	English.	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	The equipment marking is provided and is readily visible in operator access area.	P
F.3.2	Equipment identification markings	See below.	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.2.1	Manufacturer identification .....:	See page 4	—
F.3.2.2	Model identification .....:	See page 2	—
F.3.3	Equipment rating markings	See below.	P
F.3.3.1	Equipment with direct connection to mains	See below.	P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage.....:	See page 4	—
F.3.3.4	Rated voltage .....:	See page 4	—
F.3.3.5	Rated frequency .....:	See page 4	—
F.3.3.6	Rated current or rated power .....:	See page 4	—
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings..... :		N/A
F.3.5.2	Switch position identification marking ..... :		N/A
F.3.5.3	Replacement fuse identification and rating markings..... :	Primary F9901, T5AL/250V are marked adjacent to the fuse	P
F.3.5.4	Replacement battery identification marking ..... :		N/A
F.3.5.5	Terminal marking location		P
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I Equipment	See below	P
F.3.6.1.1	Protective earthing conductor terminal	Appliance inlet is provided. The symbol IEC 60417-5019 was located on appliance inlet.	P
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking .....:		—
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking	See below	P
F.3.10	Test for permanence of markings	Marking is durable and legible. The marking plate has no curling and is not able to be removed easily.	P
F.4	Instructions		P

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Clause	Requirement + Test	Result - Remark	Verdict
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use	Provided in user manual.	P
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard	The instruction is provided in the user's manual.	N/A
	g) Protective earthing conductor current exceeding ES 2 limits	Not exceed the ES2 limits.	N/A
	h) Symbols used on equipment	Graphical symbols not used as an instructional safeguard.	N/A
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards	No instructional safeguard is referenced in this test report.	N/A
	Where "instructional safeguard" is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A
G	**COMPONENTS**		P
G.1	**Switches**		P
G.1.1	General requirements	Use approve switch, see table 4.1.2 for detail	P
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	**Relays**		N/A
G.2.1	General requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	**Protection Devices**		P
G.3.1	Thermal cut-offs		N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691		N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H) ..... :		—
	Single Fault Condition ..... :		—
	Test Voltage (V) and Insulation Resistance (Ω). :		—
G.3.3	PTC Thermistors		N/A
G.3.4	Overcurrent protection devices		P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions.....:		N/A
G.4	**Connectors**		P
G.4.1	Spacings	The appliance inlet complied with IEC 60320-1.	P
G.4.2	Mains connector configuration .....:	The appliance inlet complied with IEC 60320-1.	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		P
G.5	**Wound Components**		P
G.5.1	Wire insulation in wound components.....	Bobbin of T9102 used as separation for insulation between primary windings and secondary windings. Approved triple insulated wire used for winding of transformers	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		P
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) .....:		—
	Temperature (°C) .....:		—
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	**Transformers**		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....:	Meet the requirements in G.5.3.2 and G.5.3.3.	P

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Position.....:	T9102	—
	Method of protection .....:	Overcurrent protection.	—
G.5.3.2	Insulation	See attachment Transformer table.	N/A
	Protection from displacement of windings.....:	Displacement of windings is unlikely.	—
G.5.3.3	Overload test ..... :	(See appended table B.3 & B.4)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment.	P
G.5.3.3.2	Winding Temperatures testing in the unit	(See appended table B.3 & B.4)	P
G.5.3.3.3	Winding Temperatures - Alternative test method	Meet the requirements in G.5.3.2 and G.5.3.3.	N/A
G.5.4	**Motors**		N/A
G.5.4.1	General requirements		N/A
	Position .....:		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) .....:		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V).....:		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....:		N/A
	Electric strength test (V).....:		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature .....:		N/A
	Electric strength test (V) .....:		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) .....:		N/A
	Electric strength test (V).....:		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage .....:		—
G.6	**Wire Insulation**		P
G.6.1	General		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	**Mains supply cords**		N/A
G.7.1	General requirements		N/A
	Type.....:		—
	Rated current (A).....:		—
	Cross-sectional area (mm^2), (AWG)..... :		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) .....:		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)....:		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry ..... :	(See appended table 5.4.11.1)	N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) .....:		—
	Diameter (m) .....:		—
	Temperature (°C) .....:		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	**Varistors**		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test .....:	(See appended table B.3)	N/A
G.8.3.3	Temporary overvoltage .....:	(See appended table B.3)	N/A
G.9	**Integrated Circuit (IC) Current Limiters**		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.		N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....:		—
G.9.1 d)	IC limiter output current (max. 5A) .....:		—
G.9.1 e)	Manufacturers' defined drift .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	**Resistors**		P
G.10.1	General requirements	Approved bleeding resistors used. (See appended table 4.1.2)	P
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	**Capacitor and RC units**		P
G.11.1	General requirements	X-Capacitors and Y-Capacitors used as safeguard and complied with IEC/EN 60384-14. (See appended table 4.1.2)	P
G.11.2	Conditioning of capacitors and RC units	At least 21 days at 40 ± 2°C and 93±3% RH.	P
G.11.3	Rules for selecting capacitors	The selection followed with tables G.9 and G.12.	P
G.12	**Optocouplers**		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....:	The optocouplers used in the equipment are complied with IEC/EN 60747-5-2 that complied with the requirements of IEC 60747-5-5. (see appended table 4.1.2)	P
	Type test voltage Vini .....:	See above.	—
	Routine test voltage, Vini,b .....:	See above.	—
G.13	**Printed boards**		P
G.13.1	General requirements	See below.	P
G.13.2	Uncoated printed boards	(see appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction).....:		—

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation.....:	(See appended table 5.4.4.5)	N/A
	Number of insulation layers (pcs) .....:		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements ..... :	(See G.13)	N/A
G.15	**Liquid filled components**		N/A
G.15.1	General requirements		N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	**IC including capacitor discharge function (ICX)**		P
a)	Humidity treatment in accordance with sc 5.4.8 – 120 hours	Use approve IC, see table 4.1.2 for detail	P
b)	Impulse test using circuit 2 with Uc = to transient voltage .....:		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage .....:		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance .....:		—
D3)	Resistance .....:		—
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	General		N/A
H.2	Method A		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) .....:		—
H.3.1.2	Voltage (V) .....:		—
H.3.1.3	Cadence; time (s) and voltage (V) .....:		—
H.3.1.4	Single fault current (mA):.....:		—
H.3.2	Tripping device and monitoring voltage .....:		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) .....:		—
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		P
	General requirements		P
K	**SAFETY INTERLOCKS**		N/A
K.1	General requirements		N/A
K.2	Components of safety interlock safeguard mechanism	(See Annex G)	N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance .....:	(See appended table B.4)	N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method .....:		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) .....:		N/A
K.7.2	Overload test, Current (A) .....:		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test .....:	(See appended table 5.4.9)	N/A
L	**DISCONNECT DEVICES**		N/A
L.1	General requirements		N/A
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		N/A
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method) .. :		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance .....:		N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature .....:		—
M.4.2.2 b)	Single faults in charging circuitry .....:		—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) ..... :		N/A
M.6.2	Leakage current (mA) ..... :		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume *Vz* (m^3/s)..... :		—
M.8.2.3	Correction factors..... :		—
M.8.2.4	Calculation of distance *d* (mm) ..... :		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) ..... :		N/A
N	**ELECTROCHEMICAL POTENTIALS**		P
	Metal(s) used ..... :	Pollution degree considered	—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		P
	Figures O.1 to O.20 of this Annex applied..... :	Considered	—
P	**SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS**		P
P.1	General requirements	See below.	P
P.2.2	Safeguards against entry of foreign object	External plastic enclosure and internal metal chassis are provided as internal barrier.	P
	Location and Dimensions (mm) ..... :	See attachment: Measurement Section for the details.	—

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Clause	Requirement + Test	Result - Remark	Verdict
P.2.3	Safeguard against the consequences of entry of foreign object	See above.	P
P.2.3.1	Safeguards against the entry of a foreign object		P
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts ..... :		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) ..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts	Adhesive for mylar.	P
P.4.2 a)	Conditioning testing		P
	Tc (°C) ..... :	102	—
	Tr (°C) ..... :	100	—
	Ta (°C) ..... :	(See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	—
P.4.2 b)	Abrasion testing ..... :	(See G.13.6.2)	N/A
P.4.2 c)	Mechanical strength testing ..... :	(See Annex T)	N/A
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		P
Q.1	Limited power sources		P
Q.1.1 a)	Inherently limited output	(See appended table Annex Q.1)	N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		P
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		P
Q.1.2	Compliance and test method		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... :		—
	Current limiting method ..... :		—
R	**LIMITED SHORT CIRCUIT TEST**		N/A
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
R.3	Test method Supply voltage (V) and short-circuit current (A)). .....:		N/A
S	**TESTS FOR RESISTANCE TO HEAT AND FIRE**		P
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	~~Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W~~ Flammability test for fire enclosure materials of equipment with a steady-state power exceeding 4000 W		N/A
	Samples, material .....:		—
	Wall thickness (mm).....:		—
	Conditioning (test condition), (°C).....:		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
T	**MECHANICAL STRENGTH TESTS**		P
T.1	General requirements		P
T.2	Steady force test, 10 N .....:	(See appended table T.2)	P
T.3	Steady force test, 30 N .....:	(See appended table T.3)	P
T.4	Steady force test, 100 N .....:		N/A
T.5	Steady force test, 250 N .....:	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P
	Fall test		P
	Swing test		P
T.7	Drop test .....:		N/A
T.8	Stress relief test .....:	(See appended table T.8)	P
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J).....:		—
	Height (m) .....:		—
T.10	Glass fragmentation test .....:		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm) .....:		—
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		N/A
U.1	General requirements		N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen.....:		N/A
V	**DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)**		P
V.1	Accessible parts of equipment		P
V.2	Accessible part criterion		P

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	**TABLE: List of critical components**	P

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Cord set: According to the manufacturer's declaration, the unit will be supplied with a power attachment cord and plug which meet the national requirements which have been approved to relevant national and international standards.					
Power cord set (Saudi Arabia) (Optional)					
Power plug (13A)	Honglin	HL-044	13A/250V	BS 1363 SASO 2203:2018	Intertek CN-GSOG-2016011R5
Alt.	Honglin	HL-044s	13A/250V	BS 1363-1 SASO 2203:2018	Intertek CN-GSOG-20171110R2
Alt.	ASAP	A12-0136-AC2, A12-0137-AC2	13A/250V	BS 1363 SASO 2203:2018	CVC certificate no. RZKSA181053626-M1
Alt.	SANGLE	DTII-3P-22	13A/250V	BS 1363 SASO 2203:2018	CVC certificate no. RZKSA201159813
Alt.	I-SHENG	SP-62, SP-65	13A/250V	BS 1363 SASO 2203:2018	CVC certificate no. 2017GTC3223027128-M3(R1) CVC certificate no. RZKSA191060425-M1
Alt.	Interchangeable	Interchangeable	13A/250V	BS 1363 SASO 2203:2018	EU or UK certification mark
Power connector (13A)	Volex	VSC19	13A/250V	IEC/EN 60320-1	ASTA
Alt.	Interchangeable	Interchangeable	13A/250V	IEC/EN 60320-1:2015	EU certification mark
Power plug (10A)	Fund Resources	BS-01J	10A/250V	BS1363 SASO 2203:2018	Intertek CN-GSOG-20180506
Alt.	Honglin	HL-044	10A/250V	BS 1363 SASO 2203:2018	Intertek CN-GSOG-2016011R5

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	Honglin	HL-044s	10A/250V	BS 1363-1 SASO 2203:2018	Intertek CN-GSOG-20171110R2
Alt.	ASAP	A12-0136-AC2, A12-0137-AC2	10A/250V	BS 1363 SASO 2203:2018	CVC certificate no. RZKSA181053626-M1
Alt.	SANGLE	DTII-3P-22	10A/250V	BS 1363 SASO 2203:2018	CVC certificate no. RZKSA201159813
Alt.	I-SHENG	SP-62, SP-65	10A/250V	BS 1363 SASO 2203:2018	CVC certificate no. 2017GTC3223027128-M3(R1) CVC certificate no. RZKSA191060425-M1
Alt.	Interchangeable	Interchangeable	10A/250V	BS 1363 SASO 2203:2018	EU or UK certification mark
Power connector (10A)	Honglin	HL-026, HL-029, HL-029L	10A/250V	IEC/EN 60320-1	ENEC 35-101702
Alt.	Honglin	HL-026S	10A/250V	IEC/EN 60320-1	ENEC 35-100964
Alt.	ASAP	A12-0012-AC2, A12-0056-AC2	10A/250V	IEC/EN 60320-1	VDE 40048182
Alt.	I-SHENG	IS-14	10A/250V	IEC/EN 60320-1	Intertek Licence No. 443 ENEC/FI 2017044 284423-3
Alt.	Interchangeable	Interchangeable	10A/250V	IEC/EN 60320-1:2015	EU certification mark
Power plug (7A)	Fund Resources	BS-01J	7A/250V	BS 1363 SASO 2203:2018	Intertek CN-GSOG-20180506
Alt.	Interchangeable	Interchangeable	7A/250V	BS 1363 SASO 2203:2018	EU or UK certification mark
Power connector (7A)	Volex	VSC19	7A/250V	IEC/EN 60320-1	ASTA

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	Interchangeable	Interchangeable	7A/250V	IEC/EN 60320-1:2015	EU certification mark
Power plug (6A)	Fund Resources	BS-01J	6A/250V	BS 1363 SASO 2203:2018	Intertek CN-GSOG-20180506
Alt.	Interchangeable	Interchangeable	6A/250V	BS 1363 SASO 2203:2018	EU or UK certification mark
Power connector (6A)	Volex	VSC19	6A/250V	IEC/EN 60320-1	ASTA
Alt.	Interchangeable	Interchangeable	6A/250V	IEC/EN 60320-1:2015	EU or UK certification mark
Power plug (5A)	ASAP	A12-0136-AC2, A12-0137-AC2	5A/250V	BS 1363 SASO 2203:2018	CVC certificate no. RZKSA181053626-M1
Alt.	Honglin	HL-044	5A/250V	BS 1363 SASO 2203:2018	Intertek CN-GSOG-2016011R5
Alt.	Honglin	HL-044s	5A/250V	BS 1363-1 SASO 2203:2018	Intertek CN-GSOG-20171110R2
Alt.	SANGLE	DTII-3P-22	5A/250V	BS 1363 SASO 2203:2018	CVC certificate no. RZKSA201159813
Alt.	I-SHENG	SP-62, SP-65	5A/250V	BS 1363 SASO 2203:2018	CVC certificate no. 2017GTC3223027128-M3(R1) CVC certificate no. RZKSA191060425-M1
Alt.	Interchangeable	Interchangeable	5A/250V	BS 1363 SASO 2203:2018	EU or UK certification mark
Power connector (5A)	Volex	VSC19	5A/250V	IEC/EN 60320-1	ASTA
Alt.	Interchangeable	Interchangeable	5A/250V	IEC/EN 60320-1:2015	EU certification mark

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Power plug (3A)	ASAP	A12-0136-AC2, A12-0137-AC2	3A/250V	BS 1363 SASO 2203:2018	CVC certificate no. RZKSA181053626-M1
Alt.	SANGLE	DTII-3P-22	3A/250V	BS 1363 SASO 2203:2018	CVC certificate no. RZKSA201159813
Alt.	I-SHENG	SP-62, SP-65	3A/250V	BS 1363 SASO 2203:2018	CVC certificate no. 2017GTC3223027128-M3(R1) CVC certificate no. RZKSA191060425-M1
Alt.	Interchangeable	Interchangeable	3A/250V	BS 1363 SASO 2203:2018	EU or UK certification mark
Power connector (3A)	Volex	VSC19	3A/250V	IEC/EN 60320-1	ASTA
Alt.	Interchangeable	Interchangeable	3A/250V	IEC/EN 60320-1:2015	EU certification mark
Power plug (2.5A)	Volex	MP5004A, DLUK10S3, VNUK13A3, UK13A2, UK13A3, VPUK13A3	2.5A/250V	BS 1363 SASO 2203:2018	ASTA
Alt.	Interchangeable	Interchangeable	2.5A/250V	BS 1363 SASO 2203:2018	EU or UK certification mark
Power connector (2.5A)	ASAP	A12-0011-AC2, A12-0055-AC2	2.5A/250V	IEC/EN 60320-1	VDE40029487
Alt.	I-SHENG	IS-033	2.5A/250V	IEC/EN 60320-1	Intertek Licence No. 736 ENEC/FI 2017007
Alt.	I-SHENG	IS-034	2.5A/250V	IEC/EN 60320-1	Intertek Licence No. 444 ENEC/FI 2016048

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	Interchangeable	Interchangeable	2.5A/250V	IEC/EN 60320-1:2015	EU certification mark
Power cord	Honglin	H03VV-F, H05VV-F	3x0.75 mm² 3x0.75-1.5 mm²	EN 50525-2-11	VDE40022785
Alt.	Honglin	H03VV-F, H05VV-F	3x0.75 mm² 3x0.75-1.5 mm²	EN 50525-2-11	VDE40022785
Alt.	Fund Resources	H03VV-F, H05VV-F	3x0.5…0.75 mm² 3x0.75…2.5 mm²	EN 50525-2-11	VDE40031233
Alt.	ASAP	H03VV-F, H05VV-F	3x0.5…0.75 mm² 3x0.75…2.5 mm²	EN 50525-2-11	VDE40027103
Alt.	CHANGZHOU HONGCHANG ELECTRONICS CO LTD	H03VV-F, H05VV-F	3x0.5…0.75 mm² 3x0.75…2.5 mm²	EN 50525-2-11	VDE124978
Alt.	I-SHENG	H03VV-F, H05VV-F	3x0.5…0.75 mm² 3x0.75…2.5 mm²	EN 50525-2-11	VDE 40015762
Alt.	Interchangeable	Interchangeable	3x0.5…0.75 mm² 3x0.75…2.5 mm²	EN 50525-2-11	EU certification mark
Internal metal enclosure	Interchangeable	Interchangeable	Metal, thickness 0.8mm	IEC/EN 62368-1	None
Plastic enclosure	ORINKO	ABS-3070H, HIPS-2000, ABS-40*(*=0~10), ABS900F23	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E328304 and test with appliance
Alt.	SABIC	C6600	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E207780 and test with appliance
Alt.	Chi mei	PA-757(+), PC345(+), PA-756S	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E56070 and test with appliance
Alt.	LG	HF-350, HF-380, SE-750, XG-568, XG-569C, GP-1000L, SE885, AF-365, GN-1002F(m)	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E67171 and test with appliance

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	LOTTE CHEMICAL CORPORATION	SD-0150(+), BF-0677(+), BF-0675(+), BF-0670F, GC-0700(+), GC-0750(+), HS-7000RA, LX-0951(+), LX-0957(+), HG-0760(+), HR-1360(+), SD-0150T, ABF-0200E, NH-1027HF, NH-1027(+)	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E115797 and test with appliance
Alt.	Basf	GP-35, GP-22	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E41871 and test with appliance
Alt.	Grand	D-150	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E88637 and test with appliance
Alt.	KingFa	5197, RS-900, GAR-011 C, GAR-011(L65), GAR-011(L85), GAR-011(HG6), RS-300, RS-400, CK-100, CK-55111, RD-900, HP-126, CK-61506	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E171666 and test with appliance
Alt.	Haier	HRABS-RS, HRABS-HG	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E230779 and test with appliance
Alt.	DOOSAN CORPORATION ELECTRO-MATERIALS BG	DS-1107A, DS-1202G, DS-7106	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E103670 and test with appliance

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	TOTAL PETROCHEMICALS SOUTH EAST ASIA PTE LTD	3441, 260-XX	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E314268 and test with appliance
Alt.	WISTRON ADVANCED MATERIALS (KUNSHAN) CO LTD	GA35, NC30, GA65, GA85, GC(t) (t) – Replace the one, two, three or four numbers and/or letters to denote to serial number	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E359575 and test with appliance
Alt.	WOTE	2100	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E310240 and test with appliance
Alt.	UNIC	UR-3006+, UR-200+ (+: A to Z), UP700	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E135175 and test with appliance
Alt.	PONTEX	AFE5000N, AFE5100N, 9004BK	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E205938 and test with appliance
Alt.	CHI LIN	GA1535	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E177071 and test with appliance
Alt.	FUHEN	FH-HIPS-568	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E234833 and test with appliance
Alt.	GON	GON ABS 2115, ABS21(xx)G-A, ABS2030A, ABS20(xx)B	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E330547 and test with appliance
Alt.	DONGGUAN HINGLONG PLASTIC TECHNOLOGY CO LTD	HL-ABS-PCR85	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E345434 and test with appliance

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	GUO HENG	YOUHO(1302)(B), YOUHO(1303)(B), YOUHO(1304)(B), YOUHO(1333)(B), YOUHO(1303)(OP), YOUHO(####)(Y) YOUHO-1303B, YOUHO1312B	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E471190 and test with appliance
Alt.	Chongqing Gengye New Materials Technology Co Ltd	GU-022	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E514505 and test with appliance
Alt.	Interchangeable	Interchangeable	HB or better, 60℃, thickness 1.4mm	UL 94:2016 IEC 60695-11-10:2013(2nd Edition)	EU certification mark
Base stand (optional)	LOTTE ADVANCED MATERIALS CO LTD	SD-0150(+)	HB or better, 60℃, thickness 1.4mm	UL 94 IEC/EN 62368-1	UL E115797 and test with appliance
Alt.	Interchangeable	Interchangeable	HB or better, 60℃, thickness 1.4mm	UL 94:2016 IEC 60695-11-10:2013(2nd Edition)	UL or other EU certification
PCB	Three Sun	SMS-1	V-0, 105℃	UL 796 IEC/EN 62368-1	UL E217670 and test with appliance
Alt.	Interchangeable	Interchangeable	V-1 or better Min. 105℃	UL 796:2016 IEC 60695-11-10:2013(2nd Edition)	UL or other EU certification
Insulation Sheet (between power board and LCD panel)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B; KLX FRPC-83; KLX FRPC-1880 series KLX FRPC-1860 series KLX FRPC-1890 series	Polycarbonate, thickness: 0.40mm min. V-0, 125℃	UL 94 IEC/EN 62368-1	UL E315185 Tested with appliance

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	Polycarbonate, thickness: 0.40mm min. V-0, 125℃	UL 94 IEC/EN 62368-1	UL E357515 Tested with appliance
Insulation Sheet (between power board and metal cover)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B; KLX FRPC-83; KLX FRPC-1880 series KLX FRPC-1860 series KLX FRPC-1890 series	Polycarbonate, thickness: 0.40mm min. V-0, 125℃	UL 94 IEC/EN 62368-1	UL E315185 Tested with appliance
Alt	SHENZHEN TEEBON PLASTICS TECHNOLOGY CO LTD	TB-FR65, TB-FR63, TB-FR60, TB-FR1, TB-FR60Y, TB-FR70F, TB-FR70, TB-FR183, TB-FR700, TB-FR83	Polycarbonate, thickness: 0.40mm min. V-0, 125℃	UL 94 IEC/EN 62368-1	UL E357515 Tested with appliance
Alt	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117ECOB, DFR700 series, DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC, DX10, DFR3A(d)	Polycarbonate, thickness: 0.40mm min. V-0, 80℃	UL 94 IEC/EN 62368-1	UL E199019 Tested with appliance
Alt	KunShan Dobesty Optoelectronic Materials Co Ltd	PC9821B, PC9832B, PC9842B, PC9821BK1, PC9832BK1, PC9821W1, PC98MNb1, DB98HD	Polycarbonate, thickness: 0.40mm min. V-0, 80℃	UL 94 IEC/EN 62368-1	UL E339070 Tested with appliance
Alt	SUZHOU OMAY OPTICAL MATERIALS CO LTD	SE42B SE42B-F	Polycarbonate, thickness: 0.40mm min. V-0, 80℃	UL 94 IEC/EN 62368-1	UL E249605 Tested with appliance

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity 1)
Alt	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX FRPC-870B, KLX FRPC-1860B, KLX FRPC-83, KLX FRPC-1880 series	Polycarbonate, thickness: 0.40mm min. V-0, 80℃	UL 94 IEC/EN 62368-1	UL E315185 Tested with appliance
Alt	JINGMEN GORUN TECHNOLOGY CO LTD	HF70	Polycarbonate, thickness: 0.40mm min. V-0, 80℃	UL 94 IEC/EN 62368-1	UL E305163 Tested with appliance
Alt	SHENZHEN TEESUN TECHNOLOGY CO LTD	TS-FR370DL, TS-FR370F, TS-FR383H, TS-FR360H, TS-FR1370	Polycarbonate, thickness: 0.40mm min. V-0, 80℃	UL 94 IEC/EN 62368-1	UL E329660 Tested with appliance
Alt	Sichuan Longhua Film Co Ltd	PC-770 series	Polycarbonate, thickness: 0.40mm min. V-0, 80℃	UL 94 IEC/EN 62368-1	UL E254551 Tested with appliance
Adhesive (located on the metal chassis)	SYMBIO	DS50-A; DS50L	100℃, thickness: 0.05mm min.	UL 94 IEC/EN 62368-1	UL: E315185 and tested with appliance
Alt	3M CHINA CO LTD	55236; 94489A, 55230,	80℃, thickness: 0.05mm min.	UL 94 IEC/EN 62368-1	UL: E256906 and tested with appliance
Alt	3M CHINA CO LTD	9495MP	80℃, thickness: 0.05mm min.	UL 94 IEC/EN 62368-1	UL: MH26206 and tested with appliance
Alt	XIAMEN LABAO OPTICS & ELECTRONICS CO LTD	TD-10, LA9120	80℃, thickness: 0.05mm min.	UL 94 IEC/EN 62368-1	UL: E349099 and tested with appliance
Alt	NITTO DENKO CORP	GA835	80℃, thickness: 0.05mm min.	UL 94 IEC/EN 62368-1	UL:MH13557 and tested with appliance
Alt	TESA SE	68646	80℃, thickness: 0.05mm min.	UL 94 IEC/EN 62368-1	UL:MH25809 and tested with appliance
Alt	DEXERIALS CORP	G4000	80℃, thickness: 0.05mm min.	UL 94 IEC/EN 62368-1	UL:MH15431 and tested with appliance

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
LCD Panel	TPV	TPM270********** ****** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	TPV	TPT270********** ***** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	M270********** *** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	LM270********** **** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	AUO	P270********** ** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	L&T	LM270********** **** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	LGD	LM270********** **** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	INNOLUX	M270********** *** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	PANDA	LM270********** **** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	BOE	MV270********** **** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	SHARP	LQ270********** **** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	SAMSUNG	LTM270********** ****** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Alt.	BOE	ME270********** **** (* can be A to Z, a to z, 0 to 9, '+', '–', '\', '/', '.' or blank)	27” with LED backlight	IEC/EN 62368-1	Tested with appliance
Power Supply: power board 715GB656 by TOP Victory					
AC-Inlet (CN9901)	Solteam	ST-01	10A, 250Vac	IEC/EN 60320-1, ANSI/UL 498	VDE 40015691 UL E200241
Alt.	Zhang Jia Gang-Hua Jie	SA-4S	10A, 250Vac	IEC/EN 60320-1, ANSI/UL 498	VDE 40003610 UL E154342
Alt.	Rong Feng Industrial Co Ltd	SS-120 SS-7B	10A, 250Vac	IEC/EN 60320-1, ANSI/UL 498	VDE 40028101 UL E102641
Alt.	DELIKANG/Douling	CDJ-3	10A, 250Vac	IEC/EN 60320-1, ANSI/UL 498	VDE 40010513 UL E217394
Alt.	DELIKANG/Douling	CDJ-3-1	10A, 250Vac	IEC/EN 60320-1, ANSI/UL 498	VDE 40015913 UL E217394
Alt.	Inalways	0707-1; 0711-2; 0714	10A, 250Vac	IEC/EN 60320-1, ANSI/UL 498	VDE 40007115 UL E94191
Alt.	TECX	TU-301-A; TU-301-AP; TU-301-S; TU-301-SP	10A, 250Vac	IEC/EN 60320-1, ANSI/UL 498	VDE 40025582 UL E220004
Alt.	Yueqing Hongchang	DB-14 series	10A, 250Vac	IEC/EN 60320-1, ANSI/UL 498	VDE 40028645 UL E327347
Alt.	Interchangeable	Interchangeable	10A, 250Vac	IEC/EN 60320-1	EU certification mark

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Power switch (SW9901) (optional)	Rong Feng	RF-1003	10A, 250Vac	IEC/EN 61058-1, ANSI/UL 1054	VDE 40030309 UL E94138
Alt.	Solteam Electronics Co., Ltd.	OR-L, OP-P	6A, 250Vac	IEC/EN 61058-1, ANSI/UL 1054	ENEC/FI: 2009033 UL E148157
Alt.	Solteam Electronics Co., Ltd.	MR-22 series	12A, 250Vac	IEC/EN 61058-1, ANSI/UL 1054	ENEC/FI: 2009069 A1 UL E148157
Alt.	Solteam Electronics Co., Ltd.	MR-21S	6A, 250Vac	IEC/EN 61058-1, ANSI/UL 1054	ENEC/FI: 2009069 A1 UL E148157
Alt.	YUEQING HONGCHANG RADIO CO LTD	RT -011	6A, 250Vac	IEC/EN 61058-1, ANSI/UL 1054	TUVRheinland: Certificate No:R 50421910 0001 UL E486986
Fuse (F9901)	Cooper Bussmann LLC	SR-5 Series	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE 122052 UL E19180
Alt.	Littelfuse, Inc. Wickmann	382 Series	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40018249 UL E67006
Alt.	Littelfuse, Inc. Wickmann	392	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 126983 UL 67006
Alt.	Cooper Bussmann LLC	SS-5 Series	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40015513 UL E19180
Alt.	Conquer	MET	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40017157 UL E82636
Alt.	Conquer	MST	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40017118 UL E82636
Alt.	Ever Island Electric Co., Ltd. and Walter Electric	2010 Serie(s)	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40009570 UL E220181
Alt.	Ever Island Electric Co., Ltd. and Walter Electric	2000	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40018790 UL E220181

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Fuse (F701, F702, F703) for LPS	Cooper Bussmann LLC	SR-5 Series	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE 122052 UL E19180
Alt.	Littelfuse, Inc. Wickmann	382 Series	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40018249 UL E67006
Alt.	Littelfuse, Inc. Wickmann	392	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 126983 UL 67006
Alt.	Cooper Bussmann LLC	SS-5 Series	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40015513 UL E19180
Alt.	Conquer	MET	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40017157 UL E82636
Alt.	Conquer	MST	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40017118 UL E82636
Alt.	Ever Island Electric Co., Ltd. and Walter Electric	2010 Serie(s)	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40009570 UL E220181
Alt.	Ever Island Electric Co., Ltd. and Walter Electric	2000	T5A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-2 ANSI/UL 248-1, ANSI/ UL 248-14	VDE 40018790 UL E220181
Y-cap (C9904, C9905) (Y2 or Y1 type) (optional)	TDK	CD	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 124321 UL E37861
Alt.	TDK	CS	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 122006 UL E37861
Alt.	Murata	KH	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40002796 UL E37921
Alt.	Murata	KX	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40002831 UL E37921

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	Walsin (Pan Overseas)	AC	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40001829 UL E146544
Alt.	Walsin (Pan Overseas)	AH	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40001804 UL E146544
Alt.	Hongming	F	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40036246 UL E154899
Alt.	Haohua	CT7	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40013601 UL E233106
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 135256 UL E145038
Alt.	Success Electronics Co., Ltd.	SE	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 118218 UL E114280
Alt.	Success Electronics Co., Ltd.	SB	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 121379 UL E114280
Alt.	Kunshan Wansheng	CT7	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40012143 UL E249006
Alt.	Interchangeable	Interchangeable	Max. 470pF, 250Vac, 85°C min.	IEC/EN 60384-14	EU certification mark
Y-cap (C9903, C9909, C9910) (Y1 type) (optional)	TDK	CD	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 124321 UL E37861
Alt.	TDK	CS	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 122006 UL E37861
Alt.	Murata	KH	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40002796 UL E37921
Alt.	Murata	KX	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40002831 UL E37921
Alt.	Walsin (Pan Overseas)	AC	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40001829 UL E146544

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	Walsin (Pan Overseas)	AH	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40001804 UL E146544
Alt.	Hongming	F	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40036246 UL E154899
Alt.	Haohua	CT7	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40013601 UL E233106
Alt.	Yinan Don's Electronic Component Co., Ltd.	CT81	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 135256 UL E145038
Alt.	Success Electronics Co., Ltd.	SE	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 118218 UL E114280
Alt.	Success Electronics Co., Ltd.	SB	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 121379 UL E114280
Alt.	Kunshan Wansheng	CT7	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14 UL1414	VDE 40012143 UL E249006
Alt.	Interchangeable	Interchangeable	Max. 680pF, 250Vac, 85°C min.	IEC/EN 60384-14	EU certification mark
X- Cap. (C9901, C9902) (X2 or X1 type) (optional)	Ultra Tech Xiphi	HQX	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	VDE 40015608 UL E183780
Alt.	Europtronic	MPX	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	VDE 40018238 UL E211347
Alt.	Europtronic	MPX2	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	VDE 40025981 UL E211347
Alt.	Xiamen Faratronic	MKP62	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	VDE 40000358 UL E186662
Alt.	KEMET ELECTRONICS ITALIA SRL	R.46	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	ENEC V4413 UL E97797
Alt.	Liow Gu	GS-L	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	VDE 101345 UL E186321

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	EPCOS	B3292#	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	VDE 40010694 UL E97863
Alt.	Nanjing Tengen Rongguangda Electronics (Group) Co., Ltd.	MKP	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	VDE 40028680 UL E200596
Alt.	NANJING TENGEN RONG GUANG DA ELECTRONIC SALES CO LTD	MKP	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14 UL1414	VDE 40049725 UL E502081
Alt.	Interchangeable	Interchangeable	Max. 0.47µF, 250Vac min.; 110°C min.	IEC/EN 60384-14	EU certification mark
Photo Coupler (U9802, U9104)	Sharp	PC 123	Ext. > 8.0mm int.cr=thermal cycling 3) Di> 0.4mm AC 3000V, min. 100°C	EN 60747-5-2 IEC/EN 62368-1	VDE 40008087 UL E64380 Nemko P09211293
Alt.	Vishay Semiconductor	TCET 1103	Ext.= 7.7mm Int.= 6.0mm Di= 0.5mm AC 3000V, min. 100°C	EN 60747-5-2 IEC/EN 62368-1	VDE 115687 UL E76222 F1 25155
Alt.	Everlight	EL817, EL817M	Ext.= 7.7mm Int.= 6.0mm Di= 0.5mm AC 3000V, min. 100°C	EN 60747-5-2 IEC/EN 62368-1	VDE 132249 UL E214129 Nemko P11214765/A1
Alt.	TOSHIBA	TLP781, TLP781F	Ext.> 8.0mm Int.> 5.0mm3) Di> 0.5mm AC 3000V, min. 100°C	EN 60747-5-2 IEC/EN 62368-1	VDE 40021173 UL E67349 Semko 1020282
Alt.	TOSHIBA	TLP421F	Ext.> 8.0mm int.cr=thermal cycling 3) Di> 0.4mm AC 3000V, min. 100°C	EN 60747-5-2 IEC/EN 62368-1	VDE 40010944 UL E67349 Semko 9910249/01

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	Renesas Electronics Corporation	PS2561-1, PS2561L-1, PS2561L1-1, PS2561L2-1	Ext.> 7.0mm int.cr=thermal cycling 3) Di.> 0.4mm AC 3000V, min. 100°C	EN 60747-5-2 IEC/EN 62368-1	VDE 40008862 UL E72422 Nemko P10212638
Alt.	Lite-on	LTV-817	Ext. cr>8.0mm, Int.cr=thermal cycling 3), Dti > 0.6 mm, AC 3000V, min. 100°C	EN 60747-5-2 IEC/EN 62368-1	VDE 40015248 UL E113898
Alt.	Interchangeable	Interchangeable	Ext. cr>8.0mm, Int.cr=thermal cycling 3), Dti > 0.6 mm, AC 3000V, min. 100°C	IEC/EN 60384-14	EU certification mark
PFC choke (L9801) (Optional)	HAINING LIANFENG DONGJIN ELECTRONICS CO, LTD	373G0174A03J	105°C	IEC/EN 62368-1	Tested with appliance
Alt.	TC	373G0174A03S	105°C	IEC/EN 62368-1	Tested with appliance
Alt.	ASET	373G0174A03X	105°C	IEC/EN 62368-1	Tested with appliance
Line Choke (L9901, L9902) (Optional)	JIANGSU CHANNELON ELECTRONICS GROUP CO., LTD	73G174-272-H	105°C	IEC/EN 62368-1	Tested with appliance
Alt.	ASET ELECTRONIC TECHNOLOGY CO., LTD	73G174-272-X	105°C	IEC/EN 62368-1	Tested with appliance
Transformer (T9102)	HA	380GL32P710H	Class B	IEC/EN 62368-1	Tested with appliance
Alt.	LI TAI	380GL32P710L	Class B	IEC/EN 62368-1	Tested with appliance
Alt.	ASET	380GL32P710X	Class B	IEC/EN 62368-1	Tested with appliance
BOBBIN	CHANG CHUN PLASTICS CO.LTD	T200HF	150°C	UL 94 IEC/EN 62368-1	UL E59481 and tested with appliance

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	SUMITOMO BAKELITE CO LTD	PM-9750	150°C	UL 94 IEC/EN 62368-1	UL E41429 and tested with appliance
- Winding	HENG YA ELECTRIC KUN SHAN LTD	TYPU-130(UEW/QA-B)	130°C	UL 1446 IEC/EN 62368-1	UL E245514 and tested with appliance
Alt.	HUIZHOU HUILI INDUSTRIAL CO.,LTD	LITZW Xuew$/130,QA-x/130	130°C	UL 1446 IEC/EN 62368-1	UL E317107 and tested with appliance
Alt.	SHANGHAI ASIA PACIFIC ELECTRIC CO LTD	UEW-U	130°C	UL 1446 IEC/EN 62368-1	UL E214423 and tested with appliance
-Triple insulation wire	KBI COSMOLINK CO, LTD	TIW-M	Reinforced insulation, 130°C	UL 2353 IEC/EN 62368-1	UL E213764 and tested with appliance
-Insulation tape	JingJiang YaHua Pressure Sensitive Glue Co., Ltd	PF* (b)(g) CT *(b)(g) CT-285B	PET film insulating tape, 130°C	UL 510A IEC/EN 62368-1	UL E165111 and tested with appliance
Alt.	SYMBIO INC	35661 (c), 35660Y(a)	PET film insulating tape, 130°C	UL 510A IEC/EN 62368-1	UL E50292 and tested with appliance
-Tube	GREAT HOLDING INDUSTRIAL CO., LTD.	TFL	PTFE, 200°C, VW-1	UL 224 IEC/EN 62368-1	UL E156256 and tested with appliance
Primary IC (U9901)	Power Integrations	CAP200DG CAP004DG	1000V	IEC60950-1 (ed.2); am1;am2	CB of Nemko Ref.certif. No. NO82701/A1
Bleeding resistors (R9901, R9902)	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RVS-06#xxxFT series	Max. 510 K ohm, 1/4 W	IEC/EN 62368-1	CB issued by NEMKO (CB cert No. NO99692)
Alt.	Guangdong Fenghua Advanced Technology Holding Co., Ltd.	RS-06#xxxFT series	Max. 510 K ohm, 1/4 W	IEC/EN 62368-1	CB issued by NEMKO (CB report No. 337017)

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]
Alt.	Yageo Corporation	RV1206XX-0782K1L	Max. 510 K ohm, 1/4 W	IEC/EN 62368-1	CB issued by UL(CB cert No. DK-64853-UL)
Alt.	Yageo Corporation	RV1206 series	Max. 510 K ohm, 1/4 W	IEC/EN 62368-1	CB issued by UL(CB report No. E491387-4787887815-1 Original)
Alt.	Tzai Yuan Enterprise Co., Ltd.	HSMD*********, SMD*********	Max. 510 K ohm, 1/4 W	IEC/EN 62368-1	CB issued by UL(CB cert No. DK-29431-A1-M1-UL)
Alt.	Tzai Yuan Enterprise Co., Ltd.	MGUL1/4W series	Max. 510 K ohm, 1/4 W	IEC/EN 62368-1	CB issued by UL(CB cert No. DK-69874-UL)
Alt.	Interchangeable	Interchangeable	Max. 510 K ohm, 1/4 W	IEC/EN 62368-1	EU certification mark
Power-distribution switch (U6036)	ANPEC ELECTRONICS CORPORATION NO.6, Dusing 1st Rd., Hsinchu Science Park, Hsinchu, 30078, Taiwan	APL3556EBTI-TRG	Input Voltage: DC 2.7-5.5V Rated current: 0-3A	IEC 62368-1:2018	TUV NORD CB (Certif. No. 4478021406748-003)
DC/DC Converter (U6052)	MONOLITHIC POWER SYSTEMS 79 GREAT OAKS BLVD SAN JOSE CA 95119-1311 UNITED STATES	MP4247GQ	Ratings not required (provided for reference only). Input Voltage Range: 18 to 22 Vdc Output: 5 Vdc/3 A or 15 Vdc/3A or 20 Vdc/4.5 A (Configurable by External Resistors)	IEC 62368-1:2018	CB issued by UL (CB cert No. US-37465-UL)
Components listed below are not regarded critical components:					
Internal Speaker (two sets)	Interchangeable	Interchangeable	Each rated 8Ω, max. 6W, V-1	IEC/EN 62368-1	None

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity [1)]

Note:
1. An asterisk indicates a mark that assures the agreed level of surveillance.
2. “Di” means distance through insulation, “Int.” means internal distance of creepage and “Ext.” means external distance of creepage.
3. There is no any internal creepage distance. Test according to IEC60950-1:2001, cl. 2.10.8 (same as requirement in IEC60950-1:2005, cl. 2.10.9) has been carried out ten times for the components at 100°C / 25°C / 0°C / 25°C. Humidity treatment of 48 hours as well as electric strength tests at 3000V / 1 minute was carried out to the component after thermal cycling test.
4. All sources of photo coupler were certified according to DIN EN60747-5-2 which in compliance with the requirements and provisions of IEC 60747-5-5.
5. All sources of photo coupler were in compliance with CTL DSH 759 decision.

4.8.4, 4.8.5	**TABLE: Lithium coin/button cell batteries mechanical tests**	N/A
(The following mechanical tests are conducted in the sequence noted.)		

4.8.4.2	**TABLE: Stress Relief test**	—

Part	Material	Oven Temperature (°C)	Comments

4.8.4.3	**TABLE: Battery replacement test**	—
Battery part no. .....:		—

Battery Installation/withdrawal	Battery Installation/Removal Cycle	Comments
	1	
	2	
	3	
	4	
	5	
	6	
	8	
	9	
	10	

4.8.4.4	**TABLE: Drop test**	—

Impact Area	Drop Distance	Drop No.	Observations
		1	
		2	
		3	

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests		N/A
(The following mechanical tests are conducted in the sequence noted.)			
4.8.4.5	**TABLE: Impact**		—
Impacts per surface	Surface tested	Impact energy (Nm)	Comments
4.8.4.6	**TABLE: Crush test**		—
Test position	Surface tested	Crushing Force (N)	Duration force applied (s)
Supplementary information:			

4.8.5	TABLE: Lithium coin/button cell batteries mechanical test result		N/A
Test position	Surface tested	Force (N)	Duration force applied (s)
Supplementary information:			

5.2	Table: Classification of electrical energy sources						P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
1	264V,60Hz	+19V output	Normal	18.9Vdc	-	-	ES1
			Abnormal	18.9Vdc	-	-	
			Single fault – SC/OC	18.9Vdc	-	-	
2	264V,60Hz	LED backlight	Normal	30.8Vdc	-	-	ES1
			Abnormal	30.8Vdc	-	-	
			Single fault – SC/OC	30.8Vdc	-	-	
3	264V,60Hz	All secondary port to earth	Normal	-	0.13mApk	-	ES1
			Abnormal	-	0.13mApk	-	
			Single fault – SC/OC	-	0.13mApk	-	

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4	264V,60Hz	Key button / plastic enclosure to earth	Normal	-	0.13mApk	-	ES1
			Abnormal	-	0.13mApk	-	
			Single fault – SC/OC	-	0.13mApk	-	

5.2.2.3 - Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
--	264V, 60Hz	C9901	Normal	470	373	ES3
			Abnormal	--	--	
			Single fault – SC/OC	--	--	
--	264V, 60Hz	C9902	Normal	470	373	ES3
			Abnormal	--	--	
			Single fault – SC/OC	--	--	

5.2.2.4 - Single Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

5.2.2.5 - Repetitive Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Off time (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

Test Conditions:

Normal –

Abnormal -

Supplementary information: SC=Short Circuit, OC=Short Circuit

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements**	P

TRF No. IEC62368_1D

IEC 62368-1						
Clause	Requirement + Test		Result - Remark			Verdict
	Supply voltage (V) ..... :	90	90	264	264	—
	Ambient T_{min} (°C) ..... :	26.1	40	26.1	40	—
	Ambient T_{max} (°C) ..... :	27.9	40	27.9	40	—
	Tma (°C) ..... :	40	40	40	40	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
Horizontal orientation:						
CN9901 body		--	53.1	--	57.9	70
C9904 body		--	55.4	--	59.6	85
C9905 body		--	55.4	--	62.1	85
C9910 body		--	54.9	--	61.3	85
PCB near TH9901		--	66.4	--	81.7	105
C9901 body		--	57.9	--	65.2	110
L9901 coil		--	60.8	--	74.0	105
C9902 body		--	59.5	--	71.1	110
L9902coil		--	62.1	--	79.7	105
PCB near BD9901		--	64.6	--	85.0	105
L9801 coil		--	67.6	--	83.6	105
L9801 core		--	65.7	--	80.1	For ref
T9102 coil		--	78.8	--	84.0	110*
T9102 core		--	78.2	--	83.2	For ref
C9801 body		--	66.9	--	74.8	105
PCB near D9801		--	76.4	--	86.8	105
PCB near Q9101		--	79.5	--	84.8	105
C9903 body		--	63.9	--	70.9	85
U9802 body		--	77.5	--	81.8	100
U9104 body		--	78.6	--	82.7	100
PCB near Q9104		--	74.5	--	78.7	105
Insulation sheet (between power board and metal cover)		--	70.1	--	75.6	80
Insulation sheet (between power board and LCD panel)		--	74.3	--	79.7	125
Below temperatures are adjusted to ambient of 25 °C.						
Plastic enclosure outside		33.6	--	35.1	--	94
Panel surface		34.4	--	35.1	--	80
Metallic parts for accessible		37.8	--	38.4	--	70
Switch surface		32.3	--	33.8	--	48

TRF No. IEC62368_1D

IEC 62368-1					
Clause	Requirement + Test	Result - Remark			Verdict
Key surface	31.8	--	31.5	--	48
Vertical orientation, 90° clockwise					
CN9901 body	--	61.6	--	67.0	70
C9904 body	--	65.5	--	70.1	85
C9905 body	--	65.9	--	76.0	85
C9910 body	--	66.5	--	77.5	85
PCB near TH9901	--	74.9	--	87.5	105
C9901 body	--	68.0	--	76.2	110
L9901 coil	--	70.4	--	84.2	105
C9902 body	--	69.2	--	82.5	110
L9902coil	--	72.1	--	90.5	105
PCB near BD9901	--	74.9	--	96.1	105
L9801 coil	--	76.7	--	91.4	105
L9801 core	--	74.7	--	88.6	For ref
T9102 coil	--	84.7	--	86.9	110*
T9102 core	--	83.4	--	86.2	For ref
C9801 body	--	76.7	--	83.2	105
PCB near D9801	--	84.4	--	92.3	105
PCB near Q9101	--	82.2	--	84.6	105
C9903 body	--	71.3	--	74.6	85
U9802 body	--	75.1	--	76.6	100
U9104 body	--	74.6	--	76.2	100
PCB near Q9104	--	80.3	--	81.9	105
Insulation sheet (between power board and metal cover)	--	73.0	--	76.9	80
Insulation sheet (between power board and LCD panel)	--	81.3	--	84.0	125
Below temperatures are adjusted to ambient of 25 °C.					
Plastic enclosure outside	34.0	--	35.4	--	94
Panel surface	34.3	--	34.9	--	80
Metallic parts for accessible	36.7	--	37.1	--	70
Switch surface	33.9	--	34.7	--	48
Key surface	33.5	--	34.4	--	48
Vertical orientation, 90° anticlockwise					
CN9901 body	--	52.3	--	59.0	70
C9904 body	--	55.0	--	61.6	85

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

C9905 body	--	53.8	--	62.1	85
C9910 body	--	52.6	--	59.4	85
PCB near TH9901	--	65.9	--	80.4	105
C9901 body	--	57.6	--	67.7	110
L9901 coil	--	60.0	--	74.2	105
C9902 body	--	58.5	--	71.8	110
L9902coil	--	60.6	--	78.6	105
PCB near BD9901	--	62.0	--	80.4	105
L9801 coil	--	64.0	--	77.4	105
L9801 core	--	62.4	--	73.3	For ref
T9102 coil	--	79.3	--	82.9	110*
T9102 core	--	75.8	--	79.7	For ref
C9801 body	--	57.6	--	61.6	105
PCB near D9801	--	69.1	--	75.3	105
PCB near Q9101	--	74.7	--	78.6	105
C9903 body	--	62.2	--	71.4	85
U9802 body	--	73.4	--	76.2	100
U9104 body	--	71.9	--	74.4	100
PCB near Q9104	--	76.3	--	80.0	105
Insulation sheet (between power board and metal cover)	--	69.1	--	73.8	80
Insulation sheet (between power board and LCD panel)	--	73.6	--	77.3	125
Below temperatures are adjusted to ambient of 25 °C.					
Plastic enclosure outside	31.8	--	33.5	--	94
Panel surface	32.9	--	33.7	--	80
Metallic parts for accessible	36.3	--	37.1	--	70
Switch surface	31.1	--	32.0	--	48
Key surface	30.5	--	30.8	--	48

Temperature T of winding:	t1 (°C)	R1 (Ω)	t2 (°C)	R2 (Ω)	T (°C)	Allowed Tmax (°C)	Insulation class
--	--	--	--	--	--	--	--

Supplementary information: * indicated thermocouple method was used to measure the winding, so the limit value reduced 10K.

Note 1: Tma should be considered as directed by appliable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics		N/A
Penetration (mm)..... :			—
Object/ Part No./Material		Manufacturer/trademark	T softening (°C)
supplementary information:			

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics		P
Allowed impression diameter (mm) ..... :		≤ 2 mm	—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)
Bobbin of Transformer	--	125	1.1
Supplementary information:			

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)[1]	Required cl (mm)	cl (mm) [2]	Required[3] cr (mm)	cr (mm)
Functional:							
FI: Between L and N before fuse ***1)***	420	250	--	2.3	6.0	2.5	6.0
FI: Between fuse two ends 1), 3)	420	250	--	2.3	3.1	2.5	3.1
Basic / supplementary:							
BI: Line (pri.) – GND 1) , 3)	420	250	--	2.3	3.0	2.5	3.0
BI: Neutral (pri.) – GND 1) , 3)	420	250	--	2.3	3.0	2.5	3.0
BI: Components side of power board (pri.) –earthed metal chassis **2)**	432	263	--	2.3	8.0	2.7	8.0
BI: C9903 (pri.) – C9903 (PE) 1) , 3)	432	263	--	2.3	8.0	2.7	8.0
BI: C9904 (pri.) – C9904 (PE) 1) , 3)	432	263	--	2.3	8.0	2.7	8.0
BI: C9905 (pri.) – C9905 (PE) 1) , 3)	432	263	--	2.3	8.0	2.7	8.0
BI: C9909 (pri.) – C9909 (PE) 1) , 3)	432	263	--	2.3	8.0	2.7	8.0
BI: C9910 (pri.) – C9910 (PE) 1) , 3)	432	263	--	2.3	8.0	2.7	8.0
Reinforced:							
BI: Pin side of power board (pri.)	432	263	--	4.5	8.0	5.3	8.0

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

– LCD panel							
RI: U9802 (pri.) – U9802 (sec.) 1)	432	263	--	4.5	8.0	5.3	8.0
RI: U9104 (pri.) – U9104 (sec.) 1)	432	263	--	4.5	8.0	5.3	8.0
RI: T9102 Pri. winding –T9102 sec winding (Reinforced)	432	263	--	4.5	9.9	5.3	9.9
RI: T9102 Pri. winding –T9102 core (Reinforced)	432	263	--	4.5	9.0	5.3	9.0
RI: Pri C9113- T9102 sec winding	432	263	--	4.5	6.5	5.3	6.5

Supplementary information:

FI: Function insulation; BI: Basic insulation; SI: Supplementary insulation; RI: Reinforced insulation

With the equipment to be operated at 5000m above sea level max. the minimum clearances is multiplied by the factor 1.48.

1) Measured on solder side.

2) Measured on component side.

3) There is a slot > 1 mm under component.

Glued component: C9801, C9815.

The CTI rating of PCB is material group IIIb (CL.2.10.4)

Note 1: Only for frequency above 30 kHz
Note 2: See table 5.4.2.4 if this is based on electric strength test
Note 3: Provide Material Group

5.4.2.3	**TABLE: Minimum Clearances distances using required withstand voltage**			**P**
	Overvoltage Category (OV):			II
	Pollution Degree:			2
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)
Basic		2500	See table 5.4.2.2, 5.4.2.4 and 5.4.3	See table 5.4.2.2, 5.4.2.4 and 5.4.3
Reinforced		4000	See table 5.4.2.2, 5.4.2.4 and 5.4.3	See table 5.4.2.2, 5.4.2.4 and 5.4.3
Supplementary information:				

5.4.2.4	**TABLE: Clearances based on electric strength test**			**N/A**
Test voltage applied between:		Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No
--		--	--	--
Supplementary information:				

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements				P
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
Bobbin of transformer	432	--	See table 4.1.2	0.4/1layer	Min. 0.45
Insulation sheet	432	--	See table 4.1.2	0.4/1layer	Min. 0.45
Supplementary information:					

5.4.9	TABLE: Electric strength tests		P
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Basic/supplementary:			
Basic: Primary – PE	AC	2500	No
Reinforced:			
Reinforced: Primary – Secondary output	AC	4000V	No
Reinforced: L/N to plastic enclosure with metal foil	AC	4000V	No
Reinforced: T9102 Primary – Secondary **)	AC	4000V	No
Reinforced: T9102 Primary – Core **)	AC	4000V	No
Insulation sheet	AC	4000V	No
Supplementary information: *) For all models list in this report **) For all sources of T9102. Note: The tests mentioned above were performed after humidity test.			

5.5.2.2	TABLE: Stored discharge on capacitors				P
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification
264V/50Hz	Line-Neutral	N	On	36	ES1
90V/50Hz	Line-Neutral	N	On	8	ES1

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:
X-capacitors installed for testing are:
- bleeding resistor rating: See table 4.1.2 for detail
- ICX:

Notes:
A. Test Location:
Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth
B. Operating condition abbreviations:
N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition

5.6.6.2	TABLE: Resistance of protective conductors and terminations			P
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
PE terminal of AC inlet to internal Metal enclosure	40	2	0.28	0.007
PE terminal of AC inlet to internal Metal enclosure	32	2	--	--
PE terminal of ac inlet to C9903	40	2	0.32	0.008
PE terminal of ac inlet to C9903	32	2	--	--
PE terminal of ac inlet to C9904	40	2	0.16	0.004
PE terminal of ac inlet to C9904	32	2	--	--
PE terminal of ac inlet to C9905	40	2	0.20	0.005
PE terminal of ac inlet to C9905	32	2	--	--
PE terminal of ac inlet to C9909	40	2	0.20	0.005
PE terminal of ac inlet to C9909	32	2	--	--
PE terminal of ac inlet to C9910	40	2	0.12	0.003
PE terminal of ac inlet to C9910	32	2	--	--
Supplementary information:				

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part	P
Supply voltage .....:		—
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)
Line to earth,	1	0.58Max.
Neutral to earth,	2*	

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Line to secondary connector, Neutral to secondary connector, Line to plastic enclosure with copper foil, Neutral to plastic enclosure with copper foil	3	
	4	
	5	
	6	
	8	

Supplementary Information:

Notes:
[1] Supply voltage is the anticipated maximum Touch Voltage

[2] Earthed neutral conductor [Voltage differences less than 1% or more]

[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3

[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.

[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.

6.2.2	Table: Electrical power sources (PS) measurements for classification				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s*)	PS Classification
A	DC output of power board	Power (W) :	--	--	PS2 (See Table Annex Q.1)
		V_A (V) :	--	--	
		I_A (A) :	--	--	

Supplementary Information:

(*) Measurement taken only when limits at 3 seconds exceed PS1 limits.

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)			P
Location	Open circuit voltage After 3 s (Vp)	Measured r.m.s current (Irms)	Calculated value (V_p x I_{rms})	Arcing PIS? Yes / No
*	*	*	*	Yes

Supplementary information:

An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15.

(*) All components located within the power board are considered as arcing PIS.

6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)	P

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Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No
*	*	*	*	--	Yes

Supplementary Information:

A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.

If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.

A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.

(*) All circuits are regarded as Resistive PIS.

8.5.5	TABLE: High Pressure Lamp		N/A
Description		Values	Energy Source Classification
Lamp type.....:			—
Manufacturer.....:			—
Cat no.....:			—
Pressure (cold) (MPa).....:			MS_
Pressure (operating) (MPa).....:			MS_
Operating time (minutes).....:			—
Explosion method .....:			—
Max particle length escaping enclosure (mm) .:			MS_
Max particle length beyond 1 m (mm).....:			MS_
Overall result .....:			
Supplementary information:			

B.2.5	TABLE: Input test							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
Power board 715GB656 and main board 715GD279 (HDMI mode):								

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Clause	Requirement + Test	Result - Remark	Verdict

B.2.5	TABLE: Input test							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
90	50	1.727	—	148.5	—	F9901	1.727	Max. power output to speaker. Max.contrast 20% brightness. One USB C 1 load 5V/3A, One USB C 2 load 20V/4.8A. operated continuously.
90	60	1.728	—	148.4	—	F9901	1.728	Same as above.
100	50	1.543	2	147.5	—	F9901	1.543	Same as above.
100	60	1.551	2	147.7	—	F9901	1.551	Same as above.
240	50	0.663	2	144.4	—	F9901	0.663	Same as above.
240	60	0.670	2	144.4	—	F9901	0.670	Same as above.
264	50	0.615	—	144.2	—	F9901	0.615	Same as above.
264	60	0.622	—	144.2	—	F9901	0.622	Same as above.
Power board 715GB656 and main board 715GD279 (DP mode):								
90	50	1.715	—	147.8	—	F9901	1.715	Max. power output to speaker. Max.contrast, Max brightness. USB load 5V/5W, One USB C 1 load 5V/3A, One USB C 2 load 20V/4.0A. operated continuously.
90	60	1.722	—	147.9	—	F9901	1.722	Same as above.
100	50	1.538	2	146.8	—	F9901	1.538	Same as above.
100	60	1.540	2	146.8	—	F9901	1.540	Same as above.
240	50	0.661	2	143.9	—	F9901	0.661	Same as above.
240	60	0.668	2	143.9	—	F9901	0.668	Same as above.
264	50	0.613	—	143.6	—	F9901	0.613	Same as above.
264	60	0.621	—	143.7	—	F9901	0.621	Same as above.
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured								

B.3	TABLE: Abnormal operating condition tests	P

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Clause	Requirement + Test	Result - Remark	Verdict

Ambient temperature (°C) .....:	See below.	—
Power source for EUT: Manufacturer, model/type, output rating ..:	--	—

Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Ventilation openings	Blocked	264	4.0H	F9901	0.622	Yes	T9102Coil=71.9°C, T9102Core=70.7°C, Palstic outside=41.8°C, Panel surface=42.1°C, Metal parts for accessible =42.1°C, Switch surface=39.2°C, Key surface=33.7°C, Ambient=29.3°C.	No hazard, no extremely high temperature
T9102(After C9105)	Overload	264	4.0H	F9901	1.276	Yes	T9102Coil=121.4 °C, T9102Core=105.9 °C, Palstic outside=42.4°C, Panel surface =42.8°C, Metal parts for accessible =45.4°C, Switch surface =38.5°C, Key surface=37°C, Ambient=27.6°C.	Overload to 8.3A. No hazard, no extremely high temperature .
Fast charge	Overload	264	4.0H	F9901	0.633	Yes	T9102Coil=68.7°C, T9102Core=67.4°C, Palstic outside=36°C, Panel surface =38°C, Metal parts for accessible =42.6°C, Switch surface=32.8°C, Key surface=34.1°C, Ambient=27.7°C.	Overload to 2.3A, No hazard, no extremely high temperature .

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Clause	Requirement + Test	Result - Remark	Verdict

B.3	TABLE: Abnormal operating condition tests		P
Ambient temperature (°C) .....:		See below.	—
Power source for EUT: Manufacturer, model/type, output rating ..:		--	—

Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
USB3.0	Overload	264	4.0H	F9901	0.645	Yes	T9102Coil=69.3°C, T9102Core=67.7°C, Palstic outside=36.3°C, Panel surface =38.5°C, Metal parts for accessible =44.6°C, Switch surface =32.4°C, Key surface=34.2°C, Ambient=28°C.	Overload to 2.2A. No hazard, no extremely high temperature .
USB C 1 (15W)	Overload	264	4.0H	F9901	0.808	Yes	T9102Coil=69.1°C, T9102Core=67.4°C, Palstic outside=36.2°C, Panel surface =37.9°C, Metal parts for accessible =44°C, Switch surface =32.1°C, Key surface=34°C, Ambient=28.7°C.	Overload to 3.2A. No hazard, no extremely high temperature .
USB C 2 (96W)	Overload	264	4.0H	F9901	0.808	Yes	T9102Coil=83.4°C, T9102Core=78°C, Palstic outside=38.5°C, Panel surface =41.1°C, Metal parts for accessible =44.1°C, Switch surface =34.5°C, Key surface=33.5°C, Ambient=28.7°C,	Overload to 4.9A. No hazard, no extremely high temperature .

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Clause	Requirement + Test	Result - Remark	Verdict

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) .....:				See below.				—
Power source for EUT: Manufacturer, model/type, output rating ..:				--				—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Supplementary information: Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test or “Single Fault” then the condition for Clause B.4.								

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Clause	Requirement + Test	Result - Remark	Verdict

B.4	TABLE: Fault condition tests		P
Ambient temperature (°C) .....:		25	—
Power source for EUT: Manufacturer, model/type, output rating .:		--	—

Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
BD9901 pin2-4	S-C	264	<1s	F9901	>10.5→0 *)	—	—	F9901 opened immediately, no hazard.
C9801	S-C	264	<1s	F9901	>10.5→0 *)	—	—	F9901 opened immediately, no hazard.
U9101 pin1-15	S-C	264	5 min	F9901	0.089	—	—	Unit shut down, no hazard, no extremely high temperature.
U9101 pin2-15	S-C	264	3 min	F9901	0.089	—	—	Unit shut down, no hazard, no extremely high temperature.
Q9104 pin G-S	S-C	264	3 min	F9901	0.61	—	—	As normal, no hazard, no extremely high temperature.
Q9104 pin D-S	S-C	264	3 min	F9901	0.096	—	—	Unit shut down, no hazard, no extremely high temperature.
Q9104 pin G-D	S-C	264	2 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature.
Q9103 pin G-S	S-C	264	<1S	F9901	0.61	—	—	As normal, no hazard, no extremely high temperature.
Q9103 pin D-S	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, no hazard, no extremely high temperature.
Q9103 pin G-D	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature.
U9802 pin 1-2	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature

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Clause	Requirement + Test	Result - Remark	Verdict

U9802 pin3-4	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
U9104 pin 1-2	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
U9104 pin3-4	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
Q9101 pin G-S	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
Q9101 pin D-S	S-C	264	2 min	F9901	>10.5→0 *)	—	—	F9901 opened immediately, no hazard
Q9101 pin G-D	S-C	264	<1S	F9901	>10.5→0 *)	—	—	F9901 opened immediately, no hazard
Q9102 pin G-S	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
Q9102 pin D-S	S-C	264	2 min	F9901	>10.5→0 *)	—	—	F9901 opened immediately, no hazard
Q9102 pin G-D	S-C	264	<1S	F9901	>10.5→0 *)	—	—	F9901 opened immediately, no hazard
R9813	S-C	264	2 min	F9901	0.61	—	—	As normal, no hazard, no extremely high temperature..
Q9102 pin G-S	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
Q9102 pin D-S	S-C	264	2 min	F9901	>10.5→0 *)	—	—	F9901 opened immediately, no hazard
Q9102 pin G-D	S-C	264	<1S	F9901	>10.5→0 *)	—	—	F9901 opened immediately, no hazard

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Clause	Requirement + Test	Result - Remark	Verdict

T9102 pin3-4	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
T9102 pin13-14	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
T9102 pin5-7	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
T9102 pin11-12	S-C	264	1 min	F9901	0.096	—	—	Unit shut down, No hazard, no extremely high temperature
Supplementary information: S-C = Short Circuit, O-C = Open Circuit.								

Annex M.3	**TABLE: Batteries**									N/A
The tests of Annex M are applicable only when appropriate battery data is not available										
Is it possible to install the battery in a reverse polarity position?..... :										
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition										
Max. current during fault condition										
Test results:										Verdict
- Chemical leaks										
- Explosion of the battery										
- Emission of flame or expulsion of molten metal										
- Electric strength tests of equipment after completion of tests										
Supplementary information:										

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Clause	Requirement + Test	Result - Remark	Verdict

Annex M.3	**TABLE: Batteries**									N/A
The tests of Annex M are applicable only when appropriate battery data is not available										
Is it possible to install the battery in a reverse polarity position?..... :										
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	

Annex M.4	**Table: Additional safeguards for equipment containing secondary lithium batteries**				N/A
Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (C)	
	Normal				
	Abnormal				
	Single fault –SC/OC				
	Normal				
	Abnormal				
	Single fault – SC/OC				
Supplementary Information:					

Battery identification	Charging at T_{lowest} (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation
Supplementary Information:				

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Clause	Requirement + Test	Result - Remark	Verdict

Annex Q.1	**TABLE: Circuits intended for interconnection with building wiring (LPS)**						**P**
Note: Measured UOC (V) with all load circuits disconnected:							
Output Circuit	Components	U_{oc} (V)	I_{sc} (A)		S (VA)		
			Meas.	Limit	Meas.	Limit	
Circuit output tested: +19V out of power board 715GB656							
T9102 (after C9105)	Normal condition	19.3	13.9	≤ 51.8	231.0	≤ 250	
For main board 715GD279							
CN501(HDMI) pin16 to GND	Normal condition	4.6	0	≤ 8.0	0	≤ 100	
CN501(HDMI) other pin to GND	Normal condition	0	0	≤ 8.0	0	≤ 100	
CN503 (DP) pin20 to GND	Normal condition	3.3	0.9	≤ 8.0	2.1	≤ 100	

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Clause	Requirement + Test			Result - Remark		Verdict
CN503(DP) pin20 to GND	(U407 pin2-3 S-C)	4.9	0.9	≤ 8.0	3.2	≤ 100
CN504(DP) other pin to GND	Normal condition	0	0	≤ 8.0	0	≤ 100
CN6003 above (USB3.0)	Normal condition	5.1	2.3	≤ 8.0	9.3	≤ 100
CN6003 above (USB3.0)	U8929 S-C	5.1	4.1	≤ 8.0	10.6	≤ 100
CN6003 below (USB3.0)	Normal condition	5.1	2.5	≤ 8.0	9.9	≤ 100
CN6003 below (USB3.0)	U8928 S-C	5.1	4.3	≤ 8.0	10.8	≤ 100
CN6004 above (Fast charge)	Normal condition	5.1	2.5	≤ 8.0	9.7	≤ 100
CN6004 above (Fast charge)	U8933 S-C	5.1	4.3	≤ 8.0	11.0	≤ 100
CN6004 below (USB3.0)	Normal condition	5.1	2.6	≤ 8.0	10.1	≤ 100
CN6004 below (USB3.0)	U8931 S-C	5.1	4.4	≤ 8.0	11.5	≤ 100
CN552 (USB C 5V)	Normal condition	5.0	3.4	≤ 8.0	13.4	≤ 100
CN552 (USB C 5V)	R6257 S-C	5.0	3.4	≤ 8.0	13.4	≤ 100
CN551 (USB C 5V)	Normal condition	5.1	4.7	≤ 8.0	16.5	≤ 100
CN551 (USB C 7V)	Normal condition	7.2	4.7	≤ 8.0	25.6	≤ 100
CN551 (USB C 9V)	Normal condition	9.2	4.7	≤ 8.0	35.3	≤ 100

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CN551 (USB C 10V)	Normal condition	10.2	4.7	≤ 8.0	39.9	≤ 100
CN551 (USB C 12V)	Normal condition	12.3	4.7	≤ 8.0	49.5	≤ 100
CN551 (USB C 15V)	Normal condition	15.4	4.7	≤ 8.0	63.5	≤ 100
CN551 (USB C 20V)	Normal condition	20.1	5.0	≤ 8.0	92.7	≤ 100
CN551 (USB C 20V)	R6377 S-C	20.1	5.0	≤ 8.0	92.7	≤ 100
CN551 (USB C 20V)	R6379 S-C	20.1	5.0	≤ 8.0	92.7	≤ 100
Supplementary Information: 1.S-C=short circuit 2.Fuse F1701, F702, F703 that will break the circuit within 120 s with a current equal to 210 % of the current rating. 3.USB C use approve IC, See table 4.1.2 for detail.						

T.2, T.3, T.4, T.5	**TABLE: Steady force test**				**P**
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Internal components	--	--	10	5	The clearance and creepage distances do not be reduced below the required values.
External plastic enclosure	See table 4.1.2	See table 4.1.2	250	5	All safeguards remained effective.
Internal metal enclosure	See table 4.1.2	See table 4.1.2	30	5	All safeguards remained effective.
Supplementary information:					

T.6, T.9	**TABLE: Impact tests**			**P**
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation
External plastic enclosure	See table 4.1.2	See table 4.1.2	1300	All safeguards remained effective.

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

T.7	TABLE: Drop tests				N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Supplementary information:					

T.8	TABLE: Stress relief test					P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
External plastic enclosure	See table 4.1.2	See table 4.1.2	70	7	All safeguards remained effective.	
Supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT
IEC 62368-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
(Audio/video, information and communication technology equipment - Part 1: Safety requirements)

Differences according to.....: EN 62368-1:2014+A11:2017

Attachment Form No.....: EU_GD_IEC62368_1D_II

Attachment Originator .....: Nemko AS

Master Attachment.....: Date 2021-02-04

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	CENELEC COMMON MODIFICATIONS (EN)	P
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".	-
CONTENTS	**Add** the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords	-
	Delete all the "country" notes in the reference document (IEC 62368-1:2014) according to the following list:	-

0.2.1	Note	1	Note 3	4.1.15	Note
4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c
5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note
5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3
5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4
10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3

	For special national conditions, see Annex ZB.		-
1	**Add** the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.		-

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	**Add** the following new subclause after 4.9: To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. **mains**, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for **pluggable equipment type B** or **permanently connected equipment**, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for **pluggable equipment type A** the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		N/A
5.4.2.3.2.4	**Add** the following to the end of this subclause: The requirement for interconnection with **external circuit** is in addition given in EN 50491-3:2009.		N/A
10.2.1	Add the following to [c] and [d] in table 39: For additional requirements, see 10.5.1.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	**Add** the following after the first paragraph: *For RS 1 compliance is checked by measurement under the following conditions:* *In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.* NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. *The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus.* *Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.* *For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.* NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.		N/A
10.6.1	**Add** the following paragraph to the end of the subclause: EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		N/A
10.Z1	**Add** the following new subclause after 10.6.5. **10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz** The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566		N/A
G.7.1	**Add** the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Bibliography	**Add** the following standards: **Add** the following notes for the standards indicated: IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.		N/A
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		P
4.1.15	**Denmark, Finland, Norway** and **Sweden** To the end of the subclause the following is added: **Class I pluggable equipment type A** intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and **accessible** parts, have a marking stating that the equipment shall be connected to an earthed **mains** socket-outlet. The marking text in the applicable countries shall be as follows: In **Denmark**: “Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.” In **Finland**: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In **Norway**: “Apparatet må tilkoples jordet stikkontakt” In **Sweden**: “Apparaten skall anslutas till jordat uttag”		N/A
4.7.3	**United Kingdom** To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.2	**Denmark** After the 2nd paragraph add the following: A warning (marking **safeguard**) for high **touch current** is required if the **touch current** exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high touch current.	N/A
5.4.11.1 and Annex G	**Finland and Sweden** To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5kV. It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: • the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; • the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		N/A
5.5.2.1	**Norway** After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	**Finland, Norway** and **Sweden** To the end of the subclause the following is added: Resistors used as **basic safeguard** or bridging **basic insulation** in **class I pluggable equipment type A** shall comply with G.10.1 and the test of G.10.2.		N/A
5.6.1	**Denmark** **Add** to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. *Justification:* In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		N/A
5.6.4.2.1	**Ireland and United Kingdom** After the indent for **pluggable equipment type A**, the following is added: – the **protective current rating** is taken to be 13 A, this being the largest rating of fuse used in the **mains** plug.		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm^2 to 1,5 mm^2 in cross-sectional area.		N/A
5.7.5	**Denmark** To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the **protective conductor current** exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	**Norway and Sweden** To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)” NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.” Translation to Swedish: ”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	**Denmark** To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .		N/A
B.3.1 and B.4	**Ireland and United Kingdom** The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of **direct plug-in equipment**, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the **direct plug-in equipment**, until the requirements of Annexes B.3.1 and B.4 are met		N/A
G.4.2	**Denmark** To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a *Justification:* Heavy Current Regulations, Section 6c		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	**United Kingdom** To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
G.7.1	**United Kingdom** To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
G.7.1	**Ireland** To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	**Ireland and United Kingdom** To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm^2 is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

ZC	*ANNEX ZC, NATIONAL DEVIATIONS (EN)*		N/A
10.5.2	**Germany** The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. *Justification:* German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. **NOTE** Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int +49-531-592-6320, Internet: http://www.ptb.de		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT

IEC 62368-1

U.S.A. AND CANADA NATIONAL DIFFERENCES

(Audio/video, information and communication technology equipment – Part 1: Safety requirements)

Differences according to ..... :	CSA/UL 62368-1:2014
TRF template used:..... :	IECEE OD-2020-F3, Ed. 1.1
Attachment Form No..... :	US_CA_ND_IEC62368_1D
Attachment Originator ..... :	UL(US)
Master Attachment..... :	Dated 2021-02-04

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IEC 62368-1 - US and Canada National Differences Special National Conditions based on Regulations and Other National Differences			
1.1	All equipment is to be designed to allow installation according to the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.	In accordance with the National Electrical Code (NEC) and the Canadian Electrical Code (CEC) part 1 CAN/CSA C22.1, ANSI/NFPA 70, and unless marked or otherwise identified, the Standard for Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	P
1.4	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A
4.1.17	*For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.*		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.8	Lithium coin / button cell batteries have modified special construction and performance requirements.	No such batteries.	N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.5, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment	Not provide in this product.	N/A
5.7.7	Equipment intended to receive telecommunication ringing signals complies with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure complies with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A
Annex F (F.3.3.8)	Output terminals provided for supply of other equipment, except mains, supply are marked with a maximum rating or references to which equipment it is permitted to be connected.		N/A
Annex G (G.7.1)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
Annex G (G.7.3)	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Annex G (G.7.5)	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV circuits within the equipment.	N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V_{peak} or 60 V d.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuits within the equipment.	N/A
Annex M	Battery packs for stationary applications comply with special component requirements.	No such parts.	N/A
Annex DVA (1)	Equipment intended for use in spaces used for environmental air are subjected to special flammability requirements for heat and visible smoke release.	No such parts.	N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m^3 (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	No such parts.	N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. & Canadian Regulations.	No such parts.	N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

	Baby monitors additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.	No such parts.	N/A
Annex DVA (5.6.3)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	No such parts.	N/A
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m^2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a min. flammability classification of V-1.	No such application.	N/A
Annex DVA (10.3.1)	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No such parts.	NA
Annex DVA (10.5.1)	Equipment that produces ionizing radiation complies with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No such parts.	N/A
Annex DVA (F.3.3.3)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."	Single phase only.	N/A
Annex DVA (F.3.3.5)	Equipment identified for ITE (computer) room installation is marked with the rated current	Not such application.	N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position	No such parts.	N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No standard supply outlets, receptacles, medium-base or smaller lampholders provided.	N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles complies with NEC 250.146(D) and CEC 10-112 and 10-906(8).	No such parts.	N/A
Annex DVA (G.4.3)	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non-interchangeable.	No such parts.	N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	No such parts.	N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).	No such parts.	N/A
Annex DVA (Annex M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the ITE room remote power-off circuit.	Not applicable for the equipment.	N/A
Annex DVA (Q)	Wiring terminals intended to supply Class 2 outputs according to the NEC or CEC Part 1are marked with the voltage rating and “Class 2” or equivalent; marking is located adjacent to the terminals and visible during wiring.	Not applicable for the equipment.	N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.	Not such application.	N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.	Not such application.	N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. Components required to comply include: appliance couplers, attachment plugs, battery back-up systems, battery packs, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultra-capacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, data storage equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	UL approved components used. Refer to table 4.1.2 of IEC 62368-1 test report for details.	P
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.	The equipment is not permanently connected equipment.	N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are in accordance with the NEC/CEC.	Pluggable equipment type A.	N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and are specially marked when specified.	No terminals for permanent wiring.	N/A
Annex DVH (DVH.3.2)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm^2).	No wire binding screws.	N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	The equipment is not permanently connected equipment.	N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, complies with special earthing, wiring, marking and installation instruction requirements.	The equipment not connected to a centralized d.c. power system.	N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.	No TNV circuits within the equipment.	N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.	No TNV circuits within the equipment.	N/A

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT

IEC 62368-1
(AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES
(**Audio/video, information and communication technology equipment**)

Differences according to ..... : AS/NZS 62368.1:2018

	National Differences		
Appendix ZZ	Variations to IEC 62368-1:2014 (ED. 2.0) for Australia and New Zealand		-
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2014 (ED. 2.0)		-
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		-
2	*Add* the following to the list of normative references: The following normative documents are referenced in Appendix ZZ: -AS/NZS 3112, *Approval and test specification—Plugs and socket-outlets* -AS/NZS 3123, *Approval and test specification—Plugs, socket-outlets and couplers for general industrial application* -AS/NZS 3191, *Electric flexible cords* -AS/NZS 60065, *Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)* -AS/NZS 60320.1, *Appliance couplers for household and similar general purposes, Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)* -AS/NZS 60320.2.2, *Appliance couplers for household and similar general purposes Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)* -AS/NZS 60695.2.11*, Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products* -AS/NZS 60695.11.5, *Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance* -AS/NZS 60695.11.10, *Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods* -AS/NZS 60884.1, *Plugs and socket-outlets for household and similar purposes, Part 1: General requirements* -AS/NZS 60950.1:2015, *Information technology equipment—Safety*, Part 1: *General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)*		-

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Clause	Requirement + Test	Result - Remark	Verdict
	IEC 61032:1997, *Protection of persons and equipment by enclosures—Probes for verification* -AS/NZS 61558.1:2008 (including Amendment 2:2015), *Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 2.1, MOD)* -AS/NZS 61558.2.16, *Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.*		
4.1.1	**Application of requirements and acceptance of materials, components and subassemblies** 1 *Replace* the text 'IEC 60950-1' with 'AS/NZS 60950.1:2015'. 2 *Replace* the text 'IEC 60065' with 'AS/NZS 60065'.		P
4.7	**Equipment for direct insertion into mains socket-outlets**		N/A
4.7.2	**Requirements** *Delete* the text of the second paragraph and *replace* with the following: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.		N/A
4.7.3	**Compliance Criteria** *Delete* the first paragraph and Note 1 and Note 2 and *replace* with the following: *Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.*		N/A
4.8	*Delete* existing clause title and *replace* with the following: **4.8 Products containing coin/button cell batteries**		N/A
4.8.1	**General** 4 Second dashed point, *delete* the text and *replace* with the following: – include coin/button cell batteries with a diameter of 32 mm or less. 2 After the second dashed point, *insert* the following Note: NOTE 1: Batteries are specified in IEC 60086-2. 3 After the third dashed point, *renumber* the existing Note as 'NOTE 2'. 4 Fifth dashed point, *delete* the word 'lithium'.		N/A
4.8.2	**Instructional Safeguard** First line, *delete* the word 'lithium'.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.8.3	**Construction** First line, after the word 'Equipment' *insert* the words 'containing one or more coin/button batteries and'		N/A
4.8.5	**Compliance criteria** *Delete* the first paragraph and *replace* with the following: *Compliance is checked by applying a force of 30 N +/-1 N for 10 s to the battery compartment door/cover by a rigid test finger according to test probe 11 of IEC 61032:1997 at the most unfavourable place and in the most unfavourable direction. The force shall be applied in one direction at a time.*		N/A
5.4.10.2	**Test methods**		N/A
5.4.10.2.1	**General** *Delete* the first paragraph and *replace* with the following: In Australia only, the separation is checked by the test of both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test of either Clause 5.4.10.2.2 or Clause 5.4.10.2.3.		N/A
Table 29	*Replace* the table with the following:		N/A

Parts	Impulse test		Steady state test	
	New Zealand	Australia	New Zealand	Australia
Parts indicated in Clause 5.4.10.1 a) [a]	2.5 kV 10/700 µs	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment. 10/700 µs	1.5 kV	3 kV
Parts indicated in Clause 5.4.10.1 b) and c) [b]	1.5 kV 10/700 µs [c]		1.0 kV	1.5 kV

[a] Surge suppressors shall not be removed.
[b] Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment.
[c] During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.

5.4.10.2.2	After the first paragraph, *insert* new Notes 201 and 202 as follows: NOTE 201 For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.2.3	After the first paragraph, *insert* new Notes 201 and 202 as follows: NOTE 201 For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
6	**Electrically-caused fire**		N/A
6.1	**General** After the first paragraph, *insert* the following new paragraph: Alternatively, the requirements of Clauses 6.2 to 6.5.2 are considered to be fulfilled if the equipment complies with the requirements of Clause 6.202		N/A
6.6	After Clause 6.6, *add* the new Clauses 6.201 and 6.202 as follows: **6.201 External power supplies, docking stations and other similar devices** and **6.202 Resistance to fire—Alternative tests** (see special national conditions)		N/A
8.5.4	**Special categories of equipment comprising moving parts**		N/A
8.5.4.1	**Large data storage equipment** In the first dashed row and the second dashed rows *replace* 'IEC 60950-1:2005' with 'AS/NZS 60950.1:2015'.		N/A
8.6	**Stability of equipment**		N/A
8.6.1 and Table 36	**Requirements** 1. Table 36, *insert* Footnote c at the end of the 'Glass slide' heading, and *add* a new Footnote c after the text of Footnote b in the last row of Table 36 as follows: [c] The glass slide test is not applicable to floor standing equipment, even though the equipment may have controls or a display. 2. Table 36, fifth row, *insert* '[201]' at the end of 'No stability requirements' 3. Table 36, ninth row, *insert* '[201]' at the end of 'No stability requirements' 4. Table 36, *add* the following new footnote: 201 MS2 and MS3 television sets and display devices, designed only for fixing to a wall, ceiling or equipment rack, are not subjected to stability requirements only if the instructional safeguard of Clause 8.6.1.201 is provided. Otherwise, the glass slide requirements of Clause 8.6.4 and horizontal force requirements of Clause 8.6.5 apply. 5. Second paragraph beneath Table 36, *delete* the words 'MS2 and MS3 television sets' and *replace* with 'MS2 and MS3 television sets and display devices'		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.6.1	After Clause 8.6.1 *add* the following new clauses: **8.6.1.201 Instructional safeguard for fixed-mount television sets** (see special national conditions)		N/A
Annex F **Paragraph F.3.5.1**	**Mains appliance outlet and socket-outlet markings** *Replace* 'IEC 60320-2-2' with 'AS/NZS 60320.2.2'.		N/A
Annex G **Paragraph G.4.2**	**Mains connectors** 1 In the second line *insert* 'or AS/NZS 3123' after 'IEC 60906-1'. 2 In the second line *insert* 'or AS/NZS 60320 series' after 'IEC 60320 series' 3 *Add* the following new paragraph: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.		N/A
Paragraph G.5.3.1	**Transformers, General** 1 In the third dashed point *replace* 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 In the fourth dashed point *replace* 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.		N/A
Paragraph G.7.1	**Mains supply cords, General** In the fourth dashed paragraph, *replace* 'IEC 60320-1' with 'AS/NZS 60320.1'		
Table G.5	**Sizes of conductors** 1 In the second row, first column, *delete* '6' and *replace* with '7.5' 2 In the second row, second column, *delete* '0,75' and *replace* with '0.75[b] 3 *Delete* Note 1. 4 *Replace* 'NOTE 2' with 'NOTE:'. 5 *Delete* the text of 'Footnote b' and *replace* with the following: [b] This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm2 three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 In Footnote c *replace* 'IEC 60320-1' with 'AS/NZS 60320.1' 7 In Footnote d *replace* 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Annex M Paragraph M.3.2	**Protection circuits for batteries provided within the equipment, Test method** After the first dashed point *add* the following Note: NOTE 201: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of SELV may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.		N/A
	Special national conditions (if any)		N/A
6.201	**External power supplies, docking stations and other similar devices** For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage— – at all ES1 outlets or connectors shall not increase by more than 10% of its rated output voltage under normal operating condition; and – of a USB outlet or connector shall not increase by more than 3 V or 10% of its rated output voltage under normal operating conditions, whichever is higher. For equipment with multiple rated output voltages, the requirements apply with the equipment configured for each rated output voltage in turn. NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries. *Compliance shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single-fault conditions of Annex B.4*		N/A
6.202	**Resistance to fire—Alternative tests**		N/A
6.202.1	**General** Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the equipment, or the following: a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length.		NA

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	b) The following parts which would contribute negligible fuel to a fire: – small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; – small electrical components, such as capacitors with a volume not exceeding 1 750 mm3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10. NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another.		
	Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4. For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5. The tests shall be carried out on parts of non-metallic material which have been removed from the equipment. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring.		N/A
6.202.2	**Testing of non-metallic materials** Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the relevant part is not thinner than the sample tested.		N/A
6.202.3	**Testing of insulating materials** Parts of insulating material supporting Potential Ignition Sources shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE: Contacts in components such as switch contacts are considered to be connections		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test need not be tested		N/A
	The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:		N/A

Clause of AS/NZS 60695.11.5	Change
9 Test procedure	
9.2 Application of needle-flame	*Delete* the first and second paragraphs and *replace* with the following: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner. The duration of application of the test flame shall be 30 s 1 s.
9.3 Number of test specimens	*Replace* with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.
11 Evaluation of test results	*Replace* with the following: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	boards, it shall not exceed 15 s. The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the relevant part is not thinner than the sample tested.		
6.202.4	**Testing in the event of non-extinguishing material** If parts, other than enclosures, do not withstand the glow wire tests of Clause 6.202.3, by failure to extinguish within 30 s after the removal of the glowwire tip, the needle-flame test detailed in Clause 6.202.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of Clause 6.202.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested. NOTE 1: If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing. NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing. NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.		N/A
6.202.5	**Testing of printed boards** The base material of printed boards shall be subjected to the needle-flame test of Clause 6.202.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a potential ignition source. The test is not carried out if— – the printed board does not carry any potential ignition source; – the base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or – the base material of printed boards, on which the available equipment power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. *Conformance shall be determined using the smallest thickness of the material.* NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the apparent power for more than 2 min when the circuit supplied is disconnected.		
6.202.6	**For open circuit voltages greater than 4 kV** Potential ignition sources with open circuit voltages exceeding 4 kV (peak) a.c. or d.c. under normal operating conditions shall be contained in a FIRE ENCLOSURE which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.		N/A
8.6.1.201	**8.6.1.201 Instructional safeguard for fixed-mount television sets** MS2 and MS3 television sets and display devices designed only for fixed mounting to a wall of ceiling or equipment rack shall, where required in Table 36, footnote 201, have an instructional safeguard in accordance with Clause F.5 which may be on the equipment or included in the installation instructions or equivalent document accompanying the equipment. The elements of the instructional safeguard shall be as follows: – element 1a: not available; – element 2: 'Stability Hazard' or equivalent wording; – element 3: 'The television set may fall, causing serious personal injury or death' or equivalent text; – element 4: the following or equivalent text: To prevent injury, this television set must be securely attached to the floor/wall in accordance with the installation instructions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.6.1.202	**Restraining device** MS2 and MS3 television sets and display devices that are not solely fixed-mounted should be provided with a restraining device such as a fixing point to facilitate restraining the equipment from toppling forward. The restraining device shall be capable of withstanding a pull of 100 N in all directions without damage. Where a restraining device is provided, instructions shall be provided in the instructions for installation or instructions for use to ensure correct and safe installation.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT

IEC 62368-1

(JAPAN) NATIONAL DIFFERENCES

(Audio/video, information and communication technology equipment – Part 1: Safety requirements)

Differences according to ..... : J62368-1 (2020)

TRF template used: ..... : IECEE OD-2020-F3, Ed. 1.1

Attachment Form No..... : JP_ND_IEC62368_1D

Attachment Originator ..... : UL (JP)

Master Attachment..... : Date 2021-02-04

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	National Differences		—
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this standard or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.		P
5.6.1	Mains socket-outlet and appliance outlet shall comply with Clause G.4.2A if they are incorporated as part of the equipment.		N/A
5.6.2.1	Mains connection of class 0I equipment: Instructional safeguard in accordance with Clause F.3.6.1A; Mains plug having a lead wire for protective earthing connection of class 0I equipment; Independent main protective earthing terminal installed by ordinary person.		N/A
5.6.2.2	This requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cab tire cable with 1.25 mm^2 or more cross-sectional area		N/A
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series or JIS C 8303, or otherwise being considered to comply with relevant regulations, or that is provided with mains appliance outlet as specified in JIS C 8283-2-2 for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.		N/A
5.7.4	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990.		N/A
6.4.3.3	A fuse complying with JIC C 6575 series or a fuse having equivalent characteristics shall open within 1 s. For Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”. A fuse not complying with JIS C 6575 series shall be tested with the breaking capacity taken into account.		N/A
8.5.4.2.1	Only three-phase stationary equipment rated more than 200 V ac can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.		N/A
8.5.4.2.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.		N/A
8.5.4.2.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.		N/A

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8.5.4.2.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.		N/A
9.2.6, Table 38	Handles, Knobs, grips, etc. and external surfaces either held, touched or worn against the body in normal use (> 1 min) [b,c]		N/A
F.3.5.1	Instructional safeguard of class 0I equipment in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8303 or relevant regulation to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.		N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic.		N/A
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.3 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions and instructional safeguard shall be provided regarding the earthing connection.		N/A
F.3.6.2.1	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.		N/A
F.4	Instruction for audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A. Installation instruction for the protective earthing connection for class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment.		N/A
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.		N/A

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G.3.4	Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the relevant part of JIS C 6575 (corresponding to IEC60127) or shall have equivalent characteristics. If there are no applicable IEC standards, overcurrent protective devices used as a safeguard shall comply with their applicable IEC standards.		N/A
G.4.1	This requirement is not applicable to Clauses G.4.2 and G.4.2A.		N/A
G.4.2	Mains connector shall comply with JIS C 8282 series, JIS C 8283 series, JIS C 8285, JIS C 8303 or IEC 60309 series. Mains plugs and socket-outlets shall comply with JIS C 8282 series, JIS C 8303, IEC 60309 series, or have equivalent or better performance. A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286. Construction preventing mechanical stress not to transmit to the soldering part of inlet terminal. Consideration for an equipment rated not more than 125 V provided with Type C14 and C18 appliance coupler complying with JIS C 8283 series.		N/A
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively.		N/A
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.		N/A
G.8.3.3	Withstand 1,71 × 1.1 × U_0 for 5 s.		N/A

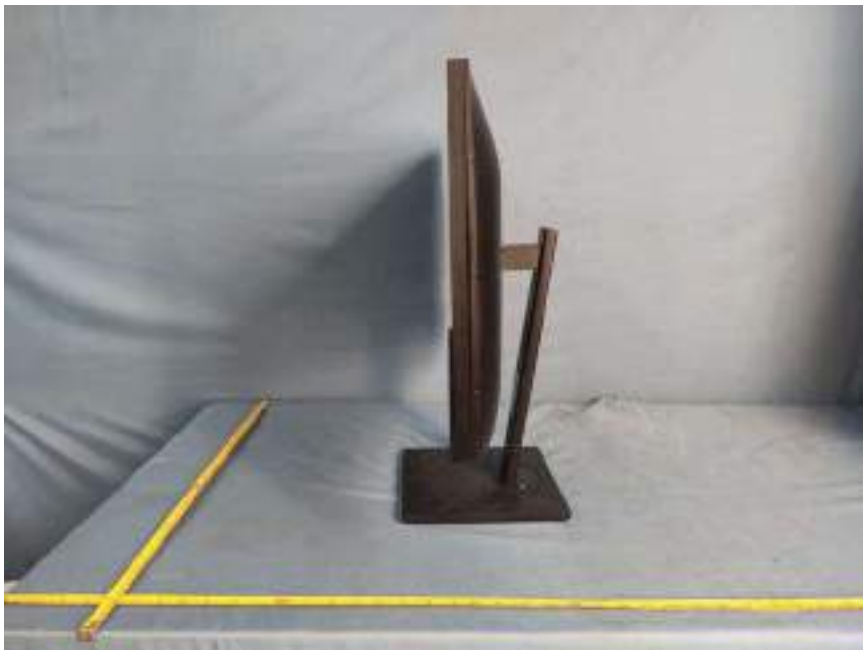
Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1629

Photograph of the Equipment under test (EUT)

External view of EUT

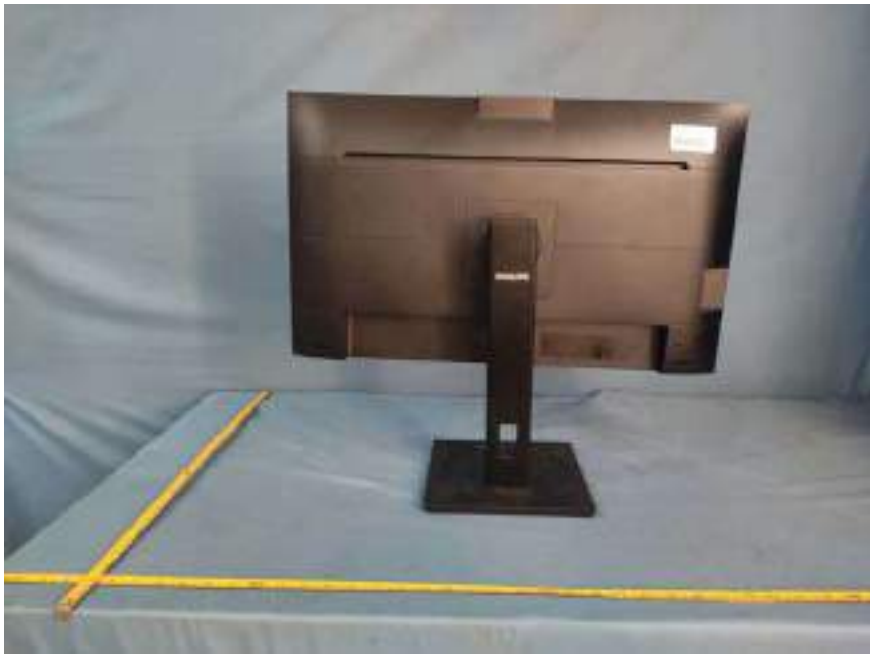


External view of EUT



Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1630

External view of EUT



External view of EUT



Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1631

External view of EUT



External view of EUT

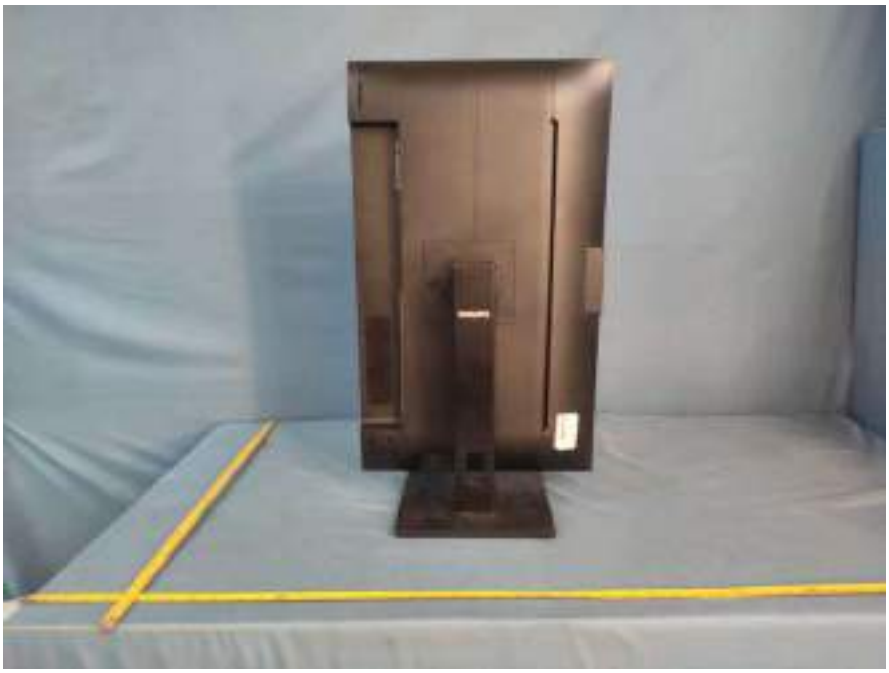


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External view of EUT

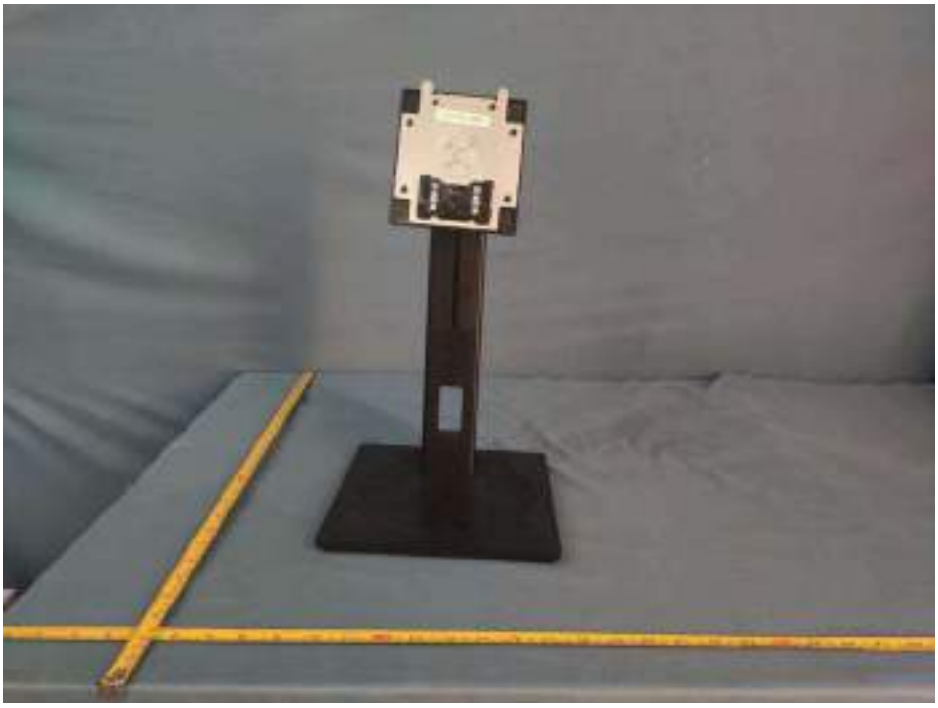


External view of EUT



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View of base stand

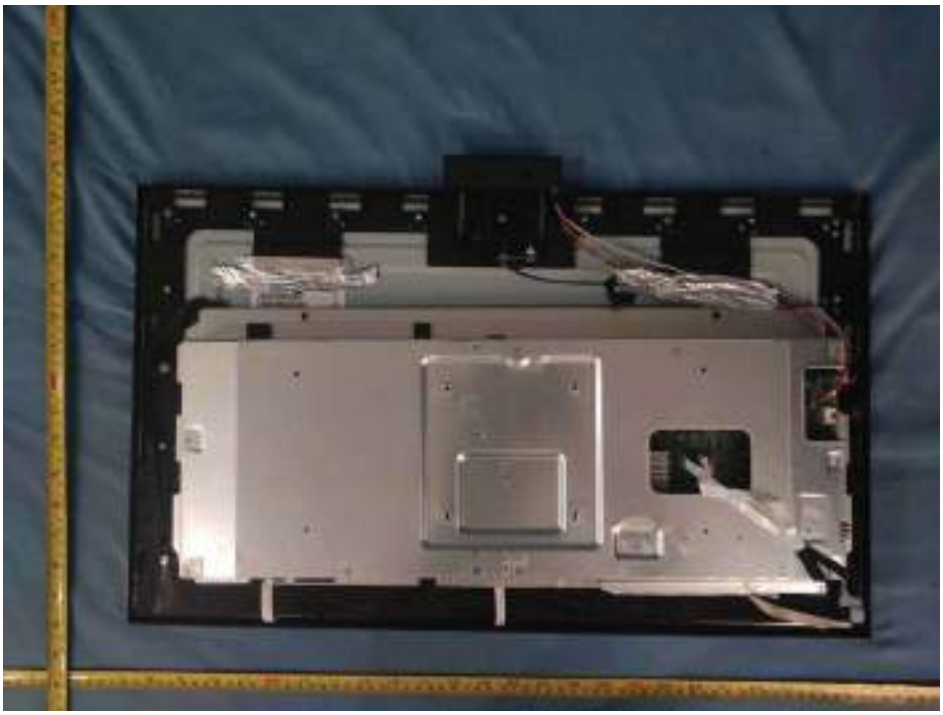


External view of EUT



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Internal view of EUT



Internal view of EUT



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Internal view of EUT



Internal view of EUT

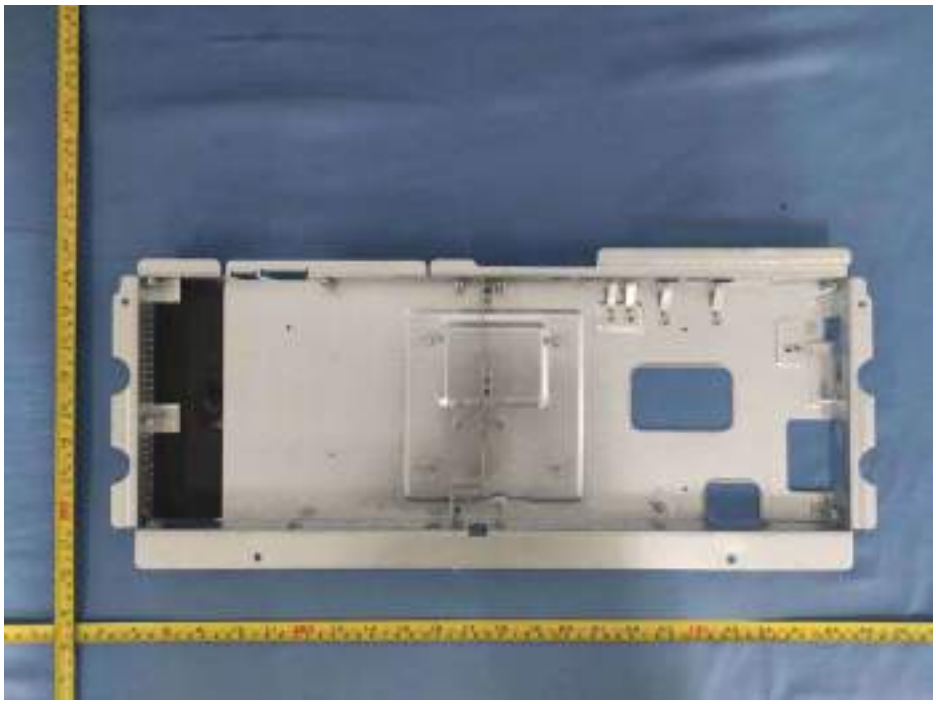


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Internal view of EUT



Internal view of EUT

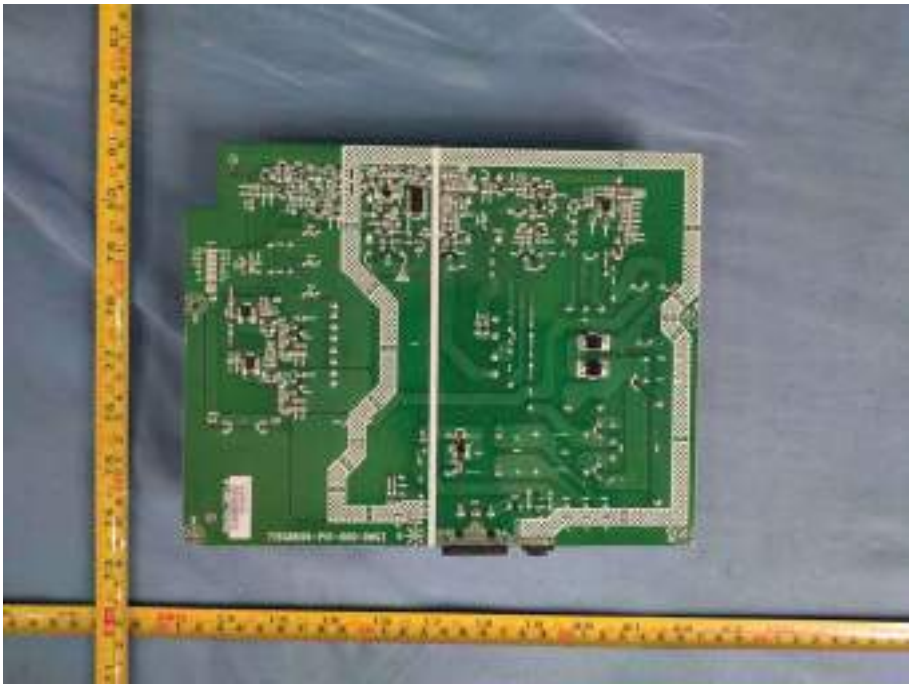


Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1637

View of power board 715GB656



View of power board 715GB656



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View of main board 715GD279



View of main board 715GD279



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Attachment: Measurement Section

6.4.8.3.3, 6.4.8.3.4 & P.2.2	**TABLE: enclosure openings**	**P**

Location	Size (mm)	Comments
Metal cover (internal enclosure)		
Top	1)Φ1.7mm 2)16.1 by 13.8mm 3)40.4 by 18.2mm	1) Numerous circular openings. 2) One rectangle opening, No opening was fall in volume of PS3 component shown as Figure 41 and 42 of this standard. 3) One rectangle opening, No opening was fall in volume of PS3 component shown as Figure 41 and 42 of this standard.
Right side	1)Φ1.7mm 2)Φ2.0mm max	1) Numerous circular openings. 2) Two circular openings.
Left side	1) 56.3 by16.0mm 2) Φ2.4mm max 3) Φ1.7mm	1) One rectangle opening, No opening was fall in volume of PS3 component shown as Figure 41 and 42 of this standard 2)Two circular openings. 3)Numerous circular openings.
Rear	1)56.3 by 33.0mm 2)40.4 by 29.0mm 3)77.7 by 49.7mm 4)Φ1.8mm max 5)Φ2.9mm max	1) One rectangle opening, No opening was fall in volume of PS3 component shown as Figure 41 and 42 of this standard. 2)One rectangle opening, No opening was fall in volume of PS3 component shown as Figure 41 and 42 of this standard. 3) One rectangle opening, No opening was fall in volume of PS3 component shown as Figure 41 and 42 of this standard. 4) Ten circular openings 5) Eight circular openings
Bottom	Φ1.7mm	Numerous circular openings.
External enclosure		
Top	--	No opening.
Left side	--	No opening.

TRF No. IEC62368_1D

Location	Size (mm)	Comments
Right side	--	No opening.
Rear	1)6.7 by 3.2mm 2)5.0 by 2.0mm	1. Numerous rectangles openings, Cover by internal metal cover 2. Numerous rectangles openings, Cover by internal metal cover
Bottom	1)22.0 by 3.0mm 2)7.9 by 2.0mm	1)Numerous rectangles openings. 2)Numerous rectangles openings.
Note(s): --		

G.5.3.2	**TABLE: Transformers**	**P**
Construction details:		
Transformer T9102 for power board 715GB656		
Mfr.: see table 4.1.2		
Type: see table 4.1.2		
Recurring peak voltage	432V	
Required clearance insulation		
For Reinforced	4.5mm	
Effective voltage rms	263V	
Required creepage insulation		
For Reinforced	5.3mm	
Measured min. clearances		
Pri. winding –sec winding (Reinforced)	9.9mm	
Pri. winding –core (Reinforced)	9.0mm	
Measured min. creepages		
Pri. winding –sec winding (Reinforced)	9.9mm	
Pri. winding –core (Reinforced)	9.0mm	

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Note: 1) All transformers have the same construction, they are identical except for manufacturer and type. 2) With the equipment to be operated at 5000m above sea level max. the minimum clearances is multiplied by the factor 1.48.
Construction:  3. APPEARANCE & MECHANICAL CHARACTERISTICS 3.1. DIMENSIONS 3.2. MARKING CONTENTS: XXXX: DATE CODE X: PRODUCT LINE CODE HA: MANUFACTURE SITE(IN Sanzhuang RD Hsinn County Nantong Jiangsu China)
Core consider as secondary
Pin numbers:

Prim.	3-4; 13-14
Sec.	5-7; 6-8; 9-11; 10-12
Bobbin:	
Material	Phenolic Molding Compound (PMC) -CHANG CHUN PLASTICS CO.LTD (UL E59481). Type T200HF, rated 150°C, V-0.
Thickness	Min. 0.45mm
Electric strength test	
With DC 4000V after humidity treatment	
Result	Pass

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ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ
ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ

Заявитель Автономная некоммерческая организация «Центр экспертных программ ВОК» (АНО «ЦЭП ВОК») (уполномоченное изготовителем лицо)

место нахождения: Россия, 119618, Москва, ул. 50 лет Октября, д. 4

адрес места осуществления деятельности: Россия, 115419, г. Москва, 2-й Рощинский пр-д, д. 8, корп. 4, ОГРН 1047732007355

Телефон: +74959602015, Адрес электронной почты: cepvok@yandex.ru

в лице Директора Тавера Ефима Иосифовича, действующего на основании Устава

заявляет, что ЖК-мониторы PHILIPS модели 13B**********, 16B**********, 27B**********, 24B**********, 24E**********, 24M**********, 27E**********, 27M**********, 32E**********, 32M**********, 34E********** (где «*» = 0-9, A-Z, a-z, «+», «-», «/», «\», отсутствие символа или пробел и обозначает тип панели монитора, типы разъемов, тип базы для крепления монитора, цветовое решение, регион продаж, отличие в маркетинговых наименованиях)

Изготовитель MMD (Shanghai) Electronics Technology Co., Ltd.

место нахождения: Room 5060A, No. 2 Building, 555 Dongchuan Road. Minhang District, Shanghai, 200241 CHINA (Китай)

адреса места осуществления деятельности по изготовлению продукции: см. Приложение №1 на 1 листе

Код ТН ВЭД ЕАЭС 8528 52 100 0

Серийный выпуск

соответствует требованиям

ТР ЕАЭС 037/2016 «Об ограничении применения опасных веществ в изделиях электротехники и радиоэлектроники»

Декларация о соответствии принята на основании

1. Технических документов, содержащих доказательства соответствия продукции требованиям технического регламента:
- декларации изготовителя от 11.03.2022;
- отчёта изготовителя об оценке рисков № TPVFQ-2021-R0018 от 11.03.2022;
- отчёта (протокола) изготовителя об испытаниях составных частей, материалов и компонентов продукции / GREEN BOM от 11.03.2022.

2. Договора № 06-02/20 от 11.02.2020 между уполномоченным изготовителем лицом (заявителем) АНО «ЦЭП ВОК» и изготовителем MMD (Shanghai) Electronics Technology Co., Ltd.

Схема декларирования 1д.

Дополнительная информация

Условия хранения: при температуре от минус 20°С до плюс 60°С и относительной влажности от 5% до 90%, без конденсации.

Срок службы продукции 5 лет.

Декларация о соответствии действительна с даты регистрации по 14.03.2027 включительно

(подпись)

Тавер Ефим Иосифович

(фамилия, имя и отчество руководителя организации-заявителя или физического лица, зарегистрированного в качестве индивидуального предпринимателя)

М.П. Центр экспертных программ ВОК

Регистрационный номер декларации о соответствии: ЕАЭС N RU Д-CN.PA02.B.47325/22

Дата регистрации декларации о соответствии: 15.03.2022

ПРИЛОЖЕНИЕ № 1 лист 1
К ДЕКЛАРАЦИИ О СООТВЕТСТВИИ ЕАЭС N RU Д-CN.PA02.B.47325/22

**Перечень предприятий-изготовителей продукции,
на которую распространяется действие декларации о соответствии**

Полное наименование предприятия-изготовителя	Адрес (место нахождения)
1. TPV Display Technology(China) Co., Ltd.	No. 106 Jinghai 3 Rd, BDA, BeiJing City, P. R. China (Китай)
2. TPV Display Technology (Wuhan) Co., Ltd.	Unique No.11 Zhuankou Development Districtof Economic Technological Development Zone, Wuhan City, P.R. China (Китай)
3. L&T Display Technology (Fujian) Ltd.	Optoelectronic Park, Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, PRC (Китай)
4. TPV Display Technology (Beihai) Co., Ltd.	China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi, P.R.China (Китай)
5. TPV Electronics (Fujian) Co., Ltd.	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China (Китай)
6. MMD Monitors&Displays Nederland B.V	Prins Bernhardplein 200,1097 JB Amsterdam-The Netherlands (Нидерланды)
7. MMD (Shanghai) Electronics Technology Co.,Ltd	Room 5060A, No.2 Building 555, Dongchuan Road, Minhang District, Shanghai, 200241, China (Китай)
8. MMD (Shanghai) Electronics Trading Co., Ltd	Room 603D, No.2 Building, No. 80 MoLing Road, JingAn District, Shanghai, China (Китай)

(подпись)

М.П.

Тавер Ефим Иосифович

(фамилия, имя и отчество руководителя организации-заявителя или физического лица, зарегистрированного в качестве индивидуального предпринимателя)

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FCC SDoC TEST REPORT

Report No.: DDT-B22072002-1E02

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Equipment under Test	:	LCD Monitor
Model No.	:	27B1U56,27B1U56******* (“*” = 0-9，A-Z，A-Z，+，-，/，\ OR BLANK)
Trade Mark	:	PHILIPS

Issued By: Tianjin Dongdian Testing Service Co., Ltd.

Address: Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park, Development Area, Tianjin, China

Tel: +86-22-58038033, E-mail: ddt@dgddt.com, http://www.ddttest.com

REPORT

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Test Report Declare

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Equipment Under Test	:	LCD Monitor
Model No.	:	27B1U56,27B1U56******* (“*” = 0-9，A-Z，A-Z，+，-，/，\ OR BLANK)
Trade Mark	:	PHILIPS

Test Standard Used:
ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B

We Declare:
The equipment described above is tested and assessed by Tianjin Dongdian Testing Service Co., Ltd. and in the configuration assessed the equipment complied with the standards specified above. The tested and assessed results are contained in this test report and Tianjin Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these assessments.
After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No.:	DDT-B22072002-1E02		
Date of Receipt:	Jul. 21, 2022	Date of Test:	Jul. 22, 2022 ~ Aug. 13, 2022

Prepared By:

May Zhang

May Zhang/Engineer

Approved By:

Aaron Zhang

Aaron Zhang/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Tianjin Dongdian Testing Service Co., Ltd.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1647

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Aug. 26, 2022	

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1648

1. Summary of test results

Description of Test Item	Standard	Result
Conducted emission at AC mains terminals	ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B	PASS
Radiated emission	ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B	PASS

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1649

2. General test information

2.1 Description of EUT

EUT* Name	**:**	LCD Monitor
Model Number	**:**	27B1U56,27B1U56****** (“*” = 0-9，A-Z，A-Z，+，-，/，\ OR BLANK)
Model Differences	**:**	All models difference is in sale marketing.
Test Model	:	27B1U5601H
Serial Number	**:**	N/A
EUT function description	**:**	Please refer to user manual of this device
Power supply	**:**	100-240V 50/60Hz
Test Voltage	**:**	110V 60Hz
EUT Class	**:**	Class B
Maximum work frequency	**:**	295 MHz

Note: EUT is the ab. of equipment under test.

2.2 Accessories of EUT

Description of Accessories	Manufacturer	Model number	Description	Remark
AC Cable	N/A	N/A	Length: 1.5m/1.8m, Unshielded	N/A
HDMI Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A
DP Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A
Type-C Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A
AUDIO Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A

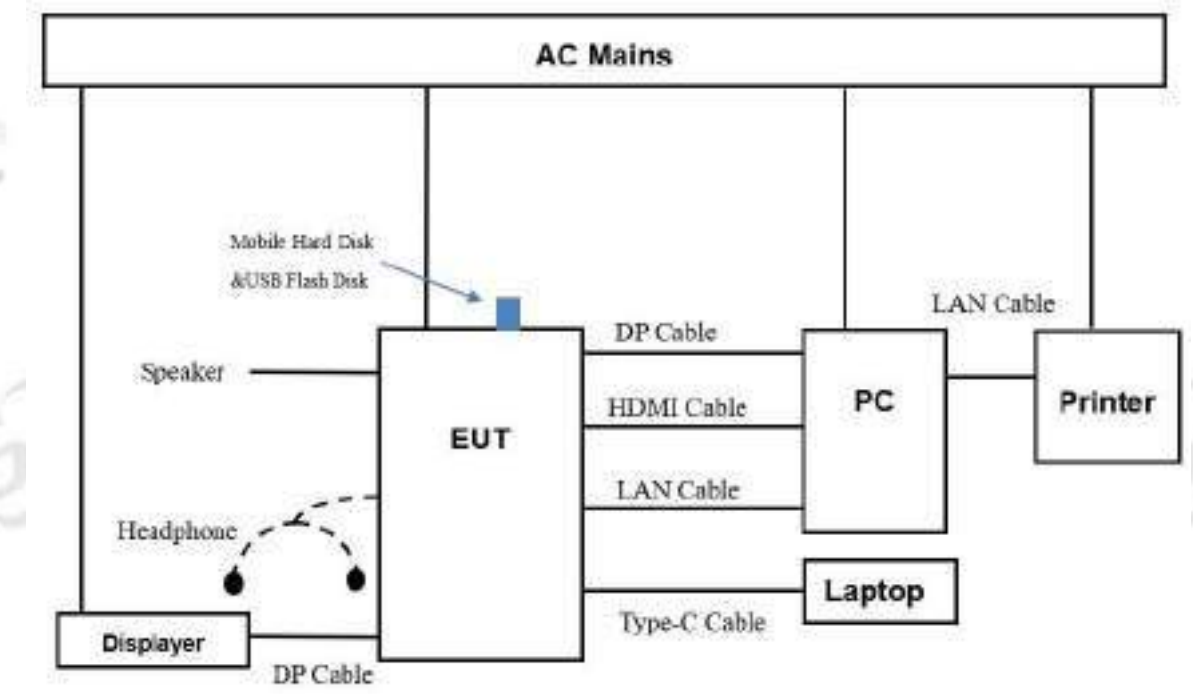
2.3 Test peripherals

Device	Manufacturer	Model No.	Serial No.	Remark
Desktop PC	HP	TPC-W058-MT	8CG0321Q58	N/A
Desktop PC	Samsung	DM700T6A-A99	JVTG98EJ2C004QX	N/A
Desktop PC	Samsung	DM700T6A-A99	JVTG98EJ2C0087L	N/A
Laptop	HP	HP ProBook 455R G6	5CD0122F5D	N/A
Laptop	LENOVO	WEI6 14 ITL	MP22HP0E	N/A
Keyboard	DELL	N/A	N/A	N/A
Mouse	DELL	N/A	N/A	N/A
Printer	SAMSUNG	CLP-365W/SEE	Z8DLBABC200070K	N/A
Headphone	N/A	N/A	N/A	N/A
Speaker	JBL	GO2+	N/A	N/A
Mobile hard disk	N/A	N/A	N/A	N/A

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USB flash disk	N/A	N/A	N/A	N/A
LAN Cable	N/A	N/A	N/A	N/A

2.4 Block diagram EUT configuration for test



Ferrite Core
Terminal

2.5 EUT operating mode(s)

Mode1: HDMI	Connect HDMI cable from PC's HDMI port to EUT's HDMI Port. Connect DP cable from EUT's DP out port to Displayer's DP Port. The test signal is scrolling 'H' with 1kHz audio playing. Connect LAN cable from PC's LAN port to EUT's LAN Port, execute ping operation from laptop to PC.
Mode2: DP	Connect DP cable from PC's DP port to EUT's DP Port. Connect DP cable from EUT's DP out port to Displayer's DP Port. The test signal is scrolling 'H' with 1kHz audio playing. Connect LAN cable from PC's LAN port to EUT's LAN Port, execute ping operation from laptop to PC.
Mode3: Type-C	Connect Type-C cable from Laptop's Type-C port to EUT's Type-C Port. The test signal is scrolling 'H' with 1kHz audio playing. Connect DP cable from EUT's DP out port to Displayer's DP Port. Connect LAN cable from PC's LAN port to EUT's LAN Port, execute ping operation from PC to laptop.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1651

2.6 Deviations of test standard

No Deviation.

2.7 Test laboratory

Tianjin Dongdian Testing Service Co., Ltd.
Address: Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park Development Area, Tianjin, China.
Tel: +86-22-58038033, http://www.ddttest.com, Email: ddt@dgddt.com
NVLAP (National Voluntary Laboratory Accreditation Program) CODE: 500036-0
CNAS (China National Accreditation Service for Conformity Assessment) CODE: L13402
FCC Designation Number: CN5004; FCC Test Firm Registration Number: 368676
ISED (Innovation, Science and Economic Development Canada) Company Number: 27768
Conformity Assessment Body Identifier: CN0125
VCCI Facility Registration Number: C-20089, T-20093, R-20125, G-20122

2.8 Measurement uncertainty

Test Item	**Uncertainty**
Conducted disturbance at mains terminals	3.4dB (150KHz-30MHz)
Uncertainty for Radiation Emission test (30MHz-1GHz)	5.2 dB (Antenna Polarize: H)
	5.2 dB (Antenna Polarize: V)
Uncertainty for Radiation disturbance test (1GHz to 6GHz)	5.0dB(1-6GHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

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3. Conducted Emission

3.1 General information

Test date	Jul. 22, 2022	Test engineer	Sam	
Climate condition	Ambient temperature	24.1±1 ℃	Relative humidity	46±1%
	Atmospheric pressure	100.1±0.2 kPa		
Test place	Shield Room 2#			

3.2 Test Equipment

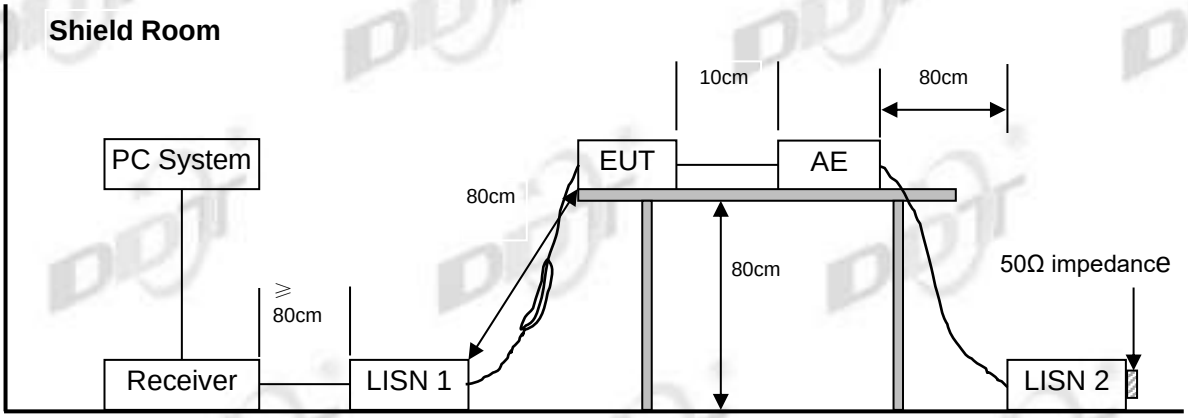
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Test Receiver	R&S	ESCI	101397	Mar. 03, 2022	1 Year
LISN 1	R&S	ENV216	101122	Mar. 23, 2022	1 Year
LISN 2	R&S	ENV216	101254	Mar. 03, 2022	1 Year
Test software	TOYO	EP5/CE	V 5.4.40	N/A	N/A

3.3 Reference Standard

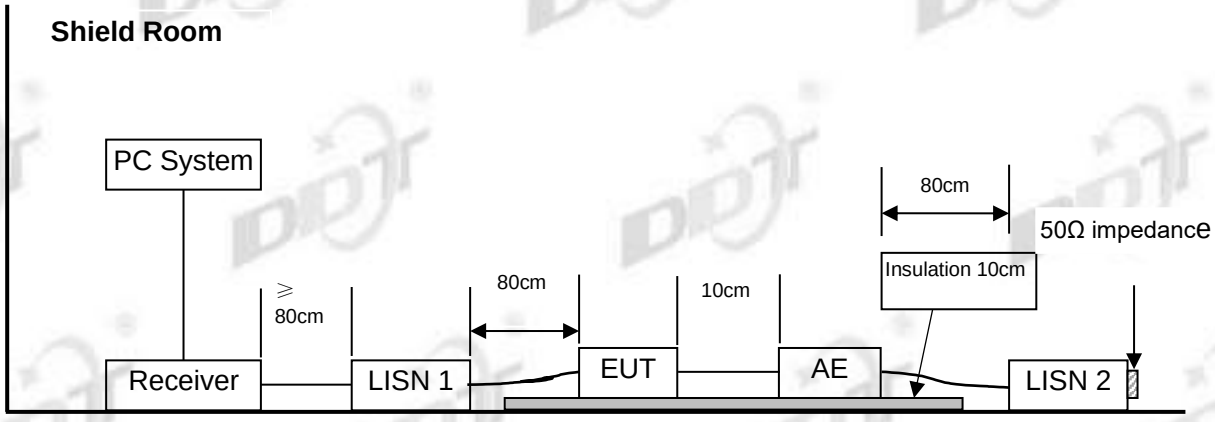
ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B

3.4 Block Diagram of Test Setup

For table-top equipment

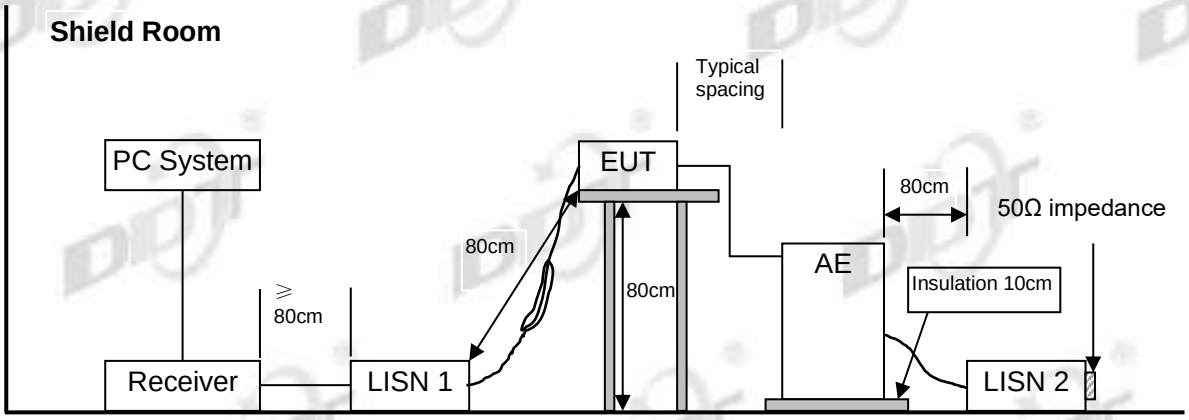


For floor standing equipment



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For combinations equipment



3.5 Limits

Class A

Frequency			Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz	~	500kHz	79	66
500kHz	~	30MHz	73	60

Class B

Frequency			Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz	~	500kHz	66 ~ 56*	56 ~ 46*
500kHz	~	5MHz	56	46
5MHz	~	30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.6 Test Procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm (table-top device)/0.1m (floor stand device) above the ground plane.
All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
All support equipment power received from a second LISN.
Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.
The Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
During the above scans, the emissions were maximized by cable manipulation.
The test mode(s) described in clause 2.5 were scanned during the preliminary test.
After the preliminary scan, we found the test mode producing the highest emission level.
The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.
EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.
A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.
The test data of the worst-case condition(s) was recorded.
The bandwidth of test receiver is set at 9 KHz.

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The EUT with following test modes were pre-tested:

No.	Operation Mode	Cable Length	Resolution
1.	Mode 1 HDMI	1.8m	2560x1440@75Hz
2.		1.8m	2560x1440@60Hz
3.		1.8m	1920*1080@60Hz
4.		1.8m	800*600@60Hz
5.		1.5m	2560x1440@75Hz
6.	Mode 2 DP	1.8m	2560x1440@75Hz
7. *		1.8m	2560x1440@60Hz
8.		1.8m	1920*1080@60Hz
9.		1.8m	800*600@60Hz
10.		1.5m	2560x1440@60Hz
11.	Mode 3 Type-C	1.8m	2560x1440@75Hz
12.		1.8m	2560x1440@60Hz
13.		1.8m	1920*1080@60Hz
14.		1.8m	800*600@60Hz
15.		1.5m	2560x1440@75Hz
16.	DP 2560x1440@60Hz with 1.5m power cord		
* Means the worst test mode.			

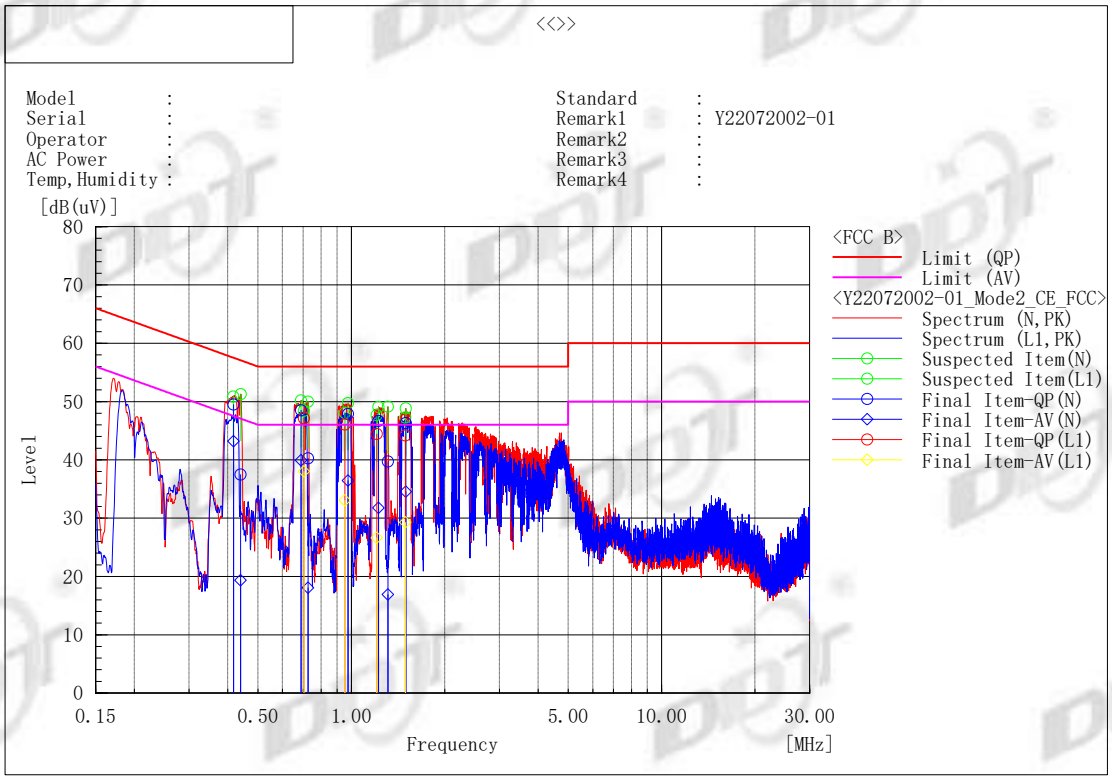
3.7 Test Result

PASS. (See below detailed test result)

Note 1: All emissions not reported below are too low against the prescribed limits.

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Operating Mode 2: DP IN



Final Result

--- N Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Mar [d
1	0.44002	27.8	9.6	9.7	37.5	19.3	57.1	47.1	19
2	0.41706	39.8	33.5	9.7	49.5	43.2	57.5	47.5	8
3	0.68891	38.8	30.2	9.7	48.5	39.9	56.0	46.0	7
4	0.97634	38.2	26.7	9.7	47.9	36.4	56.0	46.0	8
5	1.31179	29.9	7.1	9.8	39.7	16.9	56.0	46.0	16
6	1.49786	36.5	24.7	9.8	46.3	34.5	56.0	46.0	9
7	1.22372	36.9	22.0	9.8	46.7	31.8	56.0	46.0	9
8	0.72524	30.5	8.4	9.7	40.2	18.1	56.0	46.0	15

--- L1 Phase ---

No.	Frequency [MHz]	Reading QP [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB]	Result QP [dB(uV)]	Result CAV [dB(uV)]	Limit QP [dB(uV)]	Limit AV [dB(uV)]	Mar [d
1	0.70337	37.4	28.3	9.7	47.1	38.0	56.0	46.0	8
2	0.95361	36.3	23.4	9.7	46.0	33.1	56.0	46.0	10
3	1.2092	34.7	16.9	9.7	44.4	26.6	56.0	46.0	11
4	1.494	34.5	19.6	9.7	44.2	29.3	56.0	46.0	11

Note1) Level (Quasi-Peak and/or C/Average) = Meter Reading + Factor
Note2) Line = Polarity of input power (Live or Neutral)
N : Abbreviation of Neutral Polarity, L1 : Abbreviation of Live Polarity,
Note3) Factor = LISN Insertion Loss + Cable Loss
Note4) Margin = Limit – Level (Quasi-Peak and/or C/Average)
Note5) C/Average : Abbreviation of CISPR Average

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4. Radiated Emissions

4.1 General information

30MHz~1000MHz

Test date	Aug. 12, 2022	Test engineer	Jason	
Climate condition	Ambient temperature	21.8±1 ℃	Relative humidity	47±1%
	Atmospheric pressure	100.4±0.2kPa		
Test place	10m Chamber			

Above 1GHz

Test date	Aug. 13, 2022	Test engineer	Jason	
Climate condition	Ambient temperature	22.1±1 ℃	Relative humidity	52±1%
	Atmospheric pressure	100.4±0.2kPa		
Test place	10m Chamber			

4.2 Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	R&S	ESCI	101024	Mar. 03, 2022	1 Year
EMI Test Receiver	R&S	ESCI	101030	Mar. 29, 2022	1 Year
Bilog Antenna	TESEQ	CBL6112D	29068	Oct. 12, 2020	2 Year
Bilog Antenna	TESEQ	CBL6112D	29069	Oct. 12, 2020	2 Year
Amplifier	Sonoma	310N	300913	Feb. 15, 2022	1 Year
Amplifier	Sonoma	310N	300914	Feb. 15, 2022	1 Year
Ant Mast	Innco	MA4000	N/A	N/A	N/A
Ant Mast	Innco	MA4000	N/A	N/A	N/A
Mast Controller	Innco	CO2000	N/A	N/A	N/A
RF Selector 4CH	TOYO	NS4904N	Selector1	N/A	N/A
RF Selector 4CH	TOYO	NS4904N	Selector2	N/A	N/A
Test software	TOYO	EP5/RE	V 5.7.10	N/A	N/A
EMI Test Receiver	R&S	ESU26	100244	Mar. 03, 2022	1 Year
Double Ridged Horn Antenna	TESEQ	BHA 9118	31754	Oct. 12, 2021	2 Year
Pre-amplifier	TOYO	TPA0108-40	1409	Feb. 15, 2022	1 Year
Test software	TOYO	EP5/RE	V 5.7.10	N/A	N/A
Notes. N/A means Not applicable.					

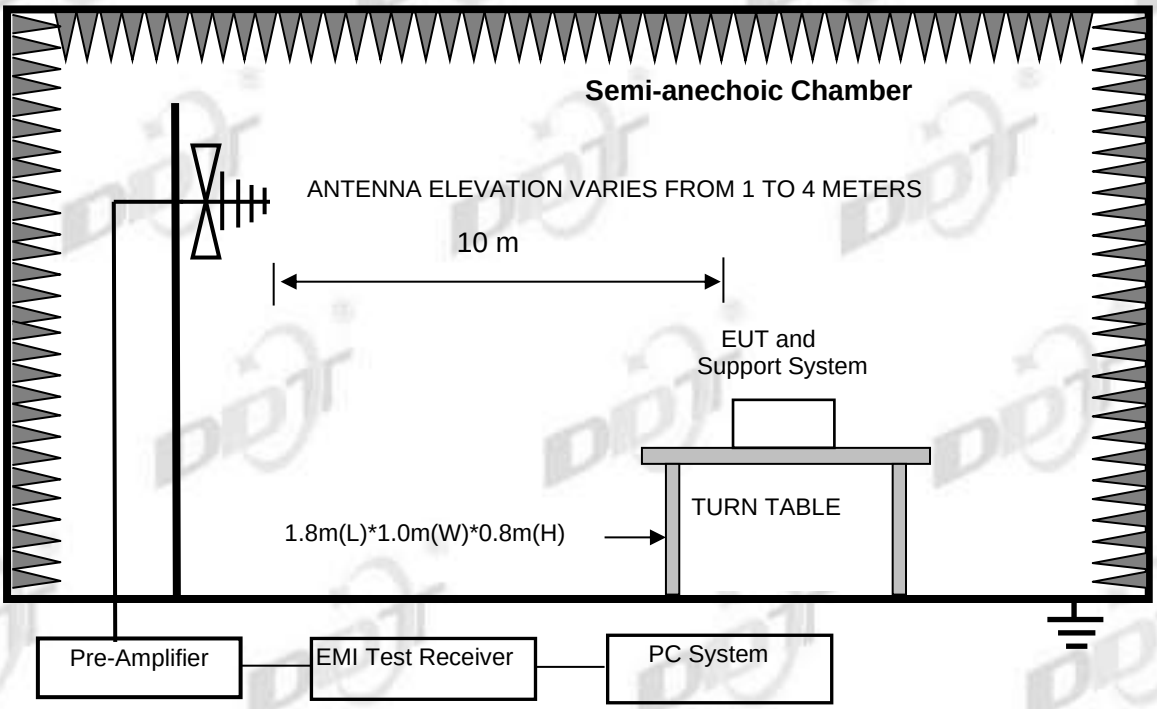
4.3 Reference Standard

ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B

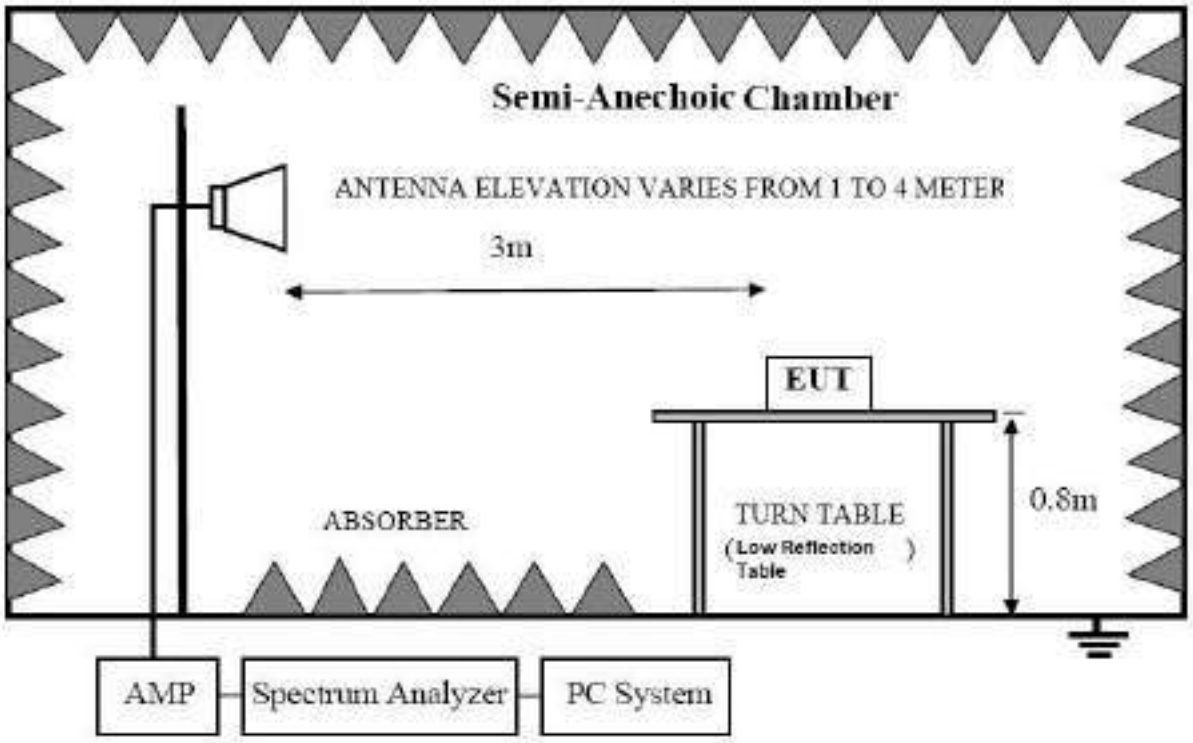
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4.4 Block diagram of test setup

Below 1GHz



Above 1GHz



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4.5 Limits

Class A

Frequency (MHz)	Distance (Meters)	Field Strengths Limits dB(μV)/m
30--88	10	39
88--216	10	43.5
216--960	10	46.5
960-1000	10	49.5
Above 1000	3	80.0(Peak), 60.0(Average)

Class B

Frequency (MHz)	Distance (Meters)	Field Strengths Limits dB(μV)/m
30--88	10	30.0
88--216	10	33.5
216--960	10	36.0
960-1000	10	44.0
Above 1000	3	74.0(Peak), 54.0(Average)

Note: (1) The smaller limit shall apply at the cross point between two frequency bands.

4.6 Test Procedure

Procedure of Preliminary Test
The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm (table-top device)/0.1m (floor stand device) above the ground plane.
Configuration EUT to simulate typical usage as described in clause 2.5 and test equipment as described in clause 4.2 of this report.
All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
Mains cables, telephone lines or other connections to auxiliary equipment located outside the test are shall drape to the floor, be fitted with ferrite clamps or ferrite tubes placed on the floor at the point where the cable reaches the floor and then routed to the place where they leave the turntable. No extension cords shall be used to mains receptacle.
The antenna was placed at 10 meters (for 30MHz – 1GHz) and 3 meters (for above 1 GHz) away from the EUT as stated in ANSI C63.4. The antenna connected to the Spectrum Analyzer via a cable and at times a pre-amplifier would be used.
The Analyzer / Receiver quickly scanned from 30MHz to 1GHz and 1GHz to 6GHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
The test mode(s) described in clause 2.5 were scanned during the preliminary test:
After the preliminary scan, we found the test mode producing the highest emission level. The EUT and cable configuration, antenna position, polarization and turntable position of the above highest emission level were recorded for the final test.
Procedure of Final Test
EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test.
The Analyzer / Receiver scanned from 30MHz to 1GHz and 1GHz to 6GHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and only Q.P. reading is presented.

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For emissions from 30MHz to 1GHz, Quasi-Peak values were measured with EMI Receiver and the bandwidth of Receiver is 120 KHz.
For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz
The test data of the worst-case condition(s) was recorded.

The EUT with following test modes were pre-tested:
For frequency range 30MHz ~ 1GHz:

No.	Operation Mode	Cable Length	Resolution
1.	Mode 1 HDMI	1.8m	2560x1440@75Hz
2.		1.8m	2560x1440@60Hz
3.		1.8m	1920*1080@60Hz
4.		1.8m	800*600@60Hz
5.		1.5m	2560x1440@75Hz
6.	Mode 2 DP	1.8m	2560x1440@75Hz
7.		1.8m	2560x1440@60Hz
8.		1.8m	1920*1080@60Hz
9.		1.8m	800*600@60Hz
10.		1.5m	2560x1440@75Hz
11. *	Mode 3 Type-C	1.8m	2560x1440@75Hz
12.		1.8m	2560x1440@60Hz
13.		1.8m	1920*1080@60Hz
14.		1.8m	800*600@60Hz
15.		1.5m	2560x1440@75Hz
16.	Type-C 2560x1440@75Hz with 1.5m power cord		
17.	Type-C 1920*1080@60Hz with headphone		
18.	Type-C 1920*1080@60Hz without headphone		
* Means the worst test mode.			

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For frequency range above 1GHz:

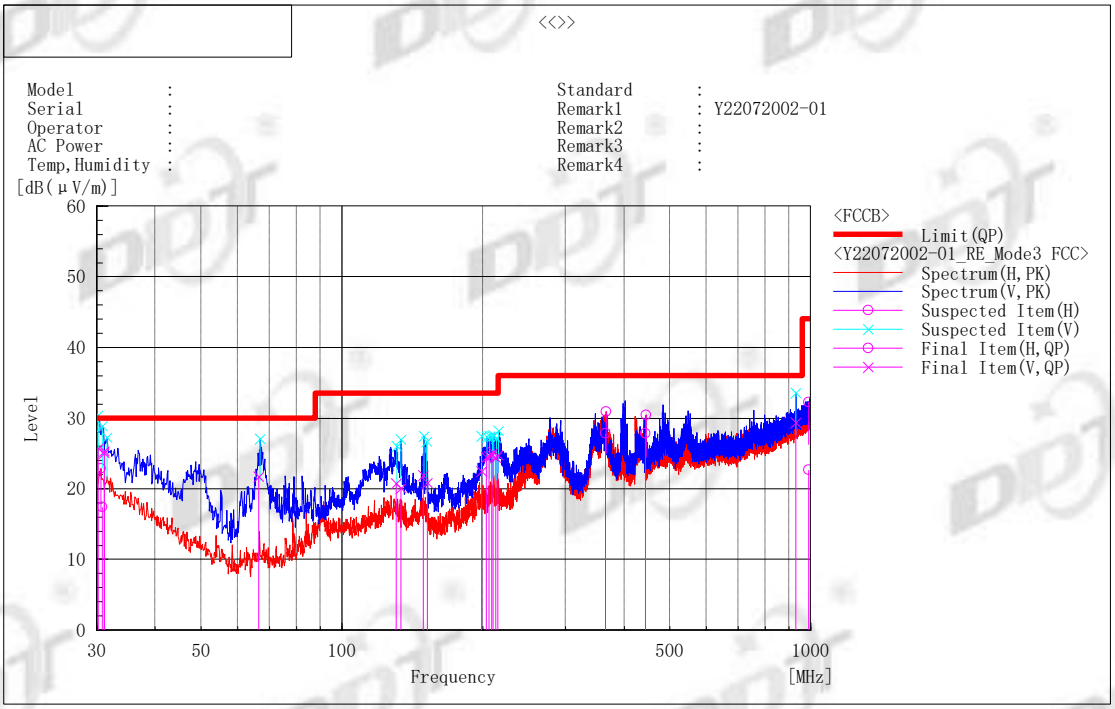
No.	Operation Mode	Cable Length	Resolution
1.	Mode 1 HDMI	1.8m	2560x1440@75Hz
2.		1.8m	2560x1440@60Hz
3.		1.8m	1920*1080@60Hz
4.		1.8m	800*600@60Hz
5.		1.5m	2560x1440@60Hz
6. *	Mode 2 DP	1.8m	2560x1440@75Hz
7.		1.8m	2560x1440@60Hz
8.		1.8m	1920*1080@60Hz
9.		1.8m	800*600@60Hz
10.		1.5m	2560x1440@75Hz
11.	Mode 3 Type-C	1.8m	2560x1440@75Hz
12.		1.8m	2560x1440@60Hz
13.		1.8m	1920*1080@60Hz
14.		1.8m	800*600@60Hz
15.		1.5m	2560x1440@60Hz
16.	DP 2560x1440@75Hz with 1.5m power cord		
17.	DP 1920*1080@60Hz with headphone		
18.	DP 1920*1080@60Hz without headphone		
* Means the worst test mode.			

4.7 Test result

PASS. (See below detailed test result)
Note: All emissions not reported below are too low against the prescribed limits.

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Operating Mode 3: Type-C IN



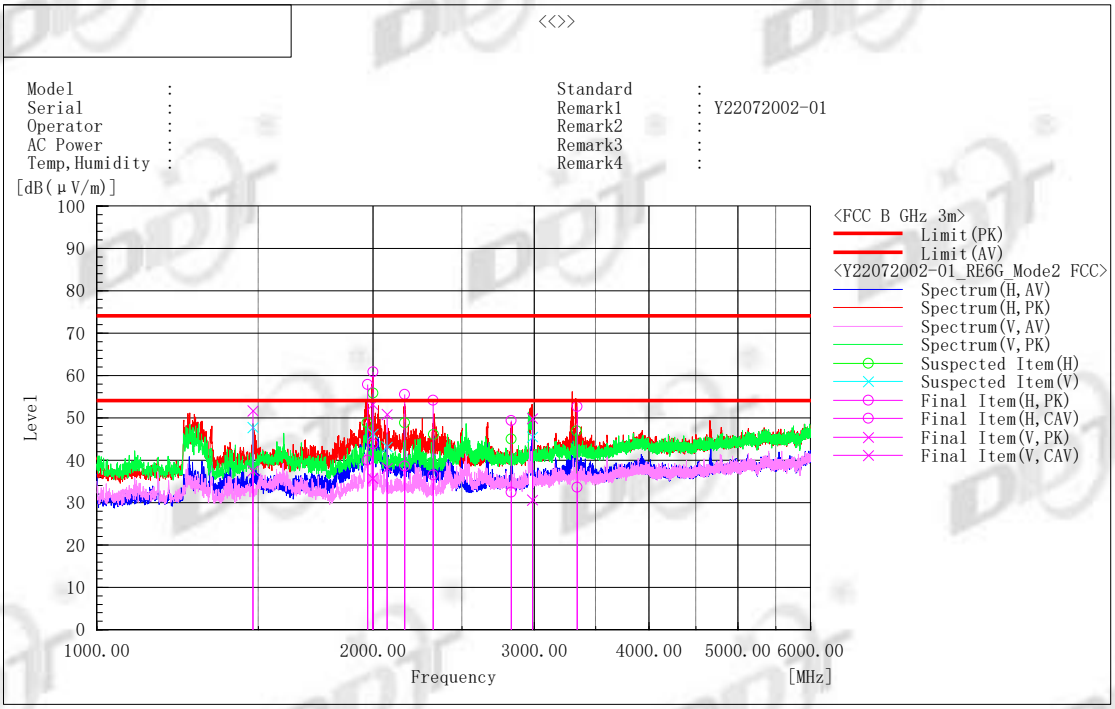
Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB]	Margin QP [cm]	Height	Angle [°]	System	Rema
1	30.791	H	22.6	-5.2	17.4	30.0	12.6	158.0	142.0	1	
2	364.943	H	33.9	-6.1	27.8	36.0	8.2	263.0	131.4	1	
3	444.608	H	31.2	-3.4	27.8	36.0	8.2	215.0	180.5	1	
4	991.076	H	17.1	5.6	22.7	44.0	21.3	100.0	137.7	1	
5	30.196	V	29.5	-3.8	25.7	30.0	4.3	354.0	261.0	2	
6	31.096	V	29.6	-4.3	25.3	30.0	4.7	100.0	306.7	2	
7	31.163	V	29.4	-4.4	25.0	30.0	5.0	101.0	262.6	2	
8	66.515	V	37.7	-16.0	21.7	30.0	8.3	152.0	83.5	2	
9	130.414	V	30.6	-9.8	20.8	33.5	12.7	187.0	29.3	2	
10	133.470	V	30.0	-9.9	20.1	33.5	13.4	126.0	349.4	2	
11	148.961	V	32.7	-10.8	21.9	33.5	11.6	106.0	357.0	2	
12	152.302	V	31.8	-11.0	20.8	33.5	12.7	100.0	18.2	2	
13	198.417	V	34.4	-11.9	22.5	33.5	11.0	101.0	16.5	2	
14	203.250	V	36.2	-11.7	24.5	33.5	9.0	100.0	11.2	2	
15	205.959	V	36.3	-11.7	24.6	33.5	8.9	100.0	94.8	2	
16	208.898	V	36.8	-12.0	24.8	33.5	8.7	103.0	95.7	2	
17	210.330	V	37.2	-12.0	25.2	33.5	8.3	100.0	111.8	2	
18	212.731	V	36.3	-11.9	24.4	33.5	9.1	100.0	137.3	2	
19	215.145	V	36.6	-11.8	24.8	33.5	8.7	101.0	123.5	2	
20	930.058	V	24.6	4.8	29.4	36.0	6.6	226.0	15.2	2	

Note) Receiving antenna polarization : Horizontal and/or Vertical
Test Distance : 10 m, Antenna Height : 1 m to 4 m
Level QP (Quasi-Peak) = Reading QP + Factor (Antenna Factor + Cable Loss - Amp. Gain)
Margin QP (Quasi-Peak) = Limit – Level QP

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Operating Mode 2: DP IN



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(μV)]	Reading CAV [dB(μV)]	c.f [dB(1/m)]	Result PK [dB(μV/m)]	Result CAV [dB(μV/m)]	Limit PK [dB(μV/m)]	Limit AV [dB]	Margin PK [cm]	Margin CAV [°]
1	1973.473	H	72.6	54.7	-14.7	57.9	40.0	74.0	54.0	16.1	14.0
2	2000.134	H	75.5	58.5	-14.7	60.8	43.8	74.0	54.0	13.2	10.2
3	2165.305	H	69.6	52.7	-14.1	55.5	38.6	74.0	54.0	18.5	15.4
4	2327.368	H	68.6	51.0	-14.5	54.1	36.5	74.0	54.0	19.9	17.5
5	2829.076	H	62.3	45.4	-13.0	49.3	32.4	74.0	54.0	24.7	21.6
6	3337.737	H	62.8	43.7	-10.1	52.7	33.6	74.0	54.0	21.3	20.4
7	1480.026	V	68.8	54.6	-17.1	51.7	37.5	74.0	54.0	22.3	16.5
8	1999.128	V	67.9	50.4	-14.7	53.2	35.7	74.0	54.0	20.8	18.3
9	2072.012	V	65.2	52.5	-14.4	50.8	38.1	74.0	54.0	23.2	15.9
10	2984.726	V	61.9	42.6	-12.0	49.9	30.6	74.0	54.0	24.1	23.4

Note1) (P) : Abbreviation of Antenna Polarity
Note2) Reading PK / C/AV : Received raw Peak / C/Average signal
Note3) Factor = Antenna factor + Cable loss – Amplifier gain
Note4) Level PK / C/AV = Reading PK / C/AV + Factor, Real signal Peak / C/Average level
Note5) Margin PK / C/AV = Limit – Level PK / C/AV
PK : Abbreviation of Peak
C/AV : Abbreviation of CISPR Average

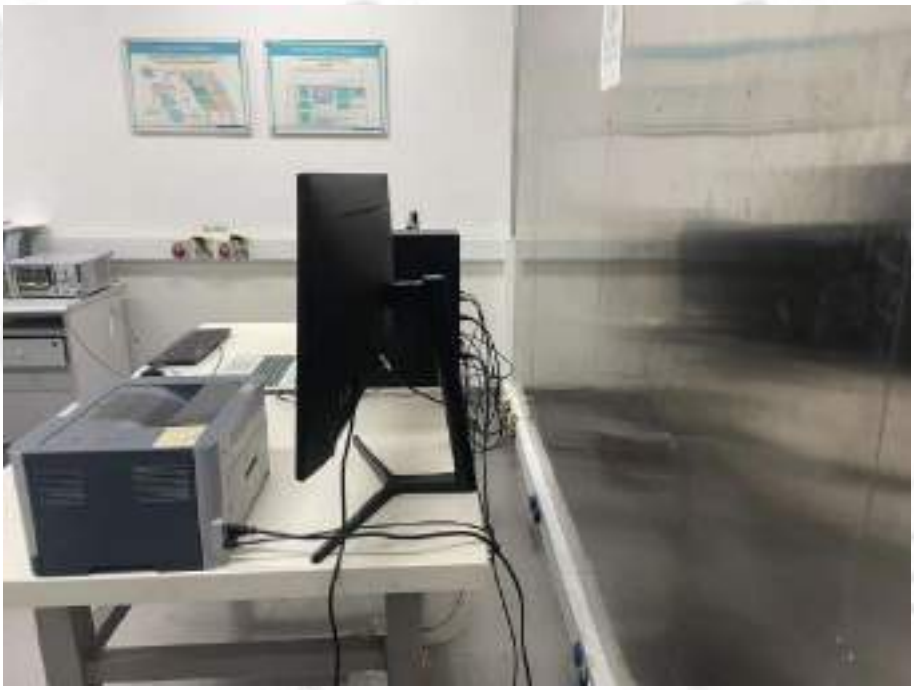
Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1663

5. Test Setup Photos

5.1 Conducted emission at the mains ports



[Front]



[Rear]

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5.2 Radiated emission

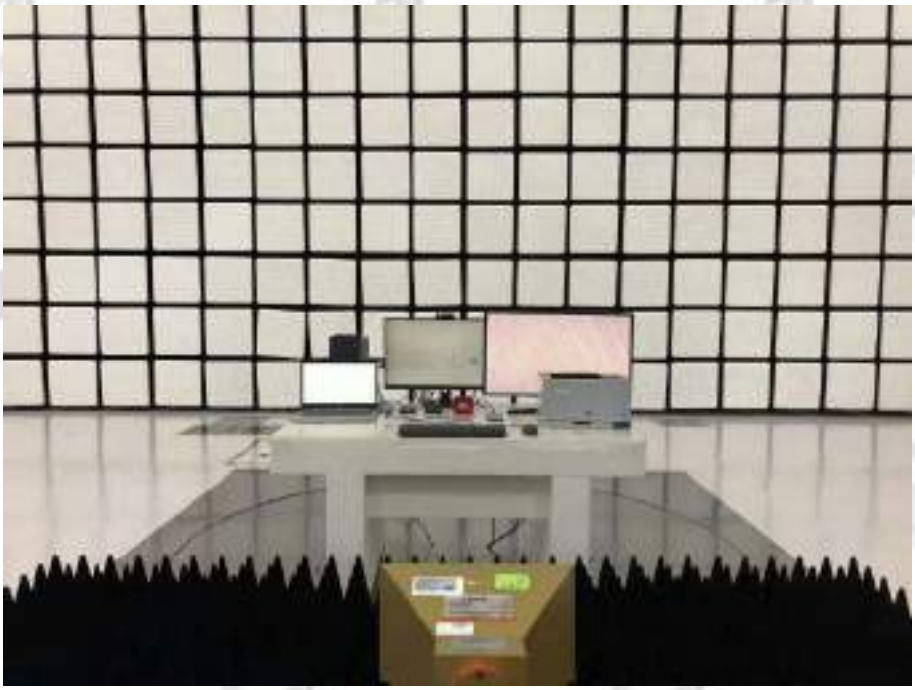


[Front]

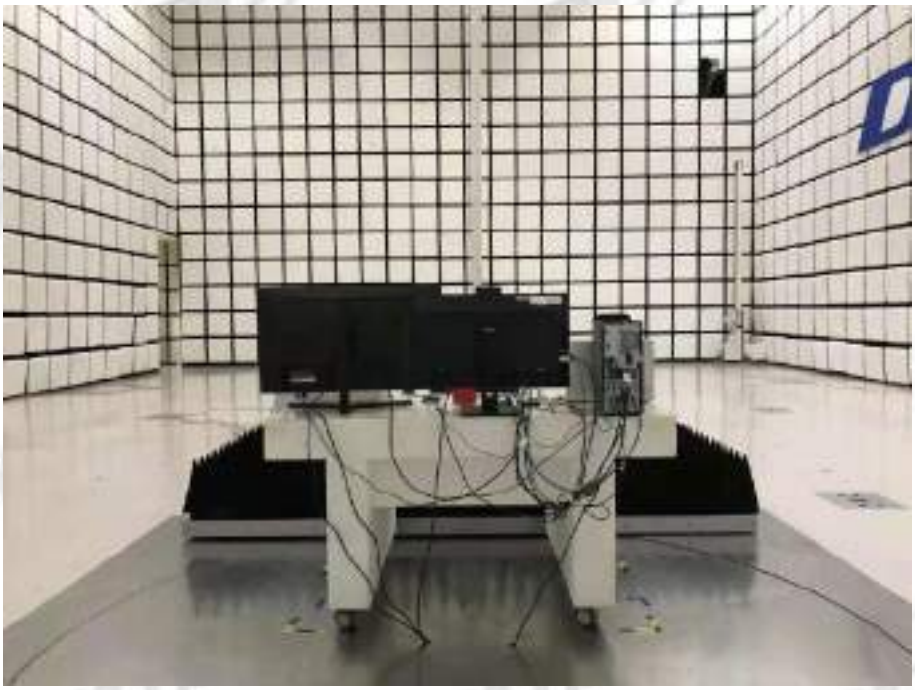


[Rear]

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[Front]



[Rear]

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1666

Annex I

Regulatory Statement and Label Marking Advice for the FCC SDoC

1. Marking Suggested for the label:

Trade Name and model number This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

2. Statement suggested for the User Manual:

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

Notes: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

--Reorient or relocate the receiving antenna.

--Increase the separation between the equipment and receiver.

--Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

--Consult the dealer or an experienced radio/TV technician for help.

Note: If shielded cables or special accessories are required for compliance, a statement must be included which instructs the user to employ them, for example, Shielded cables must be used with this unit to ensure compliance with the Class B FCC limits.

END OF REPORT

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1667

EMF ASSESSMENT REPORT

Report No.: DDT-B22072002-1E04

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Equipment under Test	:	LCD Monitor
Model No.	:	27B1U56,27B1U56******* ("*" = 0-9, A-Z, a-z, +, -, /, \ or blank)
Trade Mark	:	PHILIPS

Issued By: Tianjin Dongdian Testing Service Co., Ltd.

Address: Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park, Development Area, Tianjin, China.

Tel: +86-22-58038033, E-mail: ddt@dgddt.com, http://www.ddttest.com

REPORT

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Assessment Report Declare

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Equipment under Test	:	LCD Monitor
Model No.	:	27B1U56,27B1U56******* ("*" = 0-9, A-Z, a-z, +, -, /, \ or blank)
Trade Mark	:	PHILIPS

Assessment Standard Used:
EN 62311:2008, EN IEC 62311:2020 Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz to 300 GHz)

We Declare:
The equipment described above is tested and assessed by Tianjin Dongdian Testing Service Co., Ltd. and in the configuration assessed the equipment complied with the standards specified above. The tested and assessed results are contained in this test report and Tianjin Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these assessments.
After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above CE standards.

Report No.:	DDT-B22072002-1E04		
Date of Receipt:	Jul. 21, 2022	Date of Test:	Jul. 21, 2022

Prepared By:

May Zhang/Engineer

Approved By:

Aaron Zhang/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Tianjin Dongdian Testing Service Co., Ltd.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1670

Revision history

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Aug. 26, 2022	

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1671

1. Summary of assessment results

Description of Assessment Item	Standard	Result
Emission of electric fields	EN 62311:2008 EN IEC 62311:2020	PASS
Emission of electromagnetic fields	EN 62311:2008 EN IEC 62311:2020	PASS

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1672

2. General assessment information

2.1 Description of EUT

EUT* Name	:	LCD Monitor
Model Number	:	27B1U56,27B1U56******* ("*" = 0-9, A-Z, a-z, +, -, /, \ or blank)
Model Differences	:	All models difference is in sale marketing.
Test Model	:	27B1U5601H
Serial Number	:	N/A
EUT function description	:	Please refer to user manual of this device
Power supply	:	100~240V 50/60Hz
Maximum work frequency	:	295 MHz
Sample Type	:	Series production

Note: EUT is the ab. of equipment under test.

2.2 Port of EUT

Port	Description
☑AC mains power port	AC Main Port
☒DC network power port	N/A
☑Wired network port	One LAN port
☑Signal data/control port	One HDMI in port, One DP in port, Three Type-C in ports, One DP out port, Four USB Ports
☒Antenna port	N/A
☒Broadcast receiver tuner port	N/A
☑Audio output port	One Audio out Port, Two Speakers
☒Video output port	N/A
☒Other:	N/A
Note: "☒" means the product does not have this port, "☑" means the product has this port, N/A means not applicable	

2.3 Accessories of EUT

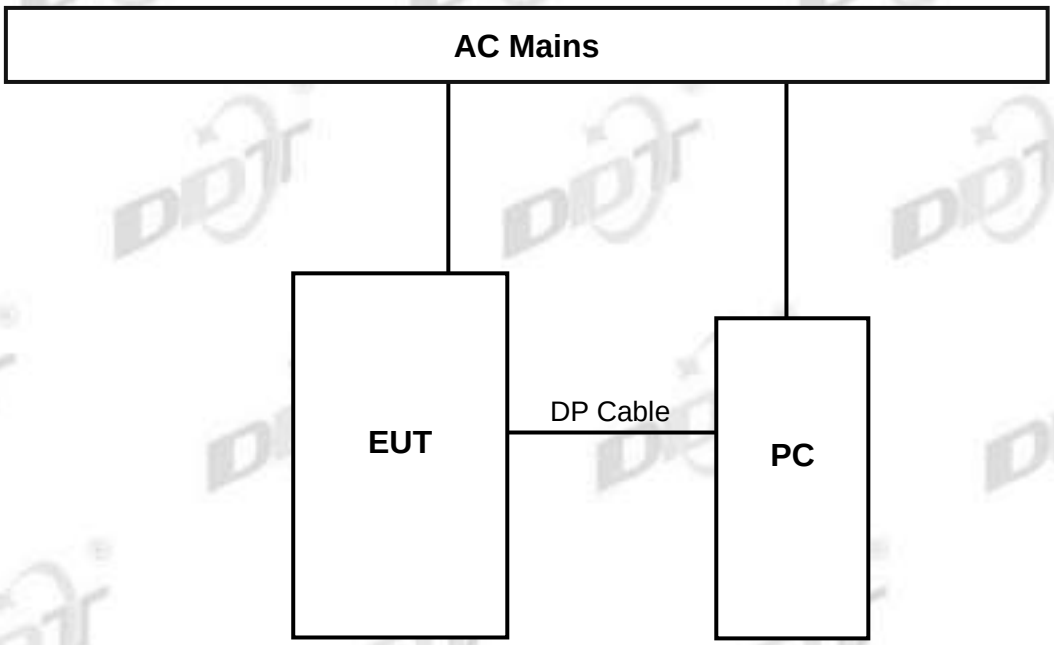
Description of Accessories	Manufacturer	Model number	Description	Remark
AC Cable	N/A	N/A	Length: 1.5m/1.8m, Unshielded	N/A
HDMI Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A
DP Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A
Type-C Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A
AUDIO Cable	N/A	N/A	Length: 1.5m/1.8m, Shielded	N/A

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1673

2.4 Test peripherals

Device	Manufacturer	Model No.	Serial No.	Remark
PC	DELL	Vostro 5890	700SBD3	N/A

2.5 Block diagram EUT configuration for test



Ferrite Core
Terminal

2.6 Test mode description:

Mode 1: DP In
Connect DP cable from PC's DP port to EUT's DP Port.
The test signal is color bars with moving picture element according to ITU-R BT 471-1.
Testing resolution: 2560x1440@75Hz

2.7 Deviations of assessment standard

No Deviation.

2.8 Test laboratory

Tianjin Dongdian Testing Service Co., Ltd.
Address: Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park Development Area, Tianjin, China.
Tel: +86-22-58038033, http://www.ddttest.com, Email: ddt@dgddt.com
NVLAP (National Voluntary Laboratory Accreditation Program) CODE: 500036-0
CNAS (China National Accreditation Service for Conformity Assessment) CODE: L13402
FCC Designation Number: CN5004; FCC Test Firm Registration Number: 368676
ISED (Innovation, Science and Economic Development Canada) Company Number: 27768
Conformity Assessment Body Identifier: CN0125
VCCI Facility Registration Number: C-20089, T-20093, R-20125, G-20122

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1674

2.9 Measurement uncertainty

Test Item	Uncertainty
Emission of electric fields	3.2 dB (100KHz-6GHz)
Emission of electromagnetic fields	3.8 dB (1Hz-400KHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

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3. EMF Assessment (B-Field and E-Field Strength)

3.1 General information

Test date	Jul. 21, 2022	**Test engineer**	May	
Climate condition	**Ambient temperature**	24.5±1 ℃	**Relative humidity**	45±1%
	Atmospheric pressure	100.6±0.2kPa		
Test place	3m Chamber 1#			

3.2 Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Exposure Level Tester	Narda	ELT-400	M-0425	Feb. 26, 2022	1 Year
B-Field Probe	Narda	100 cm²Probe	M-0440	Feb. 26, 2022	1 Year
Exposure Level Tester	Wavecontrol	SMP2	20SN1419	Feb. 16, 2022	1 Year
E-Field Probe	Wavecontrol	WPF8	20WP041176	Feb. 16, 2022	1 Year

3.3 Reference Standard

EN 62311:2008, EN IEC 62311:2020 applies to electronic and electrical equipment for which no dedicated product
standard or product family standard regarding human exposure to electromagnetic fields applies. It covers equipment with intentional or non-intentional radiators as well as a combination thereof.

It provides assessment methods and criteria to evaluate equipment against limits on exposure of people related to electric, magnetic and electromagnetic fields.

The frequency range covered is from 0 Hz to 300 GHz.
Reference Levels
For electric, magnetic and electromagnetic fields (0Hz to 300GHz, unperturbed r.m.s. values)

Frequency range	E-field strength	H-field strength	B-field	Equivalent plane wave power density S eq
	V/m	A/m	μT	W/m²
0 Hz - 1 Hz	-	$3,2 \times 10^{4}$	4×10^{4}	-
1 Hz - 8 Hz	10 000	$3,2 \times 10^{4} / f^{2}$	$4 \times 10^{4} / f^{2}$	-
8 Hz - 25 Hz	10 000	4 000/f	5 000/f	-
0,025 kHz - 0,8 kHz	250/f	4/f	5/f	-
0,8 kHz - 3 kHz	250/f	5	6,25	-
3 kHz - 150 kHz	87	5	6,25	-
0,15 MHz - 1 MHz	87	0,73/f	0,92/f	-
1 MHz - 10 MHz	$87/f^{1/2}$	0,73/f	0,92/f	-
10 MHz - 400 MHz	28	0,073	0,092	2
400 MHz - 2 000 MHz	$1,375\ f^{1/2}$	$0,003\ 7\ f^{1/2}$	$0,004\ 6\ f^{1/2}$	f/200
2 GHz - 300 GHz	61	0,16	0,20	10

f is as indicated in the frequency range column.

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3.4 Assessment Result

PASS. (See below detailed test result)

Y22072002-01

B-Field Result (Frequency Range: 1Hz to 400KHz)

Operation Mode	Position	Distance	B-Field Strength Level(μT)	Limit(μT)	Result
DP	Front	20cm	0.86	2.3	Pass
	Back		0.90	2.3	Pass
	Left		0.85	2.3	Pass
	Right		0.87	2.3	Pass
	Up		0.83	2.3	Pass
	Down		0.91	2.3	Pass

E-Field Strength Result (Frequency Range: 300KHz to 18GHz)

Operation Mode	Position	Distance	E-Field Strength Level(V/m)	Limit(V/m)	Result
DP	Front	20cm	0.81	28	Pass
	Back		0.83	28	Pass
	Left		0.89	28	Pass
	Right		0.82	28	Pass
	Up		0.85	28	Pass
	Down		0.92	28	Pass

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3.5 Test Photo





END OF REPORT

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1678

Certificate of Compliance

No. : DDT-Z22072002-1E01

We hereby certify that the following product has been tested by Tianjin Dongdian Testing Service Co., Ltd., with the listing standards and found in conformity with the EC Council Directive of 2014/30/EU. It is possible to use CE marking to demonstrate the conformity with this EMC Directive.

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Product	:	LCD Monitor
Model Number	:	27B1U56,27B1U56******* ("*" = 0-9, A-Z, a-z, +, -, /, \ or blank)
Trade Name	:	PHILIPS
Test Standards	:	EN 55032:2015, EN 55032:2015/A11:2020, EN 55032:2015/A1:2020, CISPR 32:2015/AMD1:2019, AS/NZS CISPR 32:2015 AMD 1:2020, BS EN 55032:2015, BS EN 55032:2015+A11:2020, BS EN 55032:2015+A1:2020 EN 55035:2017, EN 55035:2017/A11:2020, CISPR 35:2016, BS EN 55035:2017, BS EN 55035:2017+A11:2020 EN 61000-3-2:2014, EN IEC 61000-3-2:2019/A1:2021, BS EN 61000-3-2:2014, BS EN IEC 61000-3-2:2019+A1:2021 EN 61000-3-3:2013, EN 61000-3-3:2013/A1:2019, EN 61000-3-3:2013/A2:2021, BS EN 61000-3-3:2013, BS EN 61000-3-3:2013+A1:2019, BS EN 61000-3-3:2013/A2:2021, IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014/AMD1:2017, IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2020
Test Report No.	:	DDT-B22072002-1E01

CE

Authorized Sig.

Aaron Zhang

Aaron Zhang/EMC Manager

Date of Issue: Aug. 26, 2022

The statement is based on a single evaluation of one sample of mentioned products above. It does not imply an assessment of the whole production and does not permit the use of the test lab logo

Tianjin Dongdian Testing Service Co., Ltd.

Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park Development Area, Tianjin, China.

Tel: +86-22-58038033, E-mail: ddt@dgddt.com, http://www.ddttest.com

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1679

Declaration of Conformity

No. : DDT-Z22072002-1E02

We hereby certify that the following product has been tested by Tianjin Dongdian Testing Service Co., Ltd. with the listing standards and the test results conformity with those standards.

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Product	:	LCD Monitor
Model Number	:	27B1U56,27B1U56******* ("*" = 0-9, A-Z, a-z, +, -, /, \ or blank)
Trade Name	:	PHILIPS
Test Standards	:	ANSI C63.4: 2014; 47 CFR FCC Part 15 Subpart B
Test Report No.	:	DDT-B22072002-1E02

Authorized Signer

Aaron Zhang

Aaron Zhang/EMC Manager

Date of Issue: Aug. 26, 2022

The statement is based on a single evaluation of one sample of mentioned products above. It does not imply an assessment of the whole production and does not permit the use of the test lab logo

Tianjin Dongdian Testing Service Co., Ltd.

Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park Development Area, Tianjin, China.

Tel: +86-22-58038033, E-mail: ddt@dgddt.com, http://www.ddttest.com

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1680

Declaration of Conformity

No. : DDT-Z22072002-1E03

We hereby certify that the following product has been tested by Tianjin Dongdian Testing Service Co., Ltd. with the listing standards and the test results conformity with those standards.

Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Product	:	LCD Monitor
Model Number	:	27B1U56,27B1U56******* ("*" = 0-9, A-Z, a-z, +, -, /, \ or blank)
Trade Name	:	PHILIPS
Test Standards	:	ICES-003 Issue 7: October 2020
Test Report No.	:	DDT-B22072002-1E03

Authorized Signer:

Aaron Zhang

Aaron Zhang/EMC Manager

Date of Issue: Aug. 26, 2022

The statement is based on a single evaluation of one sample of mentioned products above. It does not imply an assessment of the whole production and does not permit the use of the test lab logo

Tianjin Dongdian Testing Service Co., Ltd.
Building D-1, No. 19, Weisi Road, Microelectronics Industrial Park Development Area, Tianjin, China.
Tel: +86-22-58038033, E-mail: ddt@dgddt.com, http://www.ddttest.com

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1681

1.0 Reference and Address			
Report Number	220801237SHA-001	Original Issued: 22-Aug-2022	Revised: None
Standard(s)	ENERGY STAR® Program Requirements for Displays Version 8.0		

Applicant	MMD- Monitors & Displays Nederland B.V.	Manufacturer 1	TPV Electronics(Fujian) Co., Ltd.
Address	Prins Bernhardplein 200,1097 JB Amsterdam	Address	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province
Country	The Nederlands	Country	China
Contact	Lissa Wang	Contact	Winter Feng
Phone	+86-021-80217644	Phone	+86-591-85285555
FAX	+86-021-80217400	FAX	+86-591-85285447
Email	lissa.wang@mmd-p.com	Email	winter.feng@tpv-tech.com

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Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1682

2.0 Product Description					
Product	Display (LCD Monitor)				
Brand Name	Philips				
Description	The product covered by this report is a Display (LCD Monitor)				
Models	27B1U5601H(27B1U56)				
Model Similarity	NA				
Ratings	100-240Vac 50/60Hz 2A				
Other Ratings	NA				
Date Available	08/22/2022	Market Availability	Yes	OEM	TPV Electronics(Fujian) Co. Ltd
Major Markets	Canada,Japan,Taiwan,United States				
Trans Type	Initial Certification: Model Meets ENERGY STAR Requirements				
Notes	NA				
UPC					
Reason no UPC	UPC Code Not Yet Assigned - Partner Will Provide Later				
Other reason no UPC					

Additional Model Details (Optional)	Model Name and Number	Identifying Information

Original Certificate Actual Issued Date for Model Tested (Only Applies to Revised Reports)	NA

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1683

3.0 Product Photographs

Photo 1 - External View (front)

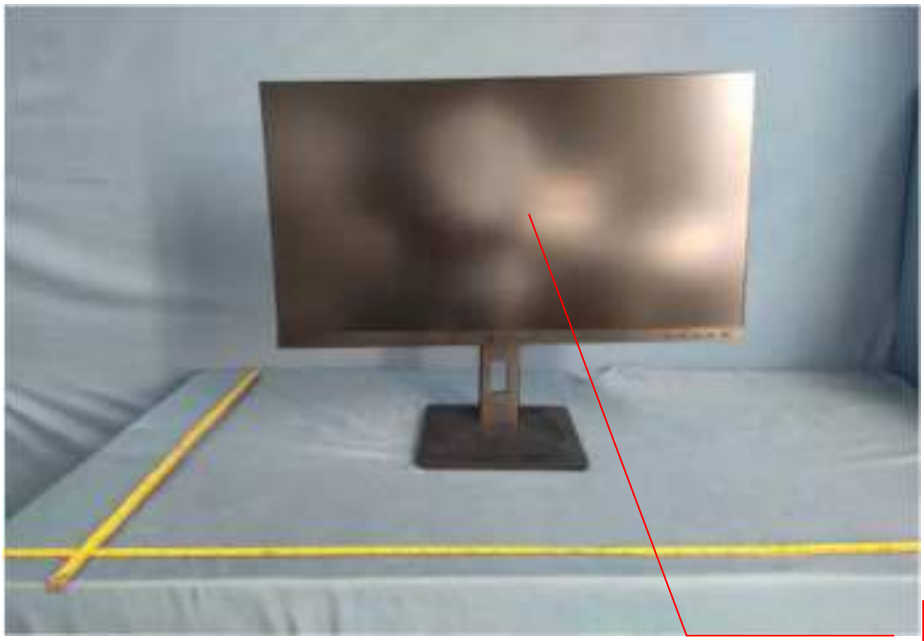
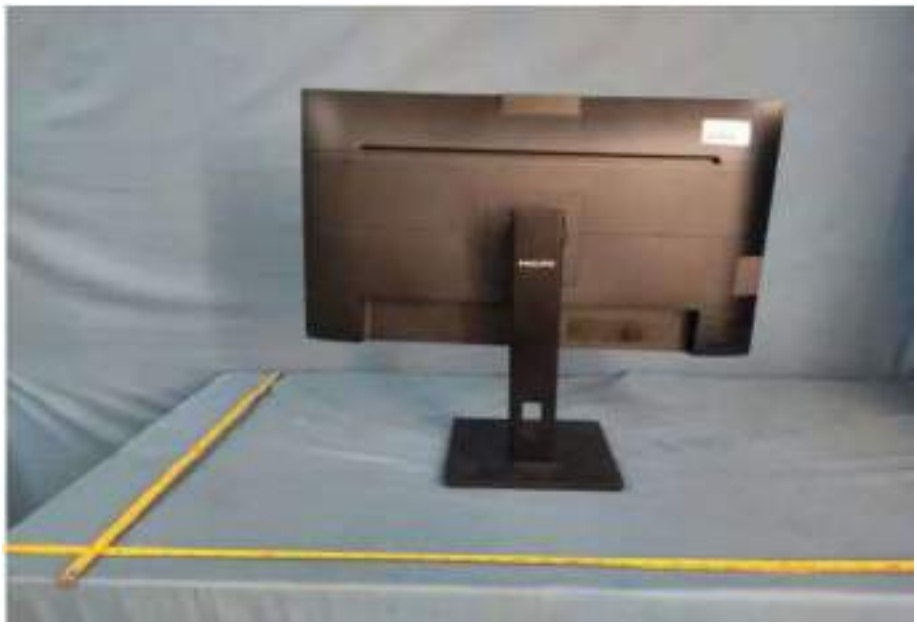


Photo 2 - External View (back)



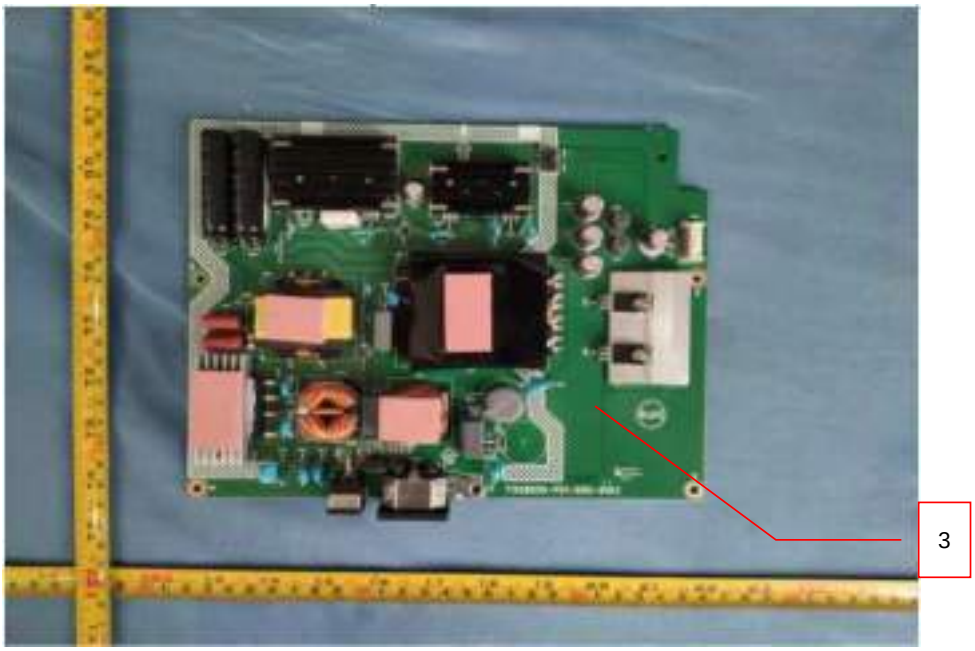
Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.0013177 pg. 1684

3.0 Product Photographs

Photo 3 - Main Board



Photo 4- Power Board



Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.0013177 pg. 1685

4.0 Critical Components						
Photo #	Item no.[1]	Name	Manufacturer/ trademark[2]	Type / model[2]	Technical data and securement means	Mark(s) of conformity [3]
1	1	LCD panel	TPV	TPM270********* (* can be 0~9, A~Z, ".", "-" or blank)	27 inches, LED backlighting. TPM270WF1-KCJP02 is tested as a representation.	NR
3	2	Main Board	TPV	715GD279	I/P:19.5V/10.2A max	NR
4	3	Power Board	TPV	715GB656	I/P:100-240Vac,50/60Hz,2A O/P:19.5V/10.2A max	NR

NOTES:

1) Not all item numbers are indicated (called out) in the photos, as their location is obvious.

2) "Various" means any type, from any manufacturer that complies with the "Technical data and securement means" and meets the "Mark(s) of conformity" can be used.

3) Indicates specific marks to be verified, which assures the agreed level of surveillance for the component. "NR" - indicates: a) Unlisted and only visual examination is necessary or b) marks are not required to be verified.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1686

5.0 Critical Unlisted CEC Components
Periodic Evaluation of Critical Unlisted Components by the Intertek Component Evaluation Centers (CEC) is not required under the INTERTEK ENERGY STAR Program.

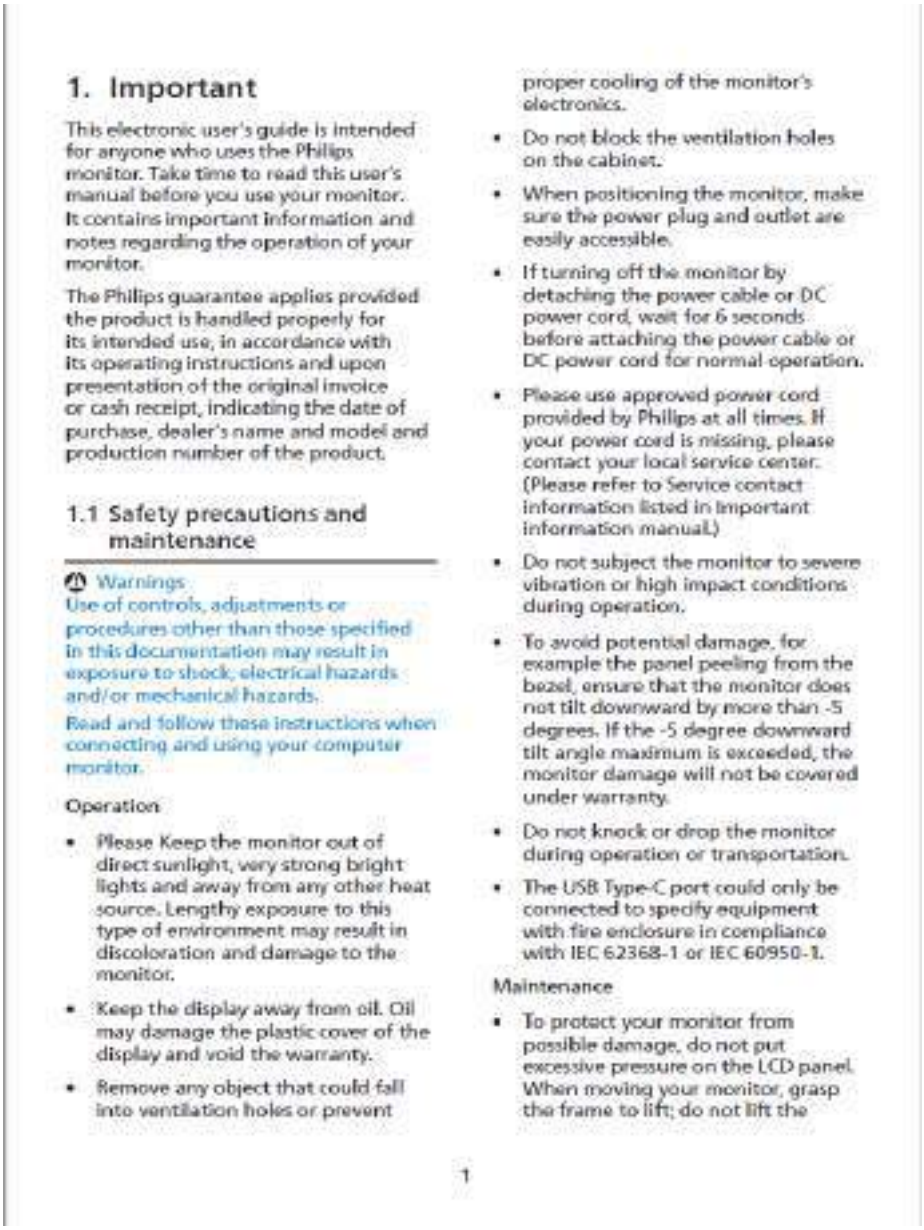
Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1687

6.0 Critical Features
Critical Features/Components - An essential part, material, subassembly, system, software, or accessory of a product that has a direct bearing on the product's conformance to applicable requirements of the ENERGY STAR® Program Requirements. Listed Component - A component part, which has been previously Listed or Certified by an accredited Certification Organization with no restrictions and is used in the intended application within its ratings. Recognized Component - A component part, which has been previously evaluated by an accredited certification body with restrictions and must be evaluated as part of the basic product considering the restrictions as specified by the Conditions of Acceptability. Unlisted Component - A part that has not been previously evaluated to the appropriate designated component standard. It may also be a Listed or Recognized component that is being used outside of its evaluated Listing or component recognition.
Construction Details - For specific construction details, reference should be made to the photographs and descriptions. All dimensions are approximate unless specified as exact or within a tolerance. In addition to the specific construction details described in this Report, the following general requirements also apply.
1. Product Safety Compliance - NA
2. EMI Compliance - NA
3. Schematics - NA
4. Installation, Operating and Safety Instructions - Instructions for installation and use of this product are provided by the manufacturer. Refer to Illustration No.1-2 for details.
5. Package Markings - NA
6. Warranty Information - NA
7. Marking Label - Refer to Illustration No.3.for details.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1688

7.0 Illustrations

Illustration 1 - Installation and Safety instruction



1. Important

This electronic user's guide is intended for anyone who uses the Philips monitor. Take time to read this user's manual before you use your monitor. It contains important information and notes regarding the operation of your monitor.

The Philips guarantee applies provided the product is handled properly for its intended use, in accordance with its operating instructions and upon presentation of the original invoice or cash receipt, indicating the date of purchase, dealer's name and model and production number of the product.

1.1 Safety precautions and maintenance

Warnings
Use of controls, adjustments or procedures other than those specified in this documentation may result in exposure to shock, electrical hazards and/or mechanical hazards.

Read and follow these instructions when connecting and using your computer monitor.

Operation

- Please Keep the monitor out of direct sunlight, very strong bright lights and away from any other heat source. Lengthy exposure to this type of environment may result in discoloration and damage to the monitor.
- Keep the display away from oil. Oil may damage the plastic cover of the display and void the warranty.
- Remove any object that could fall into ventilation holes or prevent proper cooling of the monitor's electronics.
- Do not block the ventilation holes on the cabinet.
- When positioning the monitor, make sure the power plug and outlet are easily accessible.
- If turning off the monitor by detaching the power cable or DC power cord, wait for 6 seconds before attaching the power cable or DC power cord for normal operation.
- Please use approved power cord provided by Philips at all times. If your power cord is missing, please contact your local service center. (Please refer to Service contact information listed in Important information manual.)
- Do not subject the monitor to severe vibration or high impact conditions during operation.
- To avoid potential damage, for example the panel peeling from the bezel, ensure that the monitor does not tilt downward by more than -5 degrees. If the -5 degree downward tilt angle maximum is exceeded, the monitor damage will not be covered under warranty.
- Do not knock or drop the monitor during operation or transportation.
- The USB Type-C port could only be connected to specify equipment with fire enclosure in compliance with IEC 62368-1 or IEC 60950-1.

Maintenance

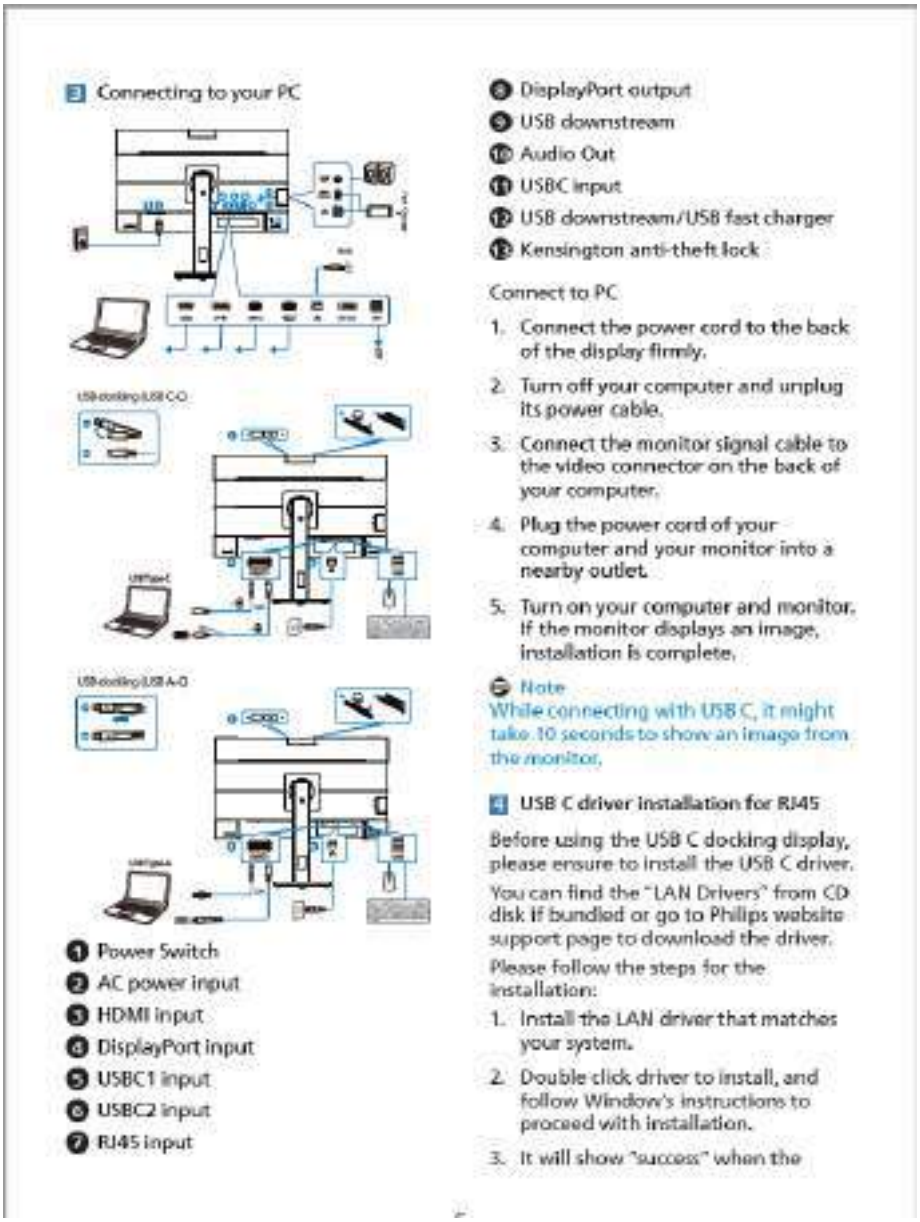
- To protect your monitor from possible damage, do not put excessive pressure on the LCD panel. When moving your monitor, grasp the frame to lift; do not lift the

1

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1689

7.0 Illustrations

Illustration 2 - Installation and Safety instruction (Continued)



3 Connecting to your PC

1. Power Switch
2. AC power input
3. HDMI input
4. DisplayPort input
5. USBC1 input
6. USBC2 input
7. RJ45 input
8. DisplayPort output
9. USB downstream
10. Audio Out
11. USBC input
12. USB downstream/USB fast charger
13. Kensington anti-theft lock

Connect to PC

1. Connect the power cord to the back of the display firmly.
2. Turn off your computer and unplug its power cable.
3. Connect the monitor signal cable to the video connector on the back of your computer.
4. Plug the power cord of your computer and your monitor into a nearby outlet.
5. Turn on your computer and monitor. If the monitor displays an image, installation is complete.

Note
While connecting with USB C, it might take 10 seconds to show an image from the monitor.

4 USB C driver installation for RJ45

Before using the USB C docking display, please ensure to install the USB C driver.

You can find the "LAN Drivers" from CD disk if bundled or go to Philips website support page to download the driver.

Please follow the steps for the installation:

1. Install the LAN driver that matches your system.
2. Double click driver to install, and follow Window's instructions to proceed with installation.
3. It will show "success" when the

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1690

7.0 Illustrations

Illustration 3 - Marking Label



Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1691

8.0 Test Summary					
Evaluation Period	8/22/2022-8/22/2022			Project No.	220801237SHA
Sample Rec. Date	22-Aug-2022	Condition	Prototype	Sample ID.	0220822-70-026
Test Location	Intertek Testing Services Shanghai Limited (1105997) Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China				
Test Procedure	Testing Lab			Test type	Qualification

Determination of the result includes consideration of measurement uncertainty from the test equipment and methods. The product was tested as indicated below with results in conformance to the relevant test criteria.

The following requirements were evaluated:

Required Submittal Information	Submittal Data
Model Name and/or Number tested	27B1U5601H(27B1U56)
Date tested	08/22/2022
Serial number of Unit tested	1 sample
ENERGY_STAR_Specification_Version*	8.0
Product_Type*	Monitor
Tiled_Display_System	
Maximum_Tiled_Configuration	
Panel_Type*	Other
Other_Panel_Type	TFT LCD
Diagonal_Screen_Size_in*	27
Screen_Area_sq_in*	310.47
Display_Contrast_Ratio*	1000
Native_Vertical_Resolution_lines*	1440
Native_Horizontal_Resolution_lines*	2560
Total_Native_Resolution_megapixels*	3.7
Native_Pixel_Density_Dp_pixels_sq_in*	11874
As_Tested_Screen_Refresh_Rate_Hz*	60
Maximum_Screen_Refresh_Rate_Hz*	60
Enhanced_Performance_Criteria*	No
Color_Gamut	
Reported_Contrast_Ratio_at_85_deg_Left_Horiz_Viewing_Angle	
Reported_Contrast_Ratio_at_85_deg_Right_Horiz_Viewing_Angle	
High_Dynamic_Range_HDR*	N/A
Other_Available_Interfaces	
Other_Features	
Signal_Interface*	DisplayPort 1.4
Other_Interface	
USB_C_with_Power_Delivery_Supported*	Yes
Maximum_Power_Delivery_W	96
Other_Power_Source	
Does_Model_Have_a_Forced_Menu_at_Initial_Start_up*	No
Maximum_Measured_Luminance_cd_m_2*	373.2
Maximum_Reported_Luminance_cd_m_2*	300
As_shipped_Luminance_cd_m_2	259.2
As_tested_Luminance_cd_m_2*	200
On_Mode_Power_at_12_Lux_at_115_Volts_W	
On_Mode_Power_at_300_Lux_at_115_Volts_W	
Measured_On_Mode_Power_at_115_Volts_W	20.36
Reported_On_Mode_Power_at_115_Volts_W	20.36
Maximum_On_Mode_Power_Limit_for_Signage_Certification_W	
Measured_Sleep_Mode_Power_at_115_Volts_W	0.28
Reported_Sleep_Mode_Power_at_115_Volts_W	0.28
Measured_Disconnected_Sleep_Mode_Power_at_115_Volts_W	0.28
Maximum_Sleep_Mode_Power_Limit_for_Signage_Certification_W	

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1692

8.0 Test Summary	
Number_of_Sleep_Modes_in_Addition_to_Default_Sleep_Mode*	0
Other_Mechanism_for_Automatically_Entering_Sleep_or_Off_Mode	
Default_Delay_Time_to_Sleep_min	
Measured_Off_Mode_Power_at_115_Volts_W	0.26
Reported_Off_Mode_Power_at_115_Volts_W	0.26
Measured_Total_Energy_Consumption_at_115_Volts_kWh	64.02
Reported_Total_Energy_Consumption_at_115_Volts_kWh	64.02
Max_Total_Energy_Consumption_Limit_for_Monitor_kWh	64.05
On_Mode_Power_at_12_Lux_at_230_Volts_W	
On_Mode_Power_at_300_Lux_at_230_Volts_W	
Measured_On_Mode_Power_at_230_Volts_W	20.36
Measured_Sleep_Mode_Power_at_230_Volts_W	0.28
Measured_Disconnected_Sleep_Mode_Power_at_230_Volts_W	0.28
Measured_Off_Mode_Power_at_230_Volts_W	0.26
Measured_Total_Energy_Consumption_at_230_Volts_kWh	64.02
True_Power_Factor_PF_During_On_Mode_Testing_at_115_Volts_W	0.85
True_Power_Factor_PF_During_On_Mode_Testing_at_230_Volts_W	0.53
Color_Spaces_Supported*	sRGB
Available_Signal_or_Data_Interfaces*	HDMI,Display,USB,RJ45
Model_Features*	Built-In Speakers,Full Network Connectivity,USB-C
Features_Enabled_in_Default_On_Mode*	Built-In Speakers,Full Network Connectivity
Features_Enabled_in_Default_Sleep_Mode*	None
Wireless_Technologies_Supported*	None
Ethernet_Supported*	Gigabit Ethernet (1000 Mbit/s)
Power_Source*	Ac to dc internal power supply
Mechanism_for_Automatically_Entering_Sleep_or_Off_Mode*	Display Power Management Signaling
On_Mode_Power_at_12_Lux_at_100_Volts_50Hz_W	
On_Mode_Power_at_300_Lux_at_100_Volts_50Hz_W	
Measured_On_Mode_Power_at_100_Volts_50Hz_W	20.27
Measured_Sleep_Mode_Power_at_100_Volts_50Hz_W	0.28
Measured_Disconnected_Sleep_Mode_Power_at_100_Volts_50Hz_W	0.28
Measured_Off_Mode_Power_at_100_Volts_50Hz_W	0.26
Measured_Total_Energy_Consumption_at_100_Volts_50Hz_kWh	63.75
On_Mode_Power_at_12_Lux_at_100_Volts_60Hz_W	
On_Mode_Power_at_300_Lux_at_100_Volts_60Hz_W	
Measured_On_Mode_Power_at_100_Volts_60Hz_W	20.28
Measured_Sleep_Mode_Power_at_100_Volts_60Hz_W	0.28
Measured_Disconnected_Sleep_Mode_Power_at_100_Volts_60Hz_W	0.28
Measured_Off_Mode_Power_at_100_Volts_60Hz_W	0.26
Measured_Total_Energy_Consumption_at_100_Volts_60Hz_kWh	63.79

8.1 Signatures

A representative sample of the product covered by this report has been evaluated and found to comply with the applicable requirements of the standards indicated in Section 1.0.

Completed by:	Eddie Liu	Reviewed by:	Carl Dong
Title:	Engineer	Title:	Engineer
Signature:	Eddie Liu	Signature:	Carl Dong

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1693

9.0 Correlation Page For Multiple Listings			
The following products, which are identical to those identified in this report except for model number and Company name.			
BASIC LISTEE	MMD- Monitors & Displays Nederland B.V.		
Address	Prins Bernhardplein 200,1097 JB Amsterdam		
Country	The Nederlands	EPA ID	1088182
Product	Display (LCD Monitor)		
Contact	Lissa Wang		
Phone	+86-021-80217644		
FAX	+86-021-80217400		
Email	lissa.wang@mmd-p.com		

MULTIPLE LISTEE 1	None			
Address				
Country		EPA ID		
Contact				
Phone				
FAX				
Email				
Brand Name				
Date Available		Market Availability		OEM
Major Markets				
Trans Type				
Notes				
UPC				
Reason no UPC				
Other reason no UPC				
ASSOCIATED MANUFACTURER				
Address				
Country				

MULTIPLE LISTEE 1 MODELS		BASIC LISTEE MODELS
Additional Model Details (Optional)	Model Name and Number	Identifying Information

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1694

9.0 Correlation Page For Multiple Listings

MULTIPLE LISTEE 2	None			
Address				
Country		EPA ID		
Contact				
Phone				
FAX				
Email				
Brand Name				
Date Available		Market Availability		OEM
Major Markets				
Trans Type				
Notes				
UPC				
Reason no UPC				
Other reason no UPC				
ASSOCIATED MANUFACTURER				
Address				
Country				

MULTIPLE LISTEE 2 MODELS		BASIC LISTEE MODELS
Additional Model Details (Optional)	Model Name and Number	Identifying Information

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1695

10.0 General Information

The Applicant has agreed to produce products in accordance with the requirements of this report and to maintain compliance with all ENERGY STAR Product Specification requirements.

Changes to Product Design / Alternate Components

As part of this agreement, the Applicant also has agreed to notify Intertek and to request authorization prior to making any changes to the product (including but not limited to using alternate parts, components or materials) which may effect compliance with the ENERGY STAR Product Specification. Those parts, components or materials identified as critical have been listed in Section 4.0 of this report.

Product Surveillance

Under this Program, market surveillance is conducted on an annual basis. For each Product Type defined in the EPA ENERGY STAR Program, Intertek will select 10% of those certified products for Verification Testing in accordance with the requirements of the EPA ENERGY STAR Product Specification.

The primary source for products under Verification Testing will be the retail market. Applicants whose products are selected for Verification Testing are required to provide a list of locations where the product might be obtained. The Applicant is responsible for the cost of procurement and the Verification Tests. Should products not be readily available on the retail market, the Applicant is required to provide access to distribution warehouses to allow selection of those products. Should the product not be available on the retail market or if procurement from the retail market is not feasible, then alternate arrangements for Verification Testing will be made by the Intertek Certification Body.

As a general rule under the Verification Testing requirements, the products must achieve energy values within 5% of the required Tier Limit.

Compliance with ENERGY STAR Product Specifications under Verification Testing

Products found non-compliant with ENERGY STAR Product Specification under Verification Testing, will be reported to the EPA within 48 hours and the product removed from the ENERGY STAR Program. If it is determined during Verification Testing that changes have been made to product design or critical components, the Certification Body may increase Verification Testing frequency of those products.

10.1 Evaluation of Unlisted Components

Because Unlisted Components are uncontrolled, and they do not fall under a third party follow up program, Intertek may require these components to be tested and/or evaluated at least once annually, more often for certain components, as part of the independent certification process. The Unlisted Components in Section 5.0 require testing and/or evaluation as indicated.

Note to Intertek Follow Up Inspector: The Component Evaluation Center, CEC, will notify you in writing when these components must be selected and sent to the CEC for re-evaluation

Ship the samples to:
Intertek Testing Services Shanghai Limited
ETL Component Evaluation Center
Building No. 86, 1198 Qinzhou Road (North)
Shanghai 200233, China
Attn: Ms. Angela Han
Sample Disposition: Due to the destructive nature of the testing, all samples will be discarded at the conclusion of testing unless, the manufacturer specifically requests the return of the samples. The request for return must accompany the initial component shipment.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1696

11.0 Manufacturing and Production Tests

Manufacturing and Production tests are not required under the INTERTEK ENERGY STAR Program. However, Intertek encourages the use of such ongoing product testing to ensure compliance with the EPA ENERGY STAR Product Specifications.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1697

12.0 Revision Summary				
The following changes are in compliance with the declaration of Section 8.1:				
Date/ Proj # Site ID	Project Handler/ Reviewer	Section	Item	Description of Change
				None

CERTIFICATE OF CONFORMITY

This Certificate indicates that the Applicant has satisfied the Intertek requirements for the application of the EPA ENERGY STAR Mark to the model(s) described in the Product(s) Covered section of the referenced Compliance Report when made in accordance with the conditions set forth in the Energy Efficiency Certification Agreement, the Certification Report and the Program Manual. This certificate is issued subject to the Applicant attaining, and remaining in, compliance with any separate EPA ENERGY STAR Program requirements necessary for use of the ENERGY STAR Mark. This document is the property of Intertek Testing Services and is not transferable.

Company:	MMD- Monitors & Displays Nederland B.V.	**OEM name:**	MMD- Monitors & Displays Nederland B.V.
Address:	Prins Bernhardplein 200,1097 JB Amsterdam	**Address:**	Prins Bernhardplein 200,1097 JB Amsterdam
Country:	The Nederlands	**Country:**	The Nederlands
Contact:	Lissa Wang	**Contact:**	Lissa Wang
Phone:	+86-021-80217644	**Phone:**	+86-021-80217644
FAX:	+86-021-80217400	**FAX:**	+86-021-80217400
Email:	lissa.wang@mmd-p.com	**Email:**	lissa.wang@mmd-p.com

3rd-party Report Issuing Office: INTERTEK TESTING SERVICES LTD., SHANGHAI

Control Number: *4009534* **Authorized by:**

for L. Matthew Snyder, Certification Manager

This document supersedes all previous Certificate of Conformity for the noted Report Number.

This Certificate is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to copy or distribute this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results referenced from this Certificate are relevant only to the sample tested.

Intertek Testing Services NA Inc.
545 East Algonquin Road, Arlington Heights, IL 60005
Telephone 800-345-3851 or 847-439-5667 Fax 312-283-1672
www.intertek.com

Standard(s):	ENERGY STAR® Program Requirements for Displays Version 8.0
Product:	Display (LCD Monitor)
Models:	27B1U5601H(27B1U56)

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1699

Industrial Services, Mobility and Transport,
Product Safety and Quality, Education and
Consulting, IT Services and Innovation

TÜVRheinland®
Precisely Right.

TPV Electronics (Fujian) Co., Ltd.
Janet Chen
R&D Safety Dept.
Rongqiao Economic and
Technological Development Zone
Fuqing City
Fujian
P.R. China

Date : 19.09.2022
Our ref. : LINSTE 02
Your ref.: J.C.

Ref : S GS-Zeichen

Type of Equipment : LCD Monitor
Model Designation : See Certificate
Certificate No. : S 50558672 0001
Report No. : CN22K569 001

Dear Janet Chen,

The above specified equipment has been tested and found to be in accordance with the relevant requirements.

Please find enclosed your certificate as specified above.

If cancellation of the certificate is submitted by 15 November in a given year, no fee will be charged for the following year.

The certificate is issued with the reservation that the license holder applies all information required in § 6 of the ProdSG related to name and address of the manufacturer or his authorized representative / importer, including their respective contact addresses on the product prior to marketing of the product in the European Economic Area.
In case you have a change regarding your involved local representative for the certificate, please inform us in due time.

With kind regards,

Certification Body

Dipl.-Ing. Th. Illing

Enclosure

TÜV RHEINLAND TAIWAN LTD.

11F., No. 758, Sec. 4, Bade Rd.,
Songshan Dist., Taipei City 105,
Taiwan, R. O. C.
Tel. (02) 2172-7000
Fax (02) 2172-1322
http://www.tuv.com

NEW TAIPEI BRANCH:
No. 458-19 & 458-19,
Sec. 2, Fenliao Rd., Linkou Dist.,
New Taipei City 244,
Taiwan, R. O. C.
Tel. (02) 2172-1000
Fax (02) 2172-1322

TAICHUNG BRANCH:
3F., No. 497, Zhongming South Rd.,
West Dist., Taichung City 403,
Taiwan, R. O. C.
Tel. (02) 2172-7000
Fax (02) 2172-1322

KAOHSIUNG BRANCH:
27F.-3, No.80, Minzu 1st Rd.,
Sanmin Dist., Kaohsiung City 807,
Taiwan, R. O. C.
Tel. (07) 262-6000
Fax (07) 380-0577

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1700

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*	Blatt *Sheet*	Gültig ab	*Valid from*
S 50558672	0001	19.09.2022	*(day/mo/yr)*

Ihr Zeichen *Client Reference*	Unser Zeichen *Our Reference*	Längstens gültig bis	*Latest expiration date*
J.C.	02-LINSTE-CN22K569 001	18.09.2027	*(day/mo/yr)*

Genehmigungsinhaber *License Holder*
TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and
Technological Development Zone
Fuqing City
Fujian
P.R. China

Fertigungsstätte *Manufacturing Plant*
Refer to latest revision
of the annex list of factories

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*
EN IEC 62368-1:2020+A11
EK1-ITB 2000:2022
EK1 527-12 Rev. 2

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Bildschirm (LCD Monitor)

Bezeichnung (Type Designation)	: siehe zugehörige Zertifikate oder Folgeblätter (refer to accompanying certificates or additional sheets)	10
Nennspannung (Rated Voltage)	: 100-240VAC; 50/60Hz	
Nennstrom (Rated Current)	: 2A	
Schutzklasse (Protection Class)	: I	
Max. Umgebungstemperatur (Max. Ambient Temperature)	: 40°C	
Max. Betriebshöhe (Max. Operating Altitude)	: 5000m	

Getestete Panel ist auf Blatt 0002 gelistet.
(Tested Panel is listed on page 0002.)
Hinweis: Anforderungen der AfPS GS 2019:01 PAK Klausel 3.1 berücksichtigt.
(Remark: Requirements of AfPS GS 2019:01 PAK clause 3.1 considered.)

Fortsetzung Blatt (continued on page) 0002

10

ANLAGE (Appendix): 1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde. Produkt und Fertigungsstätte erfüllen § 20 des Produktsicherheitsgesetzes.
This certificate is based on our Testing and Certification Regulation. The provisions of §20 Product Safety Act are complied with.

TÜV Rheinland LGA Products GmbH – TÜVRheinland® – Zertifizierungsstelle

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
http://www.tuv.com/safety E-mail: markcheck@tuv.com
Fax: +49 221 806-3935

Ausstellungsdatum *Date of Issue* : 19.09.2022 **(day/mo/yr)**

Dipl.-Ing. Th. Illing

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1701

Anlage Fertigungsstättenliste
/Attachment List of Factories

TÜVRheinland®

§ 50558672 0001

1 TPV Electronics (Fujian) Co., Ltd.
Hongqian Economic and
Technological Development Zone
Fuqing City
Fujian
P.R. China

2 TPV Display Technology (Wuhan)
Co., Ltd.
Unique No. 11, Zhuankou Development
District of Economic Technological
Development Zone
430056 Wuhan City
P.R. China

TÜVRheinland®

TÜV Rheinland LGA Products GmbH
TÜVRheinland
Zertifizierungsstelle

Zertifixierungsstelle
/ Certification Body

Dieser Anhang ersetzt den Vorgänger vom/
This annex replaces the previous annex dated

Datum / Date 19.09.2022

Dipl.-Ing. Th. Illing

Proposta de Projeto ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1702

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*	Blatt *Sheet*	Gültig ab	*Valid from*
S 50558672	0002	19.09.2022	*(day/mo/yr)*

Ihr Zeichen *Client Reference*	Unser Zeichen *Our Reference*	Längstens gültig bis	*Latest expiration date*
J.C.	02-LINSTE-CN22K569 001	18.09.2027	*(day/mo/yr)*

Genehmigungsinhaber *License Holder*
TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and
Technological Development Zone
Fuqing City
Fujian
P.R. China

Fertigungsstätte *Manufacturing Plant*
Refer to latest revision
of the annex list of factories

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*
EN IEC 62368-1:2020+A11
EK1-ITB 2000:2022
EK1 527-12 Rev. 2

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Bildschirm (LCD Monitor)

Fortsetzung (Continuation)
LCD-Display/LCD-Panel: TPM270WF1 (TPV)
27,0 inch (68,5cm)
Pixelfehlerklasse/Pixel Fault Class: I
Vorgesehener Sehabstand/Sehrichtung
Design Viewing Distance/Direction : 500mm, senk./perpendic.
Sehrichtungsbereich/
Viewing Direction Range : 68,8°
Inhalt und Wahrnehmung : Virtualitätsdarstellung
Content and Perception : Artificial Information

Bestandteile der Beleuchtung/Components of the illumination
max. Bildschirmbeleuchtungsstärke/
max. Screen illuminance : 200lx
Quelle mit großer, kleiner Öffnung
large, small aperture source : 200cd/m² , 2000cd/m²

TÜV Rheinland LGA Products GmbH Zertifizierungsstelle

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Produkt und Fertigungsstätte erfüllen § 20 des Produktsicherheitsgesetzes.
This certificate is based on our Testing and Certification Regulation.
The provisions of §20 Product Safety Act are complied with.

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
http://www.tuv.com/safety E-mail: markcheck@tuv.com
Fax: +49 221 806-3935

Ausstellungsdatum *Date of Issue* : 19.09.2022 (day/mo/yr)

Dipl.-Ing. Th. Illing

Proposta de Parecer ITEM 2 - TOPING INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1703

Industrial Services, Mobility and Transport,
Product Safety and Quality, Education and
Consulting, IT Services and Innovation

TÜVRheinland®
Precisely Right.

MMD (Shanghai) Electronics
Technology Co., Ltd.
Ms. Lissa Wang

Date : 19.09.2022
Our ref. : LINSTE 02
Your ref.: L.W.

Room 5060A.
No. 2 Building, 555 Dong Chuan Road
Min Hang District 200241 Shanghai
P.R. China

Ref : S GS-Zeichen

Type of Equipment : LCD Monitor
Model Designation : See Certificate
Certificate No. : S 50558675 0001
Report No. : CN22K569 002

Dear Ms. Lissa Wang,

The above specified equipment has been tested and found to be in accordance with the relevant requirements.

Please find enclosed your certificate as specified above.

If cancellation of the certificate is submitted by 15 November in a given year, no fee will be charged for the following year.

The certificate is issued with the reservation that the license holder applies all information required in § 6 of the ProdSG related to name and address of the manufacturer or his authorized representative / importer, including their respective contact addresses on the product prior to marketing of the product in the European Economic Area.
In case you have a change regarding your involved local representative for the certificate, please inform us in due time.

With kind regards,

Certification Body

Dipl.-Ing. Th. Illing

cc: TPV Electronics (Fujian) Co., Ltd.

Enclosure

TÜV RHEINLAND TAIWAN LTD.

11F., No. 758, Sec. 4, Bade Rd.,
Songshan Dist., Taipei City 105,
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NEW TAIPEI BRANCH:
No. 458-18 & 458-19,
Sec. 2, Fenliao Rd., Linkou Dist.,
New Taipei City 244,
Taiwan, R. O. C.
Tel. (02) 2172-1000
Fax (02) 2172-1322

TAICHUNG BRANCH:
3F., No. 497, Zhongming South Rd.,
West Dist., Taichung City 403,
Taiwan, R. O. C.
Tel. (02) 2172-7000
Fax (02) 2172-1322

KAOHSIUNG BRANCH:
27F.-3, No.80, Minzu 1st Rd.,
Sanmin Dist., Kaohsiung City 807,
Taiwan, R. O. C.
Tel. (07) 282-6000
Fax (07) 380-0577

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1704

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*	Blatt *Sheet*	Gültig ab	*Valid from*
S 50558675	0001	19.09.2022	*(day/mo/yr)*
Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Längstens gültig bis**	*Latest expiration date*
L.W.	02-LINSTE-CN22K569 002	18.09.2027	*(day/mo/yr)*

Genehmigungsinhaber *License Holder*
MMD (Shanghai) Electronics
Technology Co., Ltd.
Room 5060A.
No. 2 Building, 555 Dong Chuan Road
Min Hang District 200241 Shanghai
P.R. China

Fertigungsstätte *Manufacturing Plant*
Refer to latest revision
of the annex list of factories

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*
EN IEC 62368-1:2020+A11
EK1-ITB 2000:2022
EK1 527-12 Rev. 2

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Bildschirm (LCD Monitor)

Bezeichnung : 27B1U5601H ; 27B1U56 ; 10
(Type Designation) 27B********** ; 27*1**********
(PHILIPS)
* = 0-9, A-Z, a-z, +, -, /, \
oder (or) Leerzeichen (blank)
Nennspannung (Rated Voltage) : 100-240VAC; 50/60Hz
Nennstrom (Rated Current) : 2A
Schutzklasse (Protection Class) : I
Max. Umgebungstemperatur : 40°C
(Max. Ambient Temperature)
Max. Betriebshöhe : 5000m
(Max. Operating Altitude)
Getestete Panel ist auf Blatt 0002 gelistet.
(Tested Panel is listed on page 0002.)
Hinweis: Anforderungen der AfPS GS 2019:01 PAK Klausel 3.1 berücksichtigt.
(Remark: Requirements of AfPS GS 2019:01 PAK clause 3.1 considered.)

Fortsetzung Blatt (continued on page) 0002

10

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde. Produkt und Fertigungsstätte erfüllen § 20 des Produktsicherheitsgesetzes.
This certificate is based on our Testing and Certification Regulation. The provisions of § 20 Product Safety Act are complied with

TÜV Rheinland LGA Products GmbH TÜVRheinland Zertifizierungsstelle

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
http://www.tuv.com/safety E-mail: markcheck@tuv.com
Fax: +49 221 806-3935

Ausstellungsdatum *Date of Issue* : 19.09.2022 (day/mo/yr)

Dipl.-Ing. Th. Illing

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1705

Anlage Fertigungsstättenliste
/Attachment List of Factories

S 50558675 0001

1 040-0002C04379

2 040-0001163797

Dieser Anhang ersetzt den Vorgänger vom/
This annex replaces the previous annex dated

Datum / Date 19.09.2022

Zertifizierungsstelle
/ Certification Body

Dipl.-Ing. Th. Illing

Proposta de Parecer ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1706

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*	Blatt *Sheet*	Gültig ab	*Valid from*
S 50558675	0002	19.09.2022	*(day/mo/yr)*
Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Längstens gültig bis**	*Latest expiration date*
L.W.	02-LINSTE-CN22K569 002	18.09.2027	*(day/mo/yr)*

Genehmigungsinhaber *License Holder*
MMD (Shanghai) Electronics
Technology Co., Ltd.
Room 5060A.
No. 2 Building, 555 Dong Chuan Road
Min Hang District 200241 Shanghai
P.R. China

Fertigungsstätte *Manufacturing Plant*
Refer to latest revision
of the annex list of factories

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*
EN IEC 62368-1:2020+A11
EK1-ITB 2000:2022
EK1 527-12 Rev. 2

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Bildschirm (LCD Monitor)

Fortsetzung (Continuation)
LCD-Display/LCD-Panel: TPM270WF1 (IPV)
27.0 inch (68,5cm)
Pixelfehlerklasse/Pixel Fault Class: I
Vorgesehener Sehabstand/Sehrichtung
Design Viewing Distance/Direction : 500mm, senk./perpendic.
Sehrichtungsbereich/
Viewing Direction Range : 68,8°
Inhalt und Wahrnehmung : Virtualitätsdarstellung
Content and Perception : Artificial Information

Bestandteile der Beleuchtung/Components of the illumination
max. Bildschirmbeleuchtungsstärke/
max. Screen illuminance : 2000lx
Quelle mit großer, kleiner Öffnung
large, small aperture source : 200cd/m² , 2000cd/m²

TÜV Rheinland LGA Products GmbH Zertifizierungsstelle

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde. Produkt und Fertigungsstätte erfüllen § 20 des Produktsicherheitsgesetzes.
This certificate is based on our Testing and Certification Regulation. The provisions of §20 Product Safety Act are complied with.

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
http://www.tuv.com/safety E-mail: markcheck@tuv.com
Fax: +49 221 806-3935

Ausstellungsdatum *Date of Issue* : 19.09.2022 (day/mo/yr)

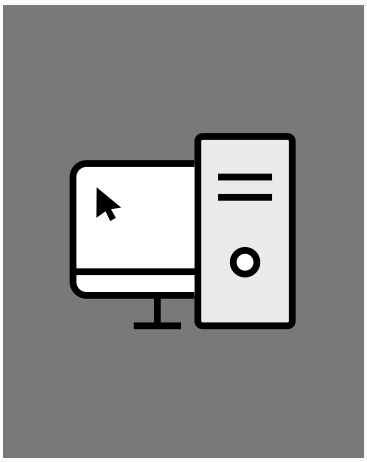
Dipl.-Ing. Th. Illing

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1707

Login

RETURN TO SEARCH

PHILIPS 27B1U5601H



COMPUTERS & DISPLAYS

Product Summary:

Product Type:	**Monitors**
Registered In:	**Brazil**
Manufacturer:	**MMD Monitors and Displays Nederland B.V.**
EPEAT Tier:	**Gold**
Registration Date:	**2023-01-17**
Product Status:	**Active**
EPEAT Climate+:	**Achieved 2023-10-27**
Exceptions:	**Disassembly instructions, exploded diagram, spare parts to avoid injury to end users.**

European Article Number(s): **8712581796501**

All unique product identifiers existing for this product may not be listed here. If the unique product identifier you are looking for is not listed, please contact EPEAT at EPEAT@GEC.org.

Proposta de Preço ITEM 2 - TORINO INFORMÁTICA LTDA. (1661825) SEI 2025.0013177 pg. 1708

EXPORT PRODUCT SUMMARY

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable “required” criteria. Click here to see a list of the required criteria for this product category.

This product has met the necessary required criteria.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

Products that meet all required criteria and achieve **less than 50%** of the optional points are rated at
EPEAT Bronze

Products that meet all required criteria and achieve **50 - 74%** of the optional points are rated at
EPEAT Silver

Products that meet all required criteria and achieve **75 - 100%** of the optional points are rated at
EPEAT Gold

The optional criteria for this product category and optional points achieved by this product are listed below.

Optional Criteria	Scores
+ **4.1 Substance Management**	**14 / 16**

Proposta de Preço ITEM 2 - TORINO INFORMÁTICA LTDA. (1661825) SEI 2025.0013177 pg. 1709

4.2 Materials Selection	3 / 3
4.4 Product longevity/life-cycle extension	2 / 2
4.5 Energy Conservation	0 / 2
4.7 Packaging	1 / 2
4.8 Life cycle assessment and carbon footprint	5 / 6
4.9 Corporate Environmental Performance	4 / 9
4.10 Corporate social responsibility	6 / 6
TOTAL OPTIONAL CRITERIA SCORE:	**35 / 46**

Please note that it is not required for a product to

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable (N/A)

Proposta de Preço ITEM 2 - TORINO INFORMÁTICA LTDA. (1661825) SEI 2025.0013177 / pg. 1710

achieve any optional points.

to the product are not included in the Total Optional Criteria Score, and are not reflected above.

For any questions, comments, or feedback regarding the EPEAT Registry, please contact us.

Contact Us

+1.503.279.9383

PO Box 12149 Portland, OR 97212-0149 USA

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EPEAT Registry Terms of Use

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.0013177 pg. 1711

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

PSB Singapore

THE SINGAPORE CONSUMER PROTECTION (SAFETY REQUIREMENTS) REGISTRATION SCHEME

CERTIFICATE OF CONFORMITY (COC)

Issued to:	200822460K (UEN) Ms Valarie Seow **MMD Singapore Pte Ltd** 31 Ubi Road 1 #04-01 Singapore 408694 SINGAPORE
Date of Certification:	2022-11-15
Date of Re-certification:	-
Date of Expiry:	2025-11-14
Certificate Number:	221049-11

We certify that the following controlled goods complied with the mandatory requirements of the Singapore Consumer Protection (Safety Requirements) Registration Scheme:

Description of controlled goods:	27" LCD Monitor rated 100-240V~, 50/60Hz, 2A, Class I
Trade Name:	PHILIPS
Model Number:	27B1U56
Country where controlled goods are likely to be manufactured:	ARGENTINA/BRAZIL/CHINA/INDIA/MEXICO/ TAIWAN/THAILAND
Test report number:	220501893SHA-001
Test certificate number:	SE-108867
Testing laboratory:	Intertek Testing Services Shanghai
Tested according to:	IEC 62368-1:2018



_____

(MENG HWEE DESMOND SOH)

TÜV SÜD PSB

Important Notice:
No controlled goods can be supplied in Singapore unless they are registered with the Safety Authority. Please access https://www.cpsaplus.gov.sg/HomePage/ for the registration procedure.

The use of this Certificate is subjected to TÜV SÜD Group Testing and Certification Regulations: www.tuvsud.com/en/-/media/de/product-service/pdf/agbs/testing-and-certification-regulations-tuev-sued-group.pdf

Persons relying on this Certificate should verify its validity by checking the e-directory: www.tuvsud.com/ps-cert.

TÜV®

Proposta de Vendas ORDEM DE COMPRA 1 TSP 16672 TÜV SÜD 2025-01-21 Singapore 1712

CERTIFICATE

FOR EUROPEAN PRODUCT SAFETY

Reference No. SE-S-2201045

LCD Monitor

Type designation:	27B1U5601H, 27B1U56, 27B**********, 27*1**********
Certificate holder:	TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P. R. China
The product complies with the standard(s):	EN IEC 62368-1:2020+A11
Date of expiry:	25 August, 2027

Additional information in Appendix

Certification Body: Intertek Semko AB, Product Certification **Place:** Shanghai

Signed: **Date:** 26 August, 2022

Hyden Li

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1713

APPENDIX:

Reference No. SE-S-2201045

Technical Data:

Type designation	27B1U5601H, 27B1U56, 27B**********, 27*1********* (The symbol "*" can be 0-9, A-Z, a-z, "+", "-", "/", "\" or blank, which is not influencing on safety.)
Rated voltage (V)	100-240~
Rated current (A)	2
Frequency (Hz)	50/60
Class	I
Trademark	PHILIPS
Test Report	220501990SHA-001

Manufacturing Sites:

TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P. R. China

TPV Display Technology (Wuhan) Co., Ltd
Unique No.11 Zhuankou Development District of Economic Technological Development Zone, Wuhan City, P. R. China

The instruction for use shall be written in a language acceptable according to the national regulation in the country where the product is to be used.

If the product is to be marketed in different European countries, it must be provided with a certified plug appropriate for each country.

Certification Body: Intertek Semko AB, Product Certification **Place:** Shanghai

Signed: **Date:** 26 August, 2022

Hyden Li

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1714

VERIFICATION STATEMENT
EN IEC 62368-1:2020 + A11:2020
Information technology equipment – Safety –
Part 1: General requirements

Report Reference No. ..... :	220501990SHA-001 (based on CB certif. no. SE-108867)
Tested by (+ signature) ..... :	Peter Lin Peter.Lin .....
Approved by (+ signature) ..... :	Jacky Shu .....
Date of issue ..... :	2022-8-22
Contents ..... :	6 pages test report
Testing laboratory Name..... :	Intertek Testing Services Shanghai
Address ..... :	Building No.86, 1198 Qinzhou Road (North), 200233 Shanghai, China
Testing location ..... :	Same as above
Client Name..... :	TPV Electronics (Fujian) Co., Ltd.
Address ..... :	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China
Standard..... :	EN IEC 62368-1:2020+A11:2020
Test procedure ..... :	S mark
Non-standard test method ..... :	N.A.
Test item Description ..... :	LCD Monitor
Trademark..... :	PHILIPS
Model and/or type reference..... :	27B1U5601H, 27B1U56, 27B**********, 27*1********** (The symbol "*" can be 0-9, A-Z, a-z, "+", "-", "/", "\" or blank, which is not influencing on safety.)
Rating(s)..... :	100-240V~, 50/60Hz, 2A Class I
Manufacturer … ..... :	MMD (Shanghai) Electronics Technology Co.,Ltd. Room 5060A, No.2 Building, 555 DongChuan Road, Minhang District, Shanghai, 200241, China
Factory ..... :	1. TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China 2. TPV Display Technology (Wuhan) Co., Ltd Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,P.R.China
Remarks for acceptance and review work conducted by above qualified testing laboratory	
Sample Number reviewed..... :	1 pcs

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

Remark ..... :	The product and the mentioned test reports comply with Swedish standard and nationals' deviations, if any. The sample as shown in following page(s) is still corresponding with the one mentioned in CB test report. We concluded this statement verifies that above standards are fulfilled.
Test item description ..... :	No tests are needed for this product.
Statement for deviations, if any..... :	National difference for Sweden has been evaluated in CB report.

Specification and key information involved in original CB certificate and test report

Involved Ref. Certif. no ..... :	SE-108867
Issued date..... :	2022-8-22
Test item description..... :	LCD Monitor
Applicant's Name ..... :	TPV Electronics (Fujian) Co., Ltd.
Address ..... :	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China
Manufacturer..... :	MMD (Shanghai) Electronics Technology Co.,Ltd. Room 5060A, No.2 Building, 555 DongChuan Road, Minhang District, Shanghai, 200241, China
Factory ..... :	1.TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China 2.TPV Electronics (Fujian) Co., Ltd. Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province, P.R.China 3.TPV Electronics (Fujian) Co., Ltd. Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, PRC 4. L&T Display Technology (Fujian) Ltd Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,Fujian Province, PRC 5.TPV Display Technology (China) Co., Ltd No.106 Jinghai 3 Rd., BDA, Beijing City 100176 P.R. China 6. TPV Display Technology (Wuhan) Co., Ltd Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,P.R.China 7. TPV Display Technology（Beihai）Co.,Ltd. China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City, Guangxi,P.R.China 8. TREND SMART CE MEXICO S. DE R.L. DE C.V. Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana , Baja California, C.P. 22435 Mexico 9. Envision Indústria de Produtos Eletrônicos Ltda. Av. Torquato Tapajós, 2236, Flores - CEP 69058-830 - Manaus/AM – Brasil 10.TPV Technology (Thailand) Co., Ltd. No.267 Mu7, Tha Tum Sub- District, Si Maha Pho District,Prachin Buri Province, Thailand 11. GeneTouch Corporation No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012, Taiwan 12. Dixon Technologies (India) Ltd. EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post, Revenue Vikruthamala, Yerpedu Mandelam, District-Chittoor, Andhra Pradesh, 517526 India 13. Fábrica Austral de Productos Eléctricos S.A. Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur, Argentina

Technical data	:	100-240V~, 50/60Hz, 2A Class I
Referred standard	:	IEC 62368-1:2018 and EN IEC 62368-1:2020 + A11:2020
Model and/or type reference	:	27B1U5601H, 27B1U56, 27B**********, 27*1********** (The symbol "*" can be 0-9, A-Z, a-z, "+", "-", "/", "\" or blank, which is not influencing on safety.)
Involved test report	:	220501893SHA-001

Copy of marking plate(representative):

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

(Additional requirements for markings. See 1.7 NOTE)



Note: For other models, marking plates are the same except for model name.

Power cord of the EUT:

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Power plug	VOLEX	M2511	16A, 250V, DIN 49441-R2	VDE 0620-1	VDE 40029340
Alt.	Interchangeable	Interchangeable	16A, 250V, DIN 49441-R2	DIN VDE 0620-1: 2013; DIN VDE 0620-2-1: 2013	S, VDE or other EU mark
Power connector	VOLEX	V1625	10A, 250V, standard sheet C13	EN 60320-1	VDE 40030955
Alt.	Interchangeable	Interchangeable	10A, 250V, standard sheet C13	EN 60320-1:2015	S, VDE or other EU mark
Power cord	VOLEX	H03VVH2-F or H05VVH2-F	3G 0.75mm²	EN 50525-2-11	VDE 40022259
Alt.	Interchangeable	nterchangeable	3G 0.75mm²	EN 50525-2-11: 2011	S, VDE or other EU mark
Note: The power cord set (plug+cord+connector) comply with standard EN 60799.					

CERTIFICATE

TCO Certified, generation 9

for displays



Brand name: Philips
Model name: 27B*U5*

Certification date: 2022-08-30
Expiry date: 2024-08-30

Toward sustainable IT products
TCO Certified is the world-leading sustainability certification for IT products. It is an easy-to-use tool that helps you get environmental and social sustainability right. Criteria are mandatory, tough, and apply globally. Compliance is always independently verified.

For more information, visit tcocertified.com.

Stefan Carlberg
Certification process
TCO Development

No. D922080256

This certificate confirms that a sample of the certified product, as stated herein, has been tested and approved as to its compliance with the criteria document valid at the time of the laboratory test. The certified product may, subject to the use of the unique combination of brand name, type/model name and sales name as stated in this certificate, be marked and sold with the TCO Certified label in accordance with the agreement.

Appendix to certificate No. D922080256

Brand name: Philips

Model name(s):
27B*U5*

1st * : can be 1, 2 or 3
2nd *: can be 4, 5 or 6
Separate power supply: No



83%
Recycled plastic



7.4 kg
Total weight of product



Energy consumption
On mode: 20.4 Watt
Sleep mode: 0.3 Watt
Off mode: 0.3 Watt



Aspect ratio: 16:9
Panel size: 27 in
Min. resolution width: 1920 px
Min. resolution height: 1080 px
Type of stand: Pivot

Sales name(s):
27B1U56, 27B1U5601H

Additional information:
For products delivered without stand; the emission criteria 4.2 and 4.3 is not covered.

Stefan Carlberg
Certification process
TCO Development

Appendix to certificate No. D922080256



Panels:
TPV TPM270WF1-KCJP02

Stefan Carlberg
Certification process
TCO Development

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ABOUT CRITERIA HOW TO USE GUIDES ROADMAP REPORT GENERATOR

27B1U5601H

CLOSE

OPTIONS

Philips

DE22084059

SHARE

BRAND NAME	Philips
SALES NAME	27B1U5601H
MODEL NAME	27B*U5*
DISPLAY SIZE	27"
ASPECT RATIO	16:9
MAXIMUM RESOLUTION	2560x1440
TYPE OF STAND	Pivot
SEPARATE POWER SUPPLY	No
CERTIFICATION	TCO Certified Edge Displays
CERTIFICATE NUMBER	DE22084059
CERTIFICATION DATE	2022-08-30
CERTIFICATE VALID UNTIL	2026-08-30
COMMENT	For products delivered without stand, the emission A.4.1 & A.4.2 is not covered; Edge criteria fulfilled: Full function ergonomic stand;

Register for more info

Create an account to get access to all information

Examples of the information you will gain access to

- Battery cycles
- % of recycled plastic
- Sound levels

CREATE ACCOUNT

LOG IN

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1724

BRAND	SALES NAME	CERTIFIED ON	VALID UNTIL
Samsung	S49F952UAN	2025-06-29	2027-06-29
Samsung	S49F954UAN	2025-06-29	2027-06-29
AOC	24P4U	2025-06-27	2027-06-27
AOC			026-06-27
Lenovo			026-06-27
Acer			027-06-25
Acer			027-06-25
AOC			027-06-25
AOC			026-06-25
Acer			027-06-19
Acer			026-06-19
Acer			027-06-19
Acer			026-06-19
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ASUS			027-06-19
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ASUS			027-06-19
ASUS			027-06-19
ASUS			027-06-19
Lenovo			027-06-19
ASUS			027-06-17
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ASUS			027-06-17
ASUS			027-06-17
ASUS			027-06-17
ASUS			027-06-17
ASUS			027-06-17
ASUS	VP229QF-W	2025-06-17	2027-06-17

27B1U5601H

CLOSE

OPTIONS

Philips

DE22084059

SHARE

BRAND NAME	Philips
SALES NAME	27B1U5601H
MODEL NAME	27B*U5*
DISPLAY SIZE	27"
ASPECT RATIO	16:9
MAXIMUM RESOLUTION	2560x1440
TYPE OF STAND	Pivot
SEPARATE POWER SUPPLY	No
CERTIFICATION	TCO Certified Edge Displays
CERTIFICATE NUMBER	DE22084059
CERTIFICATION DATE	2022-08-30
CERTIFICATE VALID UNTIL	2026-08-30
COMMENT	For products delivered without stand, the emission A.4.1 & A.4.2 is not covered; Edge criteria fulfilled: Full function ergonomic stand;

Register for more info

Create an account to get access to all information

Examples of the information you will gain access to

- Battery cycles
- % of recycled plastic
- Sound levels

CREATE ACCOUNT

LOG IN

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1725

BRAND	SALES NAME	CERTIFIED ON	VALID UNTIL
ASUS	VP229QFY	2025-06-17	2027-06-17
ASUS	VP229QFZ	2025-06-17	2027-06-17
DELL	Latitude 3140	2025-06-17	2027-12-04
DELL			027-12-04
DAHUA			027-06-16
DAHUA			027-06-16
DAHUA			027-06-16
DAHUA			027-06-16
DAHUA			027-06-16
HP			027-06-13
HP			027-06-13
Lenovo			027-06-13
EIZO			027-06-13
Lenovo			027-06-10
Lenovo			027-06-01
Lenovo			026-06-01
AOC			027-05-29
AOC			026-05-29
Lenovo			027-05-28
iiyama			027-05-28
Lenovo			027-05-28
Lenovo			026-05-28
Lenovo			027-05-28
Lenovo			026-05-28
Lenovo			027-05-28
Lenovo			026-05-28
Lenovo			027-05-28
Lenovo			026-05-28
Lenovo			027-05-27
Lenovo			027-05-27
Lenovo			027-05-26
Lenovo			027-05-25
Lenovo	E27Q-40	2025-05-25	2026-05-25

27B1U5601H

CLOSE

OPTIONS

Philips

DE22084059

SHARE

BRAND NAME	Philips
SALES NAME	27B1U5601H
MODEL NAME	27B*U5*
DISPLAY SIZE	27"
ASPECT RATIO	16:9
MAXIMUM RESOLUTION	2560x1440
TYPE OF STAND	Pivot
SEPARATE POWER SUPPLY	No
CERTIFICATION	TCO Certified Edge Displays
CERTIFICATE NUMBER	DE22084059
CERTIFICATION DATE	2022-08-30
CERTIFICATE VALID UNTIL	2026-08-30
COMMENT	For products delivered without stand, the emission A.4.1 & A.4.2 is not covered; Edge criteria fulfilled: Full function ergonomic stand;

Register for more info

Create an account to get access to all information

Examples of the information you will gain access to

- Battery cycles
- % of recycled plastic
- Sound levels

CREATE ACCOUNT

LOG IN

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1726

BRAND	SALES NAME	CERTIFIED ON	VALID UNTIL
Lenovo	TS27Q-40	2025-05-25	2027-05-25
Lenovo	TS27Q-40	2025-05-25	2026-05-25
Lenovo	ThinkCentre M70q Gen 6	2025-05-22	2027-05-22
Lenovo			27-05-22
Philips			27-05-22
Philips			26-05-22
Lenovo			27-05-22
AOC			27-05-19
AOC			26-05-19
AOC			27-05-19
AOC			26-05-19
Lenovo			27-05-18
Lenovo			27-05-18
Lenovo			27-05-18
Lenovo			27-05-18
Acer			27-05-18
Acer			27-11-21
Acer			27-11-19
Acer			27-11-19
Acer			27-05-13
Philips			27-05-13
Philips			26-05-13
Philips			27-05-13
Philips			26-05-13
Lenovo			27-05-13

27B1U5601H

CLOSE

OPTIONS

Philips

DE22084059

SHARE

BRAND NAME	Philips
SALES NAME	27B1U5601H
MODEL NAME	27B*U5*
DISPLAY SIZE	27"
ASPECT RATIO	16:9
MAXIMUM RESOLUTION	2560x1440
TYPE OF STAND	Pivot
SEPARATE POWER SUPPLY	No
CERTIFICATION	TCO Certified Edge Displays
CERTIFICATE NUMBER	DE22084059
CERTIFICATION DATE	2022-08-30
CERTIFICATE VALID UNTIL	2026-08-30
COMMENT	For products delivered without stand, the emission A.4.1 & A.4.2 is not covered; Edge criteria fulfilled: Full function ergonomic stand;

Register for more info

Create an account to get access to all information

Examples of the information you will gain access to

- Battery cycles
- % of recycled plastic
- Sound levels

CREATE ACCOUNT

LOG IN

Together t

TCO Certified is the
empowering both
Our comprehensive
responsibility and are updated continuously to push sustainability where it

→ News
→ ISO 14024

owners and verifiers
→ For resellers and retailers

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1727

matters most. Compliance with all criteria is always independently verified for every product.
Our Roadmap for Sustainable IT is the long-term plan for addressing issues in four key areas: climate, substances, circularity and supply chain. By using TCO Certified, you join a global movement for sustainable IT.

→ Privacy and integrity policy
→ Manage cookies
→ Purchaser Advisory Forum
→ Circular Electronics Initiative

27B1U5601H

CLOSE
OPTIONS

Philips

DE22084059

SHARE

BRAND NAME	Philips
SALES NAME	27B1U5601H
MODEL NAME	27B*U5*
DISPLAY SIZE	27"
ASPECT RATIO	16:9
MAXIMUM RESOLUTION	2560x1440
TYPE OF STAND	Pivot
SEPARATE POWER SUPPLY	No
CERTIFICATION	TCO Certified Edge Displays
CERTIFICATE NUMBER	DE22084059
CERTIFICATION DATE	2022-08-30
CERTIFICATE VALID UNTIL	2026-08-30
COMMENT	For products delivered without stand, the emission A.4.1 & A.4.2 is not covered; Edge criteria fulfilled: Full function ergonomic stand;

Register for more info

Create an account to get access to all information

Examples of the information you will gain access to

- Battery cycles
- % of recycled plastic
- Sound levels

CREATE ACCOUNT

LOG IN

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1728

Full function ergonomic stand

CERTIFICATE

TCO Certified, generation 9

for displays



Brand name: Philips
Model name: 27B*U5*

Certification date: 2022-08-30
Expiry date: 2023-08-30

Toward sustainable IT products
TCO Certified is the world-leading sustainability certification for IT products. It is an easy-to-use tool that helps you get environmental and social sustainability right. Criteria are mandatory, tough, and apply globally. Compliance is always independently verified.

For more information, visit tcocertified.com.

Stefan Carlberg
Certification process
TCO Development

No. DE22084059

This certificate confirms that a sample of the certified product, as stated herein, has been tested and approved as to its compliance with the criteria document valid at the time of the laboratory test. The certified product may, subject to the use of the unique combination of brand name, type/model name and sales name as stated in this certificate, be marked and sold with the TCO Certified label in accordance with the agreement.

Appendix to certificate No. DE22084059

Brand name: Philips
Model name(s):
27B*U5*

1st * : can be 1, 2 or 3
2nd *: can be 4, 5 or 6
Separate power supply: No



83%
Recycled plastic



7.4 kg
Total weight of product



Energy consumption
On mode: 20.4 Watt
Sleep mode: 0.3 Watt
Off mode: 0.3 Watt



Aspect ratio: 16:9
Panel size: 27 in
Min. resolution width: 1920 px
Min. resolution height: 1080 px
Type of stand: Pivot

Sales name(s):
27B1U56, 27B1U5601H

Additional information:
For products delivered without stand; the emission criteria 4.2 and 4.3 is not covered.

Stefan Carlberg
Certification process
TCO Development

Appendix to certificate No. DE22084059



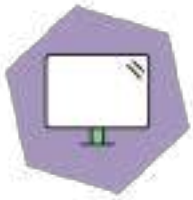
Panels:
TPV TPM270WF1-KCJP02

Stefan Carlberg
Certification process
TCO Development

CERTIFICATE

TCO Certified, generation 9

for displays



Brand name: Philips
Model name: 27B*U5*

Certification date: 2022-08-30
Expiry date: 2025-08-30

Toward sustainable IT products
TCO Certified is the world-leading sustainability certification for IT products. It is an easy-to-use tool that helps you get environmental and social sustainability right. Criteria are mandatory, tough, and apply globally. Compliance is always independently verified.

For more information, visit tcocertified.com.

Jarl Stephansson
Certification process
TCO Development

No. D922080256

This certificate confirms that a sample of the certified product, as stated herein, has been tested and approved as to its compliance with the criteria document valid at the time of the laboratory test. The certified product may, subject to the use of the unique combination of brand name, type/model name and sales name as stated in this certificate, be marked and sold with the TCO Certified label in accordance with the agreement.

Appendix to certificate No. D922080256 -3

Brand name: Philips
Model name(s):
27B*U5*

Separate power supply: No



85%
Recycled plastic



7.4 kg
Total weight of product



Energy consumption
On mode: 20.4 Watt
Sleep mode: 0.3 Watt
Off mode: 0.3 Watt



Aspect ratio: 16:9
Panel size: 27 in
Min. resolution width: 2560 px
Min. resolution height: 1440 px
Type of stand: Pivot

Sales name(s):
27B1U56, 27B1U5601H

Model name type key(s)
1st * : can be 1, 2 or 3
2nd *: can be 4, 5 or 6

Additional information:
For products delivered without stand; the emission criteria 4.2 and 4.3 is not covered.

Jarl Stephansson
Certification process
TCO Development

Appendix to certificate No. D922080256 -3



Panels:
TPV TPM270WF1-KCJP02, TPV TPM270WF1-SG1G03

Jarl Stephansson
Certification process
TCO Development

- **Valid Certificate**

Certificate No. MC-V 4185933ENA

- Certificate Holder
  TPV Electronics (Fujian) Co., Ltd.

  Rongqiao Economic and Technological Development Zone
  Fujian Province
  China (Mainland)
- Certificate Number
  MC-V 4185933ENA
- Certified Product
  MONITOR LCD (LCD MONITOR)

  Model Designation:
  27B1U5601H, 27B1U56, 27B**********, 27*1**********
  ("*" puede ser 0-9, A-Z, a-z, "+","-", "/", "\" o en blanco)

- Fulfilled Standards
  IEC 62368-1:2018

  The standard(s) listed here reflect the status at the time of the release of this certificate.
- Date of Issue
  2023-02-09
- Certificate Type
  TÜV Rheinland Argentina Voluntary Conformity Mark

  The TÜV Rheinland Argentina Voluntary Conformity Mark shows the buyer, and consumer that a product has been successfully tested and certified by an impartial, independent test body of TÜV Rheinland according to the relevant specifications and that the production has been inspected.

  TÜV Rheinland links the Voluntary Conformity Mark to the general ID number 0000009000 and, if desired, with a QR code. When the certificate number, the product designation or the manufacturer name is entered on the website www.certipedia.com, the search function retrieves information on the valid certificate. This way, third parties check the legal use of the test mark or read which tests the product has undergone.

  With the online marketing service, the certificate information can be utilized as a neutral marketing tool. For this, each product tested receives its own, individual 10-digit ID number and an Internet entry with detailed information.

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Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1736

TPV Electronics (Fujian) Co., Ltd.

TEST REPORT

SCOPE OF WORK

South African Energy Efficiency Testing - LCD Monitor -27B1U5601H, 27B1U56, 27B**********, 27*1*********

REPORT NUMBER

220801238SHA-001

ISSUE DATE

Aug. 22, 2022

PAGES

6

DOCUMENT CONTROL NUMBER

TRF No.: TTRF-ZA-AV (1-June-2018)

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TPV Electronics (Fujian) Co., Ltd.
Report No.:220801238SHA-001
Issue Date: Aug. 22, 2022
Revised Date: None

AUDIO & VIDEO EQUIPMENT TEST REPORT

Applicant:	TPV Electronics (Fujian) Co., Ltd. Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province P.R.China
Manufacturer	MMD (Shanghai) Electronics Technology Co., Ltd. Room 5060A, No.2 Building, 555 Dongchuan Road, Minhang District, Shanghai, 200241, P.R. China
Factory	See page 2 details
Product Name:	LCD Monitor
Brand Name:	PHILIPS
Model:	27B1U5601H, 27B1U56, 27B**********, 27*1**********
Model Similarity:	The symbol"*" can be 0-9, A-Z, a-z, "+", "-", "/", "\" or blank,, which is not influencing energy consumption for standby mode.
Rating:	100-240V~, 50/60Hz, 2A Class I
Test Standard/ Regulations:	SANS 941:2014 Edition 1.1: Energy efficiency of electrical and electronic apparatus SANS 62087-1:2017 Edition 1 / IEC 62087-1:2015 Edition 1: Audio, video, and related equipment – Determination of power consumption Part 1: General SANS 62087-3:2017 Edition 1 / IEC 62087-3:2015 Edition 1: Audio, video, and related equipment – Determination of power consumption Part 3: Television sets
Sample Received:	August 22, 2022
Test performed:	August 22, 2022
Testing location:	Intertek Testing Services Ltd., Shanghai. Building No.86, 1198 Qinzhou Road (North), 200233 Shanghai, China
Conclusion:	From the results of the testing on the submitted sample(s), we are of the opinion that the submitted sample(s) COMPLY WITH South African Energy Efficiency Regulations for audio and video equipment.
Note:	1. This report shall not be reproduced, except in full, without written approval of the laboratory. This test results relate only to the items tested. 2. The results contained in the report are for technical evaluation only and are applicable only to the specific test specimen referenced within the report. Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.

Prepared by:

Eddie Liu
Engineer

Approved by:

Carl Dong
Reviewer

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms andconditions of the agreement. Intertek assumes no liability to any party, other than to the Client inaccordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1738

AUDIO & VIDEO EQUIPMENT TEST REPORT

FACTORY LIST

1. TPV Electronics (Fujian) Co., Ltd.
Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province,
P.R.China

2. TPV Electronics (Fujian) Co., Ltd.
Shangzheng, Yuan Hong Road, Fuqing City, Fujian Province,
P.R.China

3. TPV Electronics (Fujian) Co., Ltd.
Optoelectronic Park, Rongqiao Economic and Technological Development Zone,Fuqing City,
Fujian Province,
PRC

4. L&T Display Technology (Fujian) Ltd.
Optoelectronic Park, Rongqiao Economic andTechnological Development Zone, Fuqing City
Fujian Province
PRC

5. TPV Display Technology (China) Co., Ltd
No.106 Jinghai 3 Rd., BDA, Beijing City 100176 P.R. China

6. TPV Display Technology (Wuhan) Co., Ltd
Unique No.11 Zhuankou Development District of Economic Technological Development Zone Wuhan City,
P.R.China

7. TPV Display Technology（Beihai）Co.,Ltd.
China Electronic Beihai Industry Park,Northeast of the Crossing between Taiwan Road and Jilin Road, Beihai City,
Guangxi,
P.R.China

8. TREND SMART CE MEXICO S. DE R.L. DE C.V.
Sor Juana, Ines de la Cruz No.19602 Nueva Tijuana , Baja California, C.P. 22435 Mexico

9. Envision Indústria de Produtos Eletrônicos Ltda.
Av. Torquato Tapajós, 2236, Flores – CEP 69058-830 - Manaus/AM – Brasil

10.TPV Technology (Thailand) Co., Ltd.
No.267 Mu7, Tha Tum Sub- District, Si Maha Pho District,Prachin Buri Province, Thailand

11.GeneTouch Corporation
No. 9, Neixi Rd., Luzhu Dist., Taoyuan City 338012, Taiwan

12.Dixon Technologies (India) Ltd.
EMC-2, Shed No. 2,4,5,6 & 7, Near Tirupati Airport, Village Govindhavaram, Munagalapalem Post,
Revenue Vikruthamala, Yerpedu Mandelam, District-Chittoor, Andhra Pradesh, 517526 India

13. Fábrica Austral de Productos Eléctricos S.A.
Islas Malvinas 1180, Rio Grande (9420), Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur, Argentina

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1739

AUDIO & VIDEO EQUIPMENT TEST REPORT

TEST EQUIPMENT

Equipment Name	Type	Number	Calibration Date	Due Date
Digital Power Meter	WT 310E	EC6401	July 1, 2022	June 30, 2023
AC Power Source	6430	EC3428	July 12, 2022	July 11, 2023

TEST PROCESS:

The tests are carried out in a room that has an air speed close to test sample of < 0.5m/s, the ambient temperature is maintained at 25°C and the ambient humidity is 47%. The test voltage was 230V at 50Hz.

The test sample was operated at least 1 hour immediately prior to conducting On mode power measurements. After On mode power measurement, then following the standby mode power measurement. If the power level does not drift by more than 5% from the maximum value observed,the UUT can be considered stable and then the measurements were recorded at the end of the 5 minutes period.

TEST RESULTS

Test Item	Test Result	Verdict
Standby mode power consumption:	0.28W	Pass (Required: ≤1.0W)
Note: This test result is base on 27B1U5601H and test signal interface is DisplayPort .		

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1740

AUDIO & VIDEO EQUIPMENT TEST REPORT

LABEL

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



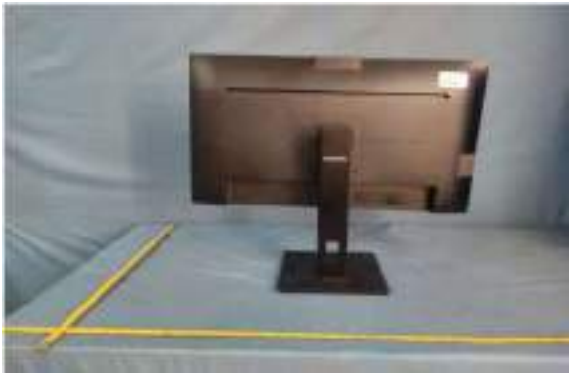
Note: All models' rating labels are in the same design except for type designation. Above labels are representing the other models.

Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1741

AUDIO & VIDEO EQUIPMENT TEST REPORT

PHOTO





Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1742

AUDIO & VIDEO EQUIPMENT TEST REPORT

PHOTO






Proposta de Preço ITEM 2 - TORINO INFORMATICA LTDA. (1661825) SEI 2025.001317 / pg. 1743

DECLARAÇÕES

Ref: EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP

Declaro para os devidos fins junto à Comissão Permanente de Licitação que:

a) cumpro plenamente os requisitos de habilitação e estou ciente de que respondo pela veracidade das informações prestadas, na forma da lei;

b) em atenção ao item 5.6. do Edital e ao Art. 14, e incisos, da Lei n.º 14.133/2021, não estou impedido de participar direta ou indiretamente desta licitação, e ainda, que não possuo sócios, diretores ou gerentes, que sejam cônjuge, companheiro ou parente em linha reta, colateral ou por afinidade, até o terceiro grau, inclusive, de membros ou de servidores ocupantes de cargo de direção, chefia ou assessoramento no âmbito do Ministério Público do Estado do Amazonas e de sua CPL;

c) recebi o edital e todos os documentos que o integram, dispondo de todos os elementos e informações necessários à elaboração da proposta de preços com total e completo conhecimento do objeto da licitação;

d) os documentos e declarações apresentados são fiéis e verdadeiros;

e) caso seja vencedor do certame e não cadastrado no SISTEMA DE ADMINISTRAÇÃO FINANCEIRA E CONTABILIDADE da SECRETARIA DA FAZENDA DO ESTADO DO AMAZONAS – SEFAZ-AM, encaminharei à CONTRATANTE os documentos necessários para efetuar o referido cadastramento no prazo de 05 (cinco) dias úteis, a contar da adjudicação, sob pena de perder o direito de preferência à contratação em favor dos demais licitantes subsequentes, sem prejuízo da possibilidade de responder a procedimento administrativo de responsabilização (PAR) por eventual retardamento da licitação;

f) o preço inclui, além do lucro, todos os custos e despesas, com tributos incidentes e encargos devidos, materiais, serviços, transporte, a integralidade dos custos para atendimento dos direitos trabalhistas assegurados na Constituição Federal, nas leis trabalhistas, nas normas infralegais, nas convenções coletivas de trabalho e nos termos de ajustamento de conduta vigentes na data de entrega das propostas, bem como quaisquer outras despesas diretas e indiretas incidentes na prestação de serviços;

g) a proposta apresentada para participar do presente Pregão foi elaborada de maneira independente por esta licitante e o seu conteúdo não foi, no todo ou em parte, direta ou indiretamente, informado, discutido ou recebido de qualquer outro participante potencial ou de fato, por qualquer meio ou por qualquer pessoa.

Sorocaba, 30 de junho de 2025.

_____

Torino Informática Ltda- CNPJ: 03.619.767/0005-15
Rodrigo do Amaral Rissio- Socio Procurador

Observação: A apresentação da proposta implicará a plena aceitação, por parte do licitante, das condições estabelecidas neste edital e seus anexos, bem como, todas as especificações do objeto contidas na proposta vinculam a fornecedora.

DECLARAÇÃO DE CUMPRIMENTO AO ARTIGO 7º, INCISO XXXIII

Ref: EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP

A empresa Torino Informática LTDA., inscrita no CNPJ sob o nº 03.619.767/0005-15, estabelecida na Rua AV 600 S/N QUADRA 15– MODULO 10 –na SERRA/ES , DECLARA para os fins de direito, na qualidade de licitante que em cumprimento ao inciso XXXIII, do artigo 7º. da Constituição Federal de que não possuímos em nosso quadro funcional pessoas menores de 18 (dezoito) anos em trabalho noturno, perigoso ou insalubre e, de menores de 16 (dezesseis) anos em qualquer trabalho, salvo na condição de aprendiz, a partir dos 14 (quatorze) anos.

Por ser expressão de verdade, firmamos o presente

.

Sorocaba, 30 de Junho de 2025.

_____

Torino Informática Ltda- CNPJ: 03.619.767/0005-15
Rodrigo do Amaral Rissio- Socio Procurador

DECLARAÇÕES COMPLEMENTARES

Ref: EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP

Declaro para os devidos fins junto à Comissão Permanente de Licitação que:

a) cumpro plenamente os requisitos de habilitação e estou ciente de que respondo pela veracidade das informações prestadas, na forma da lei;

b) em atenção ao item 5.6. do Edital e ao Art. 14, e incisos, da Lei n.º 14.133/2021, não estou impedido de participar direta ou indiretamente desta licitação, e ainda, que não possuo sócios, diretores ou gerentes, que sejam cônjuge, companheiro ou parente em linha reta, colateral ou porafinidade, até o terceiro grau, inclusive, de membros ou de servidores ocupantes de cargo de direção, chefia ou assessoramento no âmbito do Ministério Público do Estado do Amazonas e de sua CPL;

c) recebi o edital e todos os documentos que o integram, dispondo de todos os elementos e informações necessários à elaboração da proposta de preços com total e completo conhecimento do objeto da licitação;

d) os documentos e declarações apresentados são fiéis e verdadeiros;

e) caso seja vencedor do certame e não cadastrado no SISTEMA DE ADMINISTRAÇÃO FINANCEIRA E CONTABILIDADE da SECRETARIA DA FAZENDA DO ESTADO DO AMAZONAS – SEFAZ-AM, encaminharei à CONTRATANTE os documentos necessários para efetuar o referido cadastramento no prazo de 05 (cinco) dias úteis, a contar da adjudicação, sob pena de perder o direito de preferência à contratação em favor dos demais licitantes subsequentes, sem prejuízo da possibilidade de responder a procedimento administrativo de responsabilização (PAR) por eventual retardamento da licitação;

f) o preço inclui, além do lucro, todos os custos e despesas, com tributos incidentes e encargos devidos, materiais, serviços, transporte, a integralidade dos custos para atendimento dos direitos trabalhistas assegurados na Constituição Federal, nas leis trabalhistas, nas normas infralegais, nas convenções coletivas de trabalho e nos termos de ajustamento de conduta vigentes na data de entrega das propostas, bem como quaisquer outras despesas diretas e indiretas incidentes na prestação de serviços;

g) a proposta apresentada para participar do presente Pregão foi elaborada de maneira independente por esta licitante e o seu conteúdo não foi, no todo ou em parte, direta ou indiretamente, informado, discutido ou recebido de qualquer outro participante potencial ou de fato, por qualquer meio ou por qualquer pessoa.

Sorocaba, 30 de junho de 2025.

Torino Informática Ltda- CNPJ: 03.619.767/0005-15
Rodrigo do Amaral Rissio- Socio Procurador

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

OFÍCIO Nº 235.2025.CPL.1661828.2025.001317

Manaus, *na data da assinatura.*

Ao Senhor

CARLOS ALEXANDRE DOS SANTOS NOGUEIRA

Chefe do Setor de Infraestrutura e Telecomunicação

Assunto: Análise de Propostas de Preços referente ao **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ SRP**.

Senhor Chefe,

Cumprimentando-o com o presente, informamos que tramita nesta Comissão Permanente de Licitação o Processo SEI n.º 2025.001317, referente ao **PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP,** cujo objeto é o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses*.

Isto posto, encaminhamos os autos em epígrafe a esse **Setor de Infraestrutura e Telecomunicação - SIET,** para **análise e manifestação** quanto às proposta de preço abaixo elencadas:

1 . **E.R. SOLUCOES INFORMATICA LTDA.** , CNPJ (MF) n.º 05.778.325/0005-47, para o Item 1 (doc. 1661819 e 1661785); e

2. **TORINO INFORMÁTICA LTDA.** , CNPJ (MF) n.º 05.778.325/0005-47, para o Item 2 (doc. 1661825); e

3 . **POSITIVO TECNOLOGIA S/A (Filial)**, CNPJ (MF) n.º 81.243.735/0009-03, para o Item 3 (doc. 1661786).

Atenciosamente,

Maurício Araújo Medeiros

Pregoeiro - PORTARIA 606/2025/SUBADM

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 01/07/2025, às 15:30, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1661828** e o código CRC **9BF36D7F**.

SERRA 03.07.2025

PROCURADORIA GERAL DE JUSTICA DO ESTADO DO AMAZONAS
MANAUS - AM

A/C DEPARTAMENTO DE LICITAÇÃO

REF.: Pregão Eletrônico n°94010-2025

Objeto da licitação: Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e
assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de
garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça,
por um período de 12 meses.

ersolucoes.com.br | contato@ersolucoes.com.br | 16 3234-4433
Avenida Cem, S/N - Quadra 01 - Sala 01 Piso 02 CEP:
29161-384 Serra - ES

Proposta de Preço ITEM 4 - ER SOLUÇÕES DE INFORMÁTICA (1663839) SEI 2025.001317 / pg. 1749

E.R. Soluções de Informática Ltda.
CNPJ: 05.778.325/0005-47
Inscrição Estadual: 836.6381-52
Inscrição Municipal: 470931
Telefone/Fax +55 16 3234-4433
E-mail: ersolucoes@ersolucoes.com.br
End.: Av. Cem, S/N - Quadra 01 - Sala 01 - Piso 02 - CEP: 29161-384, Serra - ES

Prezados,

Vimos por meio desta, apresentar nossa proposta comercial e temos o prazer de encaminhar, para análise e apreciação, uma breve apresentação desta empresa, com o intuito de conhecerem nosso prestígio.

Desde 1997 prestando serviços em Tecnologia da Informação, a ER Soluções esteve sempre presente nos principais acontecimentos da Indústria da Informática no Brasil.

Com larga experiência varejista além da já premiada atuação no setor governamental e agora com uma ativa presença no mercado SMB regional, a E.R. Soluções obteve importantes parcerias permitindo a presença constante nos principais usuários de TI. Adquirimos competências fundamentais envolvendo as principais tecnologias e os melhores fabricantes do mercado, destacando-se Dell, Lenovo, Microsoft e VMware, entre outras parceiras.

É com este know-how que oferecemos produtos e serviços com o que há de mais moderno dentro das melhores práticas em TI, com equipes de profissionais treinados e certificados, elaborando projetos, apresentando soluções, atendendo necessidades, e prevendo demandas para os mais diversos negócios em todo o território nacional.

O documento a seguir apresenta a proposta de equipamentos, softwares e serviços para o referido pregão.

Desde já agradecemos a oportunidade de oferecer os nossos produtos e serviços, e nos colocamos à disposição para os esclarecimentos adicionais que se fizerem necessários.

1.Proposta Comercial

	Descrição	Valor Unitário	Quantidade	Total
1	**ThinkPad P16v Gen 2 (INTEL)**	R$ 16.990,00	20,00	**R$ 339.800,00**

Total Geral **R$ 339.800,00**

Serra, 03.07.2025
Atenciosamente,

Julia Barbosa Avelar
julia@ersolucoes.com.br
CPF: 318.101.328-51
RG: 54.193.926-9

2.Especificações Técnicas

ITEM 1 - ThinkPad P16v Gen 2 (INTEL)

Lenovo ThinkPad P16v G2 Intel - PN 21KYCTO1WW (Configurado para atender ao edital)
Tela 16” FHD – 1920x1080 IPS - Web Cam 1080p FHD
Processador Core™ Ultra 7 165H
Memoria (2x16) 32GB DDR5 5600 MHz
Armazenamento 1TB SSD M.2 NVMe TLC
Sistema Operacional Windows 11 Professional Português
NVIDIA® RTX 500 Ada Generation Laptop GPU 4GB GDDR6
Intel® Arc™ Graphics| HDMI 2.1 | SD Express 7.0 card reader
1x porta USB 3.2 Tipo A + 2x Thunderbolt 4 / USB 4 40Gbps
2 slots de memória com suporte a expansão para até 96GB DDR5 5600 MHz
Intel Wi-Fi 6 AX211, 802.11ax 2x2 Wi-Fi + Bluetooth 5.3 | 1x RJ-45
Chipset Intel SoC (System on Chip) | TPM 2.0
High Definition (HD) Audio, Realtek® ALC3287 codec | Stereo speakers 2x 2W
Bateria Integrada 90 Wh
Fonte 170W Slin 3pin AC Adapter - Brasil
Dispositivo apontador UltraNav (TrackPoint + TouchPad)
Teclado Português BR ABNT2 Resistente ao derramamento de líquidos, retroiluminado e com fingerprint
Peso de 2.22 kg - Preto
Licença Absolute - 5 anos
Logo na Bios | Serviço de Imagem | Logo a laser | Danos acidentais | Retenção HD
+
Maleta Lenovo USB 4X41M69795
Mouse USB Lenovo Essential 4Y50R20863

Garantia do Fabricante de 60 meses on-site (notebook) e 36 meses on-site bateria com tempo de atendimento e solução conforme solicitados
Demais características, conforme solicitadas

https://psref.lenovo.com/Product/ThinkPad/ThinkPad_P16v_Gen_2_Intel

3.Condições Comerciais

Validade da Proposta:
O prazo de validade da proposta é de 90 (noventa) dias, a contar da data de sua apresentação.

Entrega
Em até 90 (noventa) dias corridos, contados do primeiro dia útil subsequente ao do recebimento da respectiva Nota
de Empenho. e/ou Autorização de Fornecimento de Materiais e Serviços.

Local de Entrega
Av. Coronel Teixeira, nº 7.995, Nova Esperança II
CEP. 69037-473, Manaus-AM

Condições de Pagamento:
10 (dez dias) úteis para a liquidação da despesa, a contar do recebimento da nota fiscal ou instrumento de cobrança equivalente
pela Administração;

Dados da Conta Bancária:
Banco do Brasil Cód. Agência: 001
Agência: 3235-2
Conta Corrente: 115.747-7

DECLARAMOS, que nos preços contidos na Proposta de Preços, estão incluídos todos os custos diretos e indiretos, sem que caiba, em qualquer caso, direito regressivo sobre a execução de serviços, objeto desta licitação, tais como: impostos, taxas, frete CIF, transportes, inclusive o lucro do fornecedor, materiais, equipamentos, mão-de-obra, encargos sociais, trabalhistas e previdenciários, tributos e contribuições de qualquer natureza ou espécie, não cabendo, portanto, nenhuma reclamação posterior no sentido de alteração de preços.

DECLARAMOS, que aceitamos todas as condições estabelecidas no edital e nos anexos do Pregão Eletrônico n°94010-2025

DECLARAMOS, que a fabricante possui recurso disponibilizado via website do próprio fabricante https://pcsupport.lenovo.com/br/pt/warrantylookup, para realizar a validação e verificação da garantia do equipamento através da inserção do número de série do equipamento e também disponibiliza em seu web site http://support.lenovo.com/us/en/lenovodiagnosticsolutions, software capaz de realizar testes de diagnóstico de hardware.

DECLARAMOS, ainda, que a Lenovo dispões de telefone gratuito 0800-701-4815 (ligações fora da cidade de São Paulo) e 11 3889-8986 (ligações de São Paulo) para abertura de chamados técnicos em Língua Portuguesa e service desk com histórico dos registros, e que os drivers, atualizações e suporte dos produtos Lenovo, estão disponíveis para download no site http://support.lenovo.com/br/pt. Os chamados serão abertos através de código de identificação único para cada máquina. Durante o prazo de garantia, será substituída sem ônus a contratante, a parte ou peça defeituosa, salva quando o defeito for provocado por uso inadequado dos equipamentos. A Lenovo possui um canal específico para auxiliá-lo no descarte desses produtos. Caso você possua um produto Lenovo em situação de descarte, ligue para o nosso SAC ou encaminhe um e-mail para: reciclar@lenovo.com, informando o modelo, número de série e cidade, a fim de envio das instruções para o correto descarte do seu produto Lenovo.

DECLARAMOS, que todos os equipamentos a serem entregues serão novos, idênticos, com componentes externos e internos de mesmo modelo e marca dos equipamentos ofertados na proposta, salvo se o equipamento não se encontrar mais disponível no mercado no ato do pedido. Em caso de descontinuidade do produto oferecido, ou diante da indisponibilidade devidamente comprovada, este será substituído pelo sucedâneo com as mesmas características ou superiores, ou ainda, por um modelo com características idênticas ou superiores ao ofertado, mediante análise de catálogos, durante todo o período de validade da Ata de Registro de Preços ou do Contrato vigente.

Serra 03.07.2025
Atenciosamente,

Julia Barbosa Avelar
julia@ersolucoes.com.br
CPF: 318.101.328-51
RG: 54.193.926-9

PROCURADORIA GERAL DE JUSTICA DO ESTADO DO AMAZONAS
MANAUS - AM

REF.: Pregão Eletrônico n°94010-2025

DECLARAÇÃO DE DADOS PARA ASSINATURA DA ATA

A empresa **E.R. SOLUÇÕES INFORMÁTICA LTDA**, apresenta, a seguir, os dados de seus representantes legais para assinatura do eventual contrato:

Dados Do Licitante

1) Razão Social/ Nome Fantasia: E.R. Soluções Informática Ltda.
2) CNPJ: 05.778.325/0005-47
3) Inscrição Estadual: 836.6381-52
4) Inscrição Municipal: 470931
5) Endereço: Avenida Cem, S/N - Quadra 1 - Sala 01 Piso 02, CEP: 29161-384 – Serra - ES
6) Telefones: Fixo – 16-3234-4433 Fax 16 3234-4433
7) Celular (16) 98812-4308
8) E-mail julia@ersolucoes.com.br / gov@ersolucoes.com.br

Representante: George Eduardo Saliby
Cargo: Diretor Comercial
Endereço Residencial: Rua Severiano Amaro Dos Santos Nº 700 Apto 93 - Jardim Botânico CEP 14021-620 – Ribeirão Preto -SP
Telefones: 16-3234-4433 / 16 99132-4429
CPF: 982.913.358-34
RG.: 7.854.271-6/SSP
Estado Civil: Divorciado
Nacionalidade: Brasileiro

Representante: André Luís Machado Pelicioni
Cargo: Diretor Administrativo
Endereço Residencial: - Av. Giuseppe Cilento n° 1811– Apto 302 - Jardim Botânico CEP. 14.021-650 – Ribeirão Preto / SP
Telefones: 16-3234-4433 / 16 99129-7439
CPF: 248.785.548-78
RG.: 18.658.107 – SSP/SP
Estado Civil: Casado
Nacionalidade: Brasileiro

Serra, 03.07.2025
Atenciosamente,

Julia Barbosa Avelar
julia@ersolucoes.com.br
CPF: 318.101.328-51
RG: 54.193.926-9

PROCURADORIA GERAL DE JUSTICA DO ESTADO DO AMAZONAS
Manaus - AM

REF.: Pregão Eletrônico n°94010-2025

DECLARAÇÃO CONJUNTA

A empresa **E.R. SOLUÇÕES INFORMATICA LTDA**, cadastrada no CNJP sob nº **05.778.325/0005-47** sediada na Avenida Cem, S/N – Quadra – 01 Sala 01 Piso 02, na cidade de Serra estado do Espírito Santo, através de seu representante legal **Srta. Julia Barbosa Avelar**, brasileira, solteira, vendedora, portador do RG n°54.193.926-9 SSP/SP , cadastrado no CPF sob nº 318.101.328-51, residente e domiciliado na cidade de Ribeirão Preto na Rua João Vendrusculo, 3100 - Ribeirão Verde CEP 14.079-328, declara para todos os fins de direito, especificamente para participação da licitação na modalidade epigrafada e conforme Lei Federal nº 8.666/93 e Constituição Federal, que:

a) Que até a presente datada, não há fato superveniente impeditivo à sua habilitação para participação em processos/procedimentos licitatórios junto a órgãos públicos, comprometendo-se a declará-lo(s) caso venha(m) a ocorrer.

b) Que está em situação regular junto ao Ministério do Trabalho. Para fins do disposto no inciso V do art. 27 da Lei nº 8.666, de 21 de junho de 1993, acrescido pela Lei nº 9.854, de 27 de outubro de 1999, não possuímos em nosso quadro de pessoal menores de 18 anos em trabalho noturno, perigoso ou insalubre e menores de 16 anos, em qualquer outro tipo de trabalho, salvo na condição de aprendiz, a partir de 14 anos, nos moldes do inciso XXXIII do artigo 7º da CF.

c) Que não foi declarada inidônea ou apenada por suspensão pelo Poder Público de qualquer esfera (Art. 87 IV);

d) Que cumpre todas as normas relativas à saúde, higiene e segurança do trabalho de seus empregados.

e) Que não possui funcionários, dirigentes ou acionistas detentores do controle da empresa participante da licitação, que possuam vínculos direto ou indireto com Administração do referido processo, nos termos do art. 9º da Lei Federal 8.666/93;

f) Que não está impedida de contratar com a Administração Pública do referido processo licitatório,

direta ou indiretamente e que se compromete a comunicar ocorrência de fatos supervenientes.

g) Que, conforme disposto no art. 93 da Lei nº 8.213, de 24 de julho de 1991, estou ciente do cumprimento da reserva de cargos prevista em lei para pessoa com deficiência ou para reabilitado da Previdência Social e que, se aplicado ao número de funcionários da minha empresa, atendo às regras de acessibilidade previstas na legislação.

h) Sob as penas da Lei, declaro que cumpro a Cota de Aprendizagem - DCCA, nos termos estabelecidos no art. 429 da CLT da Consolidação das Leis do Trabalho – CLT.

i) Que não possuo, em minha cadeia produtiva, empregados executando trabalho degradante ou forçado, observando o disposto nos incisos III e IV do art.1º e no inciso III do art.5º da Constituição Federal.

j) Que emite Nota Fiscal Eletrônica – NF-e.

k) Que examinou cuidadosamente o processo contendo o Edital Completo, nela não achando nenhuma falta ou irregularidade que comprometesse a legalidade do certame licitatório, aceitando e submetendo-se, portanto, aos itens editalícios, às cláusulas contratuais e às condições físicas ora estipuladas para a execução do objeto licitado;

l) Que estou ciente e concordo com as condições contidas no edital e seus anexos, bem como de que cumpro plenamente os requisitos de habilitação definidos no edital.

m) Que se responsabiliza integralmente pela prestação dos serviços e qualidade dos materiais ora contratados;

Serra, 03.07.2025
Atenciosamente,

Julia Barbosa Avelar
julia@ersolucoes.com.br
CPF: 318.101.328-51
RG: 54.193.926-9

Soluções Tecnológicas

DECLARAÇÕES COMPLEMENTARES

Declaro para os devidos fins junto à Comissão Permanente de Licitação que:

a) cumpro plenamente os requisitos de habilitação e estou ciente de que respondo pela veracidade das informações prestadas, na forma da lei;

b) em atenção ao **item 5.6.** do Edital e ao **Art. 14, e incisos, da Lei n.º 14.133/2021,** não estou impedido de participar direta ou indiretamente desta licitação, e ainda, que não possuo sócios, diretores ou gerentes, que sejam cônjuge, companheiro ou parente em linha reta, colateral ou por afinidade, até o terceiro grau, inclusive, de membros ou de servidores ocupantes de cargo de direção, chefia ou assessoramento no âmbito do Ministério Público do Estado do Amazonas e de sua CPL;

c) recebi o edital e todos os documentos que o integram, dispondo de todos os elementos e informações necessários à elaboração da proposta de preços com total e completo conhecimento do objeto da licitação;

d) os documentos e declarações apresentados são fiéis e verdadeiros;

e) caso seja vencedor do certame e não cadastrado no SISTEMA DE ADMINISTRAÇÃO FINANCEIRA E CONTABILIDADE da SECRETARIA DA FAZENDA DO ESTADO DO AMAZONAS – SEFAZ-AM, encaminharei à CONTRATANTE os documentos necessários para efetuar o referido cadastramento no prazo de 05 (cinco) dias úteis, a contar da adjudicação, sob pena de perder o direito de preferência à contratação em favor dos demais licitantes subsequentes, sem prejuízo da possibilidade de responder a procedimento administrativo de responsabilização (PAR) por eventual retardamento da licitação;

f) o preço inclui, além do lucro, todos os custos e despesas, com tributos incidentes e encargos devidos, materiais, serviços, transporte, a integralidade dos custos para atendimento dos direitos trabalhistas assegurados na Constituição Federal, nas leis trabalhistas, nas normas infralegais, nas convenções coletivas de trabalho e nos termos de ajustamento de conduta vigentes na data de entrega das propostas, bem como quaisquer outras despesas diretas e indiretas incidentes na prestação de serviços;

g) a proposta apresentada para participar do presente Pregão foi elaborada de maneira independente por esta licitante e o seu conteúdo não foi, no todo ou em parte, direta ou indiretamente, informado, discutido ou recebido de qualquer outro participante potencial ou de fato, por qualquer meio ou por qualquer pessoa.

Serra, 03 de Julho de 2025.
E.R.SOLUÇÕES INFORMÁTICA LTDA
05.778.325/0005-47

Julia Barbosa Avelar
julia@ersolucoes.com.br
CPF: 318.101.328-51
RG: 54.193.926-9

Docusign Envelope ID: 584A497D-0AF3-4A88-9365-C6BBBAB81E01

São Paulo, 27 de junho de 2025.

À
E.R. SOLUÇÕES INFORMÁTICA LTDA

A **LENOVO TECNOLOGIA (BRASIL) LTDA.** ("Lenovo"), pessoa jurídica de direito privado, inscrita no CNPJ/MF sob o nº 07.275.920/0001-61, com escritório administrativo estabelecido na Rua Werner Von Siemens, 111 — Prédio 11 / Torre A — 3º e 4º andar— Bairro da Lapa — São Paulo / SP - CEP 05069-900, **DECLARA** que a empresa **E.R. SOLUÇÕES INFORMÁTICA LTDA**, inscrita no CNPJ/MF sob o nº **05.778.325/0005-47** , sediada na **AV. CEM S/N - SERRA - ES,** está cadastrada nos sistemas internos da Lenovo como revenda autorizada, estando apta a comercializar os produtos abaixo discriminados:

Família	Part Number	Garantia/SLA
ThinkCentre M70Q Gen 5	**13E2CTO1WW**	**Garantia de 60 meses on site - 5WS0T36190 + Retenção HD 60 meses on site - 5PS0K26186 + Danos Acidentais 60 meses on site - 5PS0Q13075**
ThinkCentre M70Q Gen 5	**12TGCTO1WW**	**Garantia de 60 meses on site - 5WS0T36190 + Retenção HD 60 meses on site - 5PS0K26186 + Danos Acidentais 60 meses on site - 5PS0Q13075**
ThinkVision TIO24 Gen 5	**12NAGAR1US**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkVision T24i-30	**63CFMAR1BR**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkStation P3 Tower	**30GUCTO1WW**	**Garantia de 60 meses on site - 5WS1F52293 + Retenção HD 60 meses on site - 5PS0Q11741 + Danos Acidentais 60 meses on site - 5PS0Q25585**
ThinkVision T27HV-30	**63D6UAR3US**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkVision T27I-30	**63A4MAR1BR**	**Garantia de 60 meses on site - 5WS0T30708 + Danos Acidentais 60 meses on site - 5PS0R33478**
ThinkPad E14 Intel Gen 6	**21M8CTO1WW**	**Garantia de 60 meses on site - 5WS1C98064 + Retenção HD 60 meses on site - 5PS0K27099 + Danos Acidentais 60 meses on site - 5PS0K27092 + Bateria 36 meses - 5WS0L01988**
ThinkPad P16v Gen 2	**21KYCTO1WW**	**Garantia de 60 meses on site - 5WS1H31751 + Retenção HD 60 meses on site - 5PS1H31796 + Danos Acidentais 60 meses on site - 5PS1H31752 + Bateria 36 meses - 5WS1H31713**
ThinkCentre M70Q Gen 5	**13E2CTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39013**
ThinkCentre M70Q Gen 5	**12TGCTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39013**
ThinkStation P3 Tower	**30GUCTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39164**
ThinkPad E14 Intel Gen 6	**21M8CTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1L39126**
ThinkPad P16v Gen 2	**21KYCTO1WW**	**Garantia Premier Support Plus 60 meses on site - 5WS1M88187**

A Lenovo declara ainda que os produtos acima citados:

- Teclado no padrão ABNT2 Português.
- Cpu, teclado, mouse e monitor possuem mesmo padrão de cor e são de fabricação Lenovo.
- Placa mãe fabricada para uso exclusivo
- BIOS com direitos copyright.
- Componentes do produto são novos (sem uso, reforma ou recondicionamento) e produtos pertencentes à Linha Corporativa.
- Os equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, que utilizam materiais recicláveis.
- Os produtos estão em linha de produção sem previsão de encerramento antes de 90 dias.
- Possuem BIOS desenvolvida pela Lenovo em Flash Memory onde somos responsáveis por atualizações e manutenções, em idioma inglês ou português. Implementada em memória Flash-ROM, com suporte plug-and-play, tipo flash EPROM e SMBIOS 2.4.
- Possui Memoria não volátil e reprogramável.
- Possuir recursos de controle de permissão através de senhas.

Docusign Envelope ID: 584A497D-0AF3-4A88-9365-C6BBBAB81E01

- Possibilita que a senha de acesso ao BIOS seja ativada e desativada via SETUP. Suporte a senha de inicialização, Power on, administrador e disco rígido.
- Logo do fabricante na inicialização sendo permitido sua customização, número de série do equipamento gravada na Bios, campo editável que permite inserir identificação customizada como inclusão de identificação e patrimônio, podendo ser consultada e atualizada por software de gerenciamento e via comandos DMI.
- Bios com capacidade de habilitar/desabilitar drivers de entrada e saída, individualmente portas USB, webcam, áudio e microfone.
- Atualização da BIOS por meio de interface gráfica através de utilitário, dentro do sistema operacional ou site do fabricante.
  Em atendimento as diretrizes da lei Nº 12 305/2010, que institui a Política Nacional de Resíduos Sólidos, o fabricante do equipamento será responsável pelo mecanismo de Logística Reversa.
- Suporte ao padrão de gerenciamento DMI 2.0 em conformidade com a especificação UEFI 2.8 e capturáveis pela aplicação de inventário SCCM.
- Suporte a ACPI 6.3 com controle automático de rotação do ventilador da CPU. Monitoramento das velocidades dos coolers, temperatura do processador e tensão utilizada pela fonte Possui sistema de dissipação de calor dimensionado suportando operar por 12 horas diárias.
- Software de Diagnóstico, embarcado no BIOS para diagnóstico de problemas que permite o teste do equipamento, com independência do Sistema Operacional, capaz de ser executado através da tecla função. Capaz de verificar, testar emitir relatório através de tela gráfica com o andamento do teste e informações sobre o fabricante, modelo do equipamento, processador memória, firmware, capacidade do disco.
- Conformidade com a NIST 800 147 nos padrões de criptografia com função integrada para apagar dados do disco rígido de forma segura não permitindo sua recuperação através de ferramentas.
  Em Conformidade NIST 800-88
- A BIOS está em conformidade com a normativa de segurança NIST 800-193 ou ISO/IEC 19678:2015, de maneira a usar métodos de criptografia robusta para verificar a integridade da BIOS antes de passar o controle de execução à mesma;
- Capacidade de desligamento do vídeo e do disco após tempo determinado pelo usuário e religamento por acionamento de teclado ou movimentação do mouse com função de economia de energia para monitor, placa mãe e disco.
- Permite o boot através de unidade de disco óptico, dispositivo USB ou pela rede.
- Permite a replicação da Bios pela rede ou por USB.
- Placa mãe fabricada pela Lenovo, com Lenovo serigrafado na placa, desenvolvida para o mercado corporativo.
  Placa mãe suporta Virtualização baseada em hardware.
- Possui Chip de segurança TPM 2.0 integrado, acompanhado do software capaz de implementar as principais funcionalidades do mesmo.
- Lenovo possui sistema de carregamento de imagens personalizadas, e serviço de gravação de logotipo a laser no gabinete.
- Placa de Rede com tecnologia WOL e PXE 2.1.
- Disco com suporte a tecnologia SMART, e tecnologia redutora de danos ao disco rígido, NCQ e AHCI.
- Placa mãe suporta os padrões de gerenciamento WMI.
- Acompanha cabo de alimentação e plug de acordo com a NBR 14136.
- Todas as fontes são bivolts (100 a 240 V)
- A garantia do monitor ofertado cobre ainda o reparo ou substituição do monitor no caso do aparecimento de no mínimo 3 pixels queimados.
- Suporte ao sistema operacional Linux Ubuntu.
  O Bios mostra as configurações de hardware, possuí modo gráfico interativo por mouse e teclado e possuí no próprio hardware cópia de segurança capaz de restauração automática, permitindo carregar em outro equipamento do mesmo modelo estando com senha ou não.
  O Bios possui gravação de Log de eventos acessíveis pelo BIOS, Sistema Operacional e Software de Gerenciamento.
- Bios reconhece automaticamente os discos rígidos instalados.
- Teclado (TECLA00) - possui proteção contra o derramamento de líquidos;

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- Teclado do Notebook citado possui proteção contra o derramamento de líquidos. Acabamentos feito de materiais não cortantes. Permite que o equipamento seja aberto sem a perda de garantia.
- Possuem a capacidade de funcionalidade de segurança avançada de rastreamento pela internet que, em caso de furto ou extravio, permita recuperação e localização do equipamento.
- O compartilhamento randômico de memória RAM com a placa gráfica integrada pode chegar até 50% do total de memória RAM instalada, com o sistema operacional Windows Pro.
- Equipamentos com Microsoft Windows possuem chave de ativação gravada na Bios.
- O desktop possui função que permite ligar o equipamento através de uma combinação de teclas no teclado conectado através de porta USB.
- Conectores integrados à placa-mãe identificados no padrão de cores PC'99 System Design Guide.
- Bios possui capacidade de proteção da memória flash contra gravação.
- Possui função de teste do equipamento, com independência do sistema operacional instalado, capaz de ser executado a partir da UEFI, através do acionamento da tecla função (F1...F12). Este teste verifica, mostra o andamento e emite relatório de componentes, como processador, memória, disco rígico, etc.
- Equipamentos que possuem RJ-45, a interface de rede é compatível com os padrões Ethernet, Fast-Ethernet e Gigabit Ethernet, autosense, full-duplex e plug-and-play, configurável totalmente por software, com função wake-on-lan instalada e em funcionamento, PXE 2.1, TCP/IP/UDP Checksum Offload e RSS (Receive Side Scailling), operando em 10/100/1000 Mbps de forma automática.
- Garantia onsite com atendimento 9x5 (nove horas por cinco dias úteis).
- A substituição das peças estão inclusas durante o prazo de garantia.
- O atendimento pela Assistência Técnica (tempo de solução de um chamado técnico para a definitiva solução) será conforme o edital.
- A garantia não será afetada caso a Contratante venha a instalar placas de rede local, de fax-modem, interfaces específicas para acionamento de outros equipamentos, adicionar unidades de disco rígido, bem como se alterar a capacidade de memória RAM do equipamento, ressaltando que a garantia destes opcionais será total responsabilidade da Contratante.
- O Desktop SFF suporta o peso do monitor quando está na horizontal.
- Para o processo listado, os equipamentos possuem as seguintes fontes:
- -TIO24+M70Q: possuir eficiência igual ou superior a 89%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);
- -P3 Tower: possuir eficiência igual ou superior a 92%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);
- -E14 Intel G6: possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);
- -P16v G2: possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);

- Assistências Técnicas:
- -Regional Manaus - Sede: Manaus - Rua Paracaima, n° 120, Novo Israel, Manaus - AM - Tel.: (92) 98125-1119

- https://support.lenovo.com/br/pt

- O número 0800-701-4815 é o telefone do suporte técnico da Lenovo para os produtos ThinkVision, ThinkPad, ThinkCentre, ThinkStation e ThinkServer.

A Lenovo é responsável pelo atendimento "on site" da garantia padrão dos equipamentos, conforme o Termo de Garantia Padrão da Lenovo, mediante assistência técnica devidamente autorizada e credenciada.

A Garantia adicional/SLA deve ser previamente adquirida pela Revenda, mediante os termos de extensão da Garantia dos produtos.

Para acesso a certificações e quaisquer outras informações sobre os produtos acima listados, podem ser consultadas no site: https://psref.lenovo.com

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Para acesso a Drivers, atualizações, Software, Diagnósticos, Catálogos, Manuais e Guia de Instalação, podem ser consultados no site: https://pcsupport.lenovo.com/br/pt

Os drivers, atualizações e suporte dos produtos Lenovo estão disponíveis para download, e busca das autorizadas técnicas Lenovo mais próxima no site:
https://pcsupport.lenovo.com/br/en/partnerlocator#providerProductName

A Lenovo dispõe de telefone gratuito 0800-701-4815 (ligações fora da cidade de São Paulo) para abertura de chamados técnicos em Língua Portuguesa e service desk.

A presente declaração foi emitida por solicitação da **E.R. SOLUÇÕES INFORMÁTICA LTDA** para atendimento ao Edital **94010/2025**, promovido pela **PROCURADORIA GERAL DE JUSTIÇA DO ESTADO DO AMAZONAS - MPAM.**

Atenciosamente,

Assinado por:
Valter Artea
91541403867D44E...

DocuSigned by:
Maurício Misumi
9359B24D385E4FE...

Valter Artea **Maurício Misumi**
LENOVO TECNOLOGIA (BRASIL) LTDA.

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

OFÍCIO Nº 243.2025.CPL.1663760.2025.001317

Manaus, *na data da assinatura.*

Ao Senhor

CARLOS ALEXANDRE DOS SANTOS NOGUEIRA

Chefe do Setor de Infraestrutura e Telecomunicação

Assunto: Análise de Propostas de Preços referente ao **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ SRP**.

Senhor Chefe,

Cumprimentando-o com o presente, informamos que tramita nesta Comissão Permanente de Licitação o Processo SEI n.º 2025.001317, referente ao **PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP,** cujo objeto é o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses*.

Isto posto, encaminhamos os autos em epígrafe a esse **Setor de Infraestrutura e Telecomunicação - SIET,** para **análise e manifestação** quanto às proposta de preço abaixo elencadas:

1. E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.º 05.778.325/0005-47, para o Item 4 (doc. 1663839), Anexo I (doc. 1663842) e Anexo II (doc. 1663846).

Atenciosamente,

Maurício Araújo Medeiros

Pregoeiro - PORTARIA 606/2025/SUBADM

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 03/07/2025, às 12:23, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1663760** e o código CRC **00AB690B**.

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - CEP 69000-000 - Manaus - AM - www.mpam.mp.br

PARECER Nº 16.2025.SIET.1661858.2025.001317

5PROCESSO DE COMPRA: 2025.001317 Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ SRP Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317
OBJETO: Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.

1. **Relatório**

Trata-se de pedido de compatibilização da proposta da empresa **TORINO INFORMÁTICA LTDA.,** melhor classificada para o **ITEM 2: MICROCOMPUTADOR TIPO 2 - "WORKSTATION COM MONITOR PRINCIPAL E MONITOR AUXILIAR"** , na fase de disputas do Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ, documento 1661825, recebido no dia 1/7/2025.

2. **Da Análise**

2.1 Produto ofertado

Item	Descrição	Quantidade	Produto Ofertado
1	**ITEM 2: MICROCOMPUTADOR TIPO 2 - "WORKSTATION COM MONITOR PRINCIPAL E MONITOR AUXILIAR"** **Marca/Modelo de Referência:** Lenovo THINKSTATION P3 TW.	50	**SUBITEM 2.1: MICROCOMPUTADOR TIPO 2 – "WorkStation Torre"** WORKSTATION HP Z2 G9 TOWER **SUBITEM 2.2: MONITOR PRINCIPAL 27 POL WIDESCREEN** Monitor Philips 27" Hello Webcam 5MP, 27B1U5601H **SUBITEM 2.3: "MONITOR AUXILIAR 27 POL WIDESCREEN"** Monitor AOC 27" ajustável e HUB, 27P2Q

2.2 Análise comparativa

DESCRIÇÃO	PARECER	OBSERVAÇÕES
Computador tipo "workstation", memória RAM: 32GB DDR-5 UDIMM ECC, núcleos por processador: mínimo 8, armazenamento mínimo SSD: 256GB, mais HDD: 1TB 7.200RPM, alimentação: bivolt automática, sistema operacional: OEM incluído; monitor principal multimídia e monitor auxiliar mínimos de 27 pol widescreen. Equipamento novo, partes e peças, de primeiro uso, com as seguintes características:		
SUBITEM 2.1: MICROCOMPUTADOR TIPO 2 – "WorkStation Torre"		
1. PLACA PRINCIPAL (PLACA-MÃE)		
1. A placa mãe deve ser construída pelo próprio fabricante do microcomputador ou produzida sob a especificação dele, não sendo aceito placas de livre comercialização no mercado, nem em regime de OEM;		
2. Deverá possuir chipset produzido pelo fabricante do processador ofertado;		
3. Deve possuir, no mínimo, 4 (quatro) slots para memória RAM, "do tipo DDR-5 UDIMM, ou superior", permitindo a instalação de até 128 (cento e vinte e oito) Gigabytes;		
4. Deve suportar tecnologia Dual Channel de utilização de memória RAM, ou superior;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
5. Deve possuir, no mínimo, 6 (seis) interfaces de disco, sendo que no mínimo 2 (duas) interfaces internas, Serial ATA III (600), ou superior e 2 (duas) Sockets M.2 para SSD SATA ou NVMe;	⚠	Não encontrado no caderno de especificações indicação do número de interfaces de disco, do computador ofertado, nem sua distribuição.
6. Deve ter controladora para implementar array de discos do tipo RAID 0/1 para unidades conectadas nos slots M.2, e RAID 0/1 para unidades nas interfaces SATA;		
7. Deve possuir no mínimo, 1 (um) slot PCIe 4.0 x16, 01 (um) slot PCIe 3.0 x4 e 01 (um) slot PCIe 3.0 x1;		
8. Deve possuir recursos DASH 1.0 (Desktop and mobile Architecture for System Hardware), ou tecnologia minimamente equivalente;		
9. Deve ser compatível com Energy Star 7.0/7.1, ou tecnologias superiores;		
10. Deve possuir capacidade de desligamento do vídeo e do disco rígido após tempo determinado pelo usuário, religamento por acionamento de teclado ou mouse, bem como função de economia de energia para monitor, placa mãe e unidades de armazenamento internas;		
11. Deve possuir chip TPM (Trusted Platform Module), versão 2.0, ou superior, soldado à placa principal, e destinado ao armazenamento de senhas, certificados digitais e chaves criptográficas em conformidade com as especificações do Trusted Computing Group;		
12. Deve possuir sistema de detecção de intrusão de chassis, com respectivo acionador instalado no gabinete que permita a detecção de abertura ainda que o equipamento esteja desligado da fonte de energia, devendo gerar log na memória flash da BIOS com todos os eventos de intrusão;		
13. Deve possuir suporte a virtualização por hardware;		
14. Deve possuir suporte a implementação de extensões de virtualização de I/O por hardware;		
15. Deve possuir suporte a aceleração de segurança AES no hardware;		
16. Deve possuir suporte à tecnologia de acesso remoto out-of-band embutida no hardware;		
17. Deve possuir controle da velocidade de rotação do cooler do processador de forma automática, de acordo com a variação de temperatura da CPU;		
18. Deve suportar boot por pendrive ou disco conectado a uma porta USB 3.1;		
19. Deve suportar a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/https boot.	⚠	Suporte ao http/https boot.
2. BIOS		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. O BIOS deve ser desenvolvido pelo mesmo fabricante do equipamento ou customizado por ele;		
2. O fabricante do equipamento, deverá ser totalmente responsável pelo BIOS fornecido juntamente com a placa mãe e pela atualização do mesmo, devendo promover as alterações que se façam necessárias e corrigir problemas ou danos causados ao equipamento em razão desse BIOS ou de procedimentos de atualização deste, (que poderão ser acompanhados pela empresa caso haja necessidade), durante o período de garantia do equipamento;		
3. BIOS em português ou inglês, desenvolvido em conformidade com a especificação UEFI 2.5 ou superior (http://www.uefi.org) e capturáveis pela aplicação de inventário SCCM (System Center Configuration Manager);		
4. O fabricante deverá comprovar a compatibilidade com o padrão UEFI através do site http:// www.uefi.org/members, na categoria membros;		
5. Deve ser do tipo flash EPROM, atualizável por software, compatível com o padrão plug-and-play;		
6. Deve ser lançado a partir de 2016 e entregue na versão mais atual disponibilizada pelo fabricante;		
7. Deve ter suporte a ACPI, ou tecnologia superior;		
8. Deve ser desenvolvido de acordo com o padrão de segurança NIST 800-147 ou ISO/IEC 19678:2015, para garantir a integridade do BIOS;		
9. Deve possuir recursos de controle de permissão através de senhas, sendo uma para inicializar o computador e outra para acesso e alterações das configurações do BIOS;		
10. Deve possuir software embarcado no BIOS com funções de diagnóstico de problemas, e gerenciamento com as seguintes características: 1. Permitir o teste do equipamento, com independência do sistema operacional instalado, o software de diagnóstico deve ser capaz de ser executado (inicializado) a partir da UEFI (Unified /Extensible Firmware Interface) ou do Firmware do equipamento através do acionamento de tecla função (F1...F12); 2. O software de diagnóstico deverá ser capaz de informar, através de tela gráfica: O fabricante e modelo do equipamento, processador, memória RAM, firmware, e capacidade do disco rígido;		
11. Deve possuir ferramenta que possibilite realizar a formatação definitiva dos dispositivos de armazenamento conectados ao equipamento, desenvolvida em acordo com o padrão de segurança NIST 800-88 ou ISO/IEC 27040:2015. Caso esta ferramenta não seja nativa do BIOS, deverá ser oficialmente homologada pelo fabricante do equipamento;		
12. Deve possuir opção para exportar/importar configurações. No caso de ferramenta externa fornecida para atender esse item, a mesma deve ser disponibilizada no web site de suporte do fabricante, em conjunto com outras ferramentas relacionadas e homologadas para o modelo do equipamento;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
13. Deve oferecer a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela CONTRATANTE;	⚠	O fabricante declara ser possível, mas indica que "*as customizações deverão estar descritas na proposta comercial emitida pela CONTRATADA*"
14. Deve possuir campo não editável com o número de série do equipamento gravado em memória não volátil e campo editável que permita inserir identificação customizada (identidade patrimonial com pelo menos 10 caracteres). Serão aceitos BIOS com reprogramação via software desde que estes estejam devidamente licenciados para o equipamento e disponibilizados para download no web site de suporte do fabricante;	□	
15. Deverá permitir o gerenciamento remoto do microcomputador mesmo desligado, desde que energizado pela rede elétrica e conectado localmente à rede de dados, permitindo ligar e desligar o microcomputador remotamente, com controle de acesso, e com possibilidade de definir horários programados; 1. Deve permitir acesso remoto através da rede ao POST (procedimento de inicialização) e BIOS para leitura e gravação, mesmo com o equipamento desligado; 2. Deverá permitir acesso remoto ao sistema operacional e processo de inicialização do microcomputador através de interface gráfica, com controle remoto do mouse e teclado (KVM remoto), independente do suporte de aplicações locais ou estado do sistema operacional; 3. Possuir a capacidade de inventário remoto de Hardware mesmo com o equipamento desligado.	□	
3. PROCESSADOR		
1. O processador ofertado, deverá possuir minimamente 8 (oito) núcleos e 16 (dezesseis) threads de processamento, podendo atingir frequência de operação interna de até 5.4 GHz em modo turbo, no mínimo;	□	
2. Em caso de processadores com arquitetura de computação heterogênea (big.LITTLE), só serão contabilizados os cores voltados para performance, na contagem mínima de núcleos, threads e ciclos de clock base (MHz);	□	
3. Memória cache total de, no mínimo, 32MB;	□	
4. O conjunto chipset e processador deve ser indicado por seu fabricante como destinado para uso em WorkStations;	□	
5. O processador deverá pertencer à última geração disponível utilizada pelo fabricante do equipamento, com desempenho mínimo de 41.800 (quarenta e um mil e oitocentos) pontos, considerando o uso pleno de todos os núcleos e sem a aplicação de configurações específicas para aumento ou modificação de desempenho, como "overclock", "undervoltage", "overvoltage" ou quaisquer outras que não estejam em conformidade com os padrões definidos pelo fabricante; 1. O desempenho será comprovado por intermédio de resultados de BenchMark, disponíveis em: http://www.cpubenchmark.net/cpu_list.php; 2. Será admitida uma margem de tolerância de 2% (dois por cento) do desempenho mínimo exigido.	□	
6. Deve possuir tecnologia de controle dinâmico de frequência do processador para núcleos individuais e ou múltiplos núcleos;	□	

DESCRIÇÃO	PARECER	OBSERVAÇÕES
7. Deve possuir controlador com suporte à memória RAM do tipoDDR5-4400 MT/s, ou superior;	□	
8. Deverá possuir tecnologia de fabricação de 10 nm (dez nanômetros) ou inferior;	□	
9. TDP(Thermal Design Power) típico de 65W, e máximo de 220W, declarado pelo fabricante;	□	
10. Deve possuir instruções do padrão AVX 2.0, ou superior;	□	
11. Deve possuir instruções do padrão SSE4.1/4.2, ou superior;	□	
12. Deve possuir instruções que implementem extensões de virtualização de hardware;	□	
13. Deve possuir instruções AES-NI embutidas;	□	
14. O proponente deverá declarar em sua proposta comercial o modelo do processador ofertado.	□	
4. MEMÓRIA RAM		
1. Deverá possuir, no mínimo, 32 (trinta e dois) Gb de memória RAM instalados, do tipo ECC (Error Correcting Code), com capacidade de expansão mínima de 128 (cento e vinte e oito) Gb;	□	
2. Deverá ser do tipo DDR-5 SODIMM ou superior e possuir, no mínimo, 4.400 MT/s de velocidade de comunicação com o barramento principal;	□	
3. A implementação do total de memória RAM deve utilizar 2 (dois) módulos, em modo dual channel;	□	
4. A memória ofertada, deverá possuir as melhores especificações possíveis dentre as disponíveis para o equipamento proposto;	□	
5. Os módulos devem ser instalados durante o processo de manufatura do computador, e homologados como parte do equipamento, inclusive estando cobertos pela garantia e suporte como descrito no Termo de Referência.	□	
5. UNIDADES DE ARMAZENAMENTO		
1. Deve possuir, no mínimo, 1 (uma) unidade padrão tipo Solid State Drive (SSD) interna instalada do tipo M.2, na capacidade mínima de 256Gb e velocidade mínima de gravação de 1.200MB/s;	□	
2. Deve utilizar interface tipo M.2 PCIe 4.0, com o protocolo NVMe, ou superior;	□	
3. Deve possuir, no mínimo, 1 (uma) unidade secundária de disco rígido (HDD) interna instalada, na capacidade mínima de 1Tb e velocidade de rotação mínima de 7.200RPM; 1. Deve utilizar interface Serial ATA III 600, ou superior; 2. Deve ter capacidade de armazenamento de 1 TB, no mínimo;	□	
4. As unidades devem ser instaladas durante o processo de manufatura do computador, e homologadas como parte do equipamento, inclusive estando cobertas pela garantia e suporte como descrito no Termo de Referência.	□	

DESCRIÇÃO	PARECER	OBSERVAÇÕES
6. INTERFACES DE REDE		
1. Deve possuir, no mínimo, 1 (uma) interface de rede RJ45 compatível com os padrões 10, 100 e 1000 Mbps, autosense, full-duplex e plug-and-play, configurável totalmente por software e com função wake-on-lan instalada e em funcionamento;		
2. A controladora ethernet, deverá ser do tipo "onboard", e suportar recurso WOL (Wake On LAN);		
3. Deve possuir, no mínimo, 01 (uma) interface de rede sem fios no padrão Wi-Fi 6 (802.11 B/G/N/AX), com velocidade de até 1.73Gbps, Tecnologia MU-MIMO, banda dupla em 2.4Ghz e 5Ghz, e suporte a Bluetooth 5.0 ou superior;		
4. As controladoras Wi-Fi e Bluetooth, deverão estar em um único cartão M.2, placa PCIe , conectado em slot específico na placa mãe, ou soldadas diretamente na mesma, “onboard”;		
6. No caso de cartão M.2 ou placa PCIe, o hardware deve ser instalado durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência.		
6. As interfaces Wireless ofertadas devem possuir, na data da entrega da proposta, homologação junto à ANATEL com certificado disponível publicamente no endereço eletrônico desta agência, conforme a Resolução n.º 242 de 30 de novembro de 2000.		
7. CONECTIVIDADE		
1. Deverá possuir no mínimo 2 (duas) portas USB 3.2, do tipo A, localizadas na parte frontal do gabinete;		
2. Deverá possuir no mínimo 4 (quatro) portas USB 3.2, do tipo A, localizadas na parte traseira do gabinete;		
3. Possuir 1 (uma) porta USB 3.2 Tipo C;		
4. Não serão aceitas portas USB instaladas adicionalmente como placas PCI ou adaptadores. As portas devem fazer parte do projeto original da placa mãe do equipamento proposto;		
5. Deverá possuir leitor de cartões de memória integrado com suporte à cartões SD (Secure Digital).		
8. CONTROLADORA DE VÍDEO		
1. Deve possuir controladora com no mínimo 8 (oito) GB de memória GDDR6 dedicada, com largura de banda para a VRAM de 128 bits, suportando gráficos 3D/2D e DirectX 12, ou superior;		
2. Deve suportar Pixel Shader 3.0, ou superior;		
3. Deve suportar OpenGL 4.6, ou superior;		
4. Deve suportar Vulkan 1.2, ou superior;		
5. Deve suportar HDCP ou HDR;		
6. Deve suportar a resolução mínima de 3840 X 2160 @ 60 Hz;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
7. Tipo de bus PCI Express x8;	☐	
8. Possuir, no mínimo, um total de 3 (três) portas de vídeo, suportando a utilização de até 2 (dois) monitores auxiliares simultânea e independentemente do monitor principal; 1. Os tipos das portas de vídeo supracitadas devem ser, no mínimo, HDMI 1.4 e/ou DisplayPort 1.2; 2. Serão aceitos adaptadores para atender todas as portas supra citadas, em detrimento das portas diferenciadas e disponíveis na controladora de vídeo externa;	☐	
9. A controladora de vídeo proposta deverá alcançar pontuação mínima de desempenho de 10.500 pontos aferidos pelo site https://www.videocardbenchmark.net/gpu_list.php;	☐	
10. Deverá ser homologada pelo fabricante, com comprovação através de catálogo do equipamento;	☐	
11. Deve suportar, no mínimo, o uso de 3 (três) monitores simultânea e independentemente.	☐	
9. CONTROLADORA DE SOM E MULTIMÍDIA		
1. O equipamento deve possuir uma controladora de som integrada, do tipo "onboard", padrão "High Definition Audio";	☐	
2. Deve possuir, no mínimo, uma interface de som com 1 (um) conector combinado para fone de ouvido e microfone, de 3,5 MM, na parte frontal do gabinete;	☐	
3. Deve possuir, no mínimo, 1 alto-falante interno, com 2 Watts RMS de potência, compatível com a controladora de som.	☐	
10. TECLADO		
1. A marca do teclado deverá ser igual à do fabricante do equipamento ofertado;	☐	
2. Deve ser USB, no idioma padrão, Português (Brasil), ABNT-II;	☐	
3. Deve possuir teclas multimídia, com no mínimo, aumentar e diminuir volume, além do mute;	☐	O fabricante declara que o teclado "*não possui teclas dedicadas de funções multimedia, desligar, hibernar ou standby*".
4. Admite-se a utilização de teclas de função (F1...F12), para tais ações;	☐	
5. Deve possuir teclado numérico integrado;	⚠	Não diretamente mencionado na declarado na HP
6. Deve possuir, no mínimo, LEDs indicadores de estado das teclas capslock e numlock;	☐	
7. Deve possuir ajuste de inclinação;	☐	
8. Deve ser em gradações das cores preto ou prata;	⚠	Não declarado na proposta a cor do teclado

DESCRIÇÃO	PARECER	OBSERVAÇÕES
9. Não será aceito teclado com cabo retrátil;	□	
10. Não será aceito teclado wireless/bluetooth (sem fio).	□	
11. MOUSE		
1. Mouse óptico com conexão USB, de 3 (três) botões e sistema de rolagem, com formato ergonômico e com design ambidestro, devendo possuir resolução mínima por hardware de 1.000 dpi;	□	
2. Deve ser da mesma marca do fabricante do equipamento ofertado;	□	
3. Deve ser em gradações das cores preto ou prata;	□	
4. Deve acompanhar mousepad ergonômico com apoio em gel para o pulso, do mesmo fabricante do equipamento;	⚠	Não declarado na proposta o acampanhamento do mousepad ergonômico.
5. O mouse ou teclado ofertados, deve possuir um leitor biométrico, certificado para trabalhar com a autenticação do Microsoft Windows Hello.	□	O mouse declarado pelo fabricante não possui leitor biométrico. Nem o teclado
12. FORMATO DE MANUFATURA E FONTE DE ALIMENTAÇÃO		
1. O computador deve ser produzido no formato WorkStation Torre;	□	
2. Gabinete com volume mínimo de 19 (dezenove) e máximo de 27 (vinte e sete) litros e construído de material reforçado;	□	
3. Deverá possuir botão de liga/desliga na parte frontal do gabinete, com LED de indicação de que o equipamento está energizado, em local visível e acessível do gabinete.	□	
4. Deverá possuir pelo menos 2 (duas) baias internas para discos rígidos de 2,5 ou 3,5 polegadas;	□	
5. O gabinete deverá possuir um slot específico para conexão de tranca física de segurança do tipo Kensington ou similar. Deve ser entregue junto com o equipamento, a trava de forma a impedir a abertura do equipamento;	⚠	Não encontrado no caderno de especificações a indicação do slot.
6. O material do gabinete deve ser de estrutura livre de BFR e outros materiais tóxicos e/ou antiecológicos;	□	
7. O gabinete deve possuir acabamento interno composto de superfícies não cortantes;	□	
8. Deverá oferecer a possibilidade de, se demandado, aplicar logo oficial da contratante, com área de impressão mínima de 3,00 x 2,72 cm, através de sistema de gravação direta como aplicação em Laser, não sendo admitido o uso de adesivagem, serigrafias ou adaptações semelhantes. A gravação deverá ser feita apenas no gabinete da workstation visando medidas de segurança;	⚠	O fabricante declara ser possível, mas indica que "*as customizações deverão estar descritas na proposta comercial emitida pela CONTRATADA*"

DESCRIÇÃO	PARECER	OBSERVAÇÕES
9. Deve ser fornecido com fonte de alimentação interna do mesmo fabricante e compatível com o equipamento, com potência mínima de 500W (quinhentos Watts), suficiente para suportar todos os dispositivos internos (placa mãe, interfaces, unidades de armazenamento, memória RAM e demais componentes e periféricos);		
10. A fonte de alimentação deve possuir eficiência igual ou superior a 92%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);		
11. A fonte deve aceitar tensão de entrada 110 e 220 Volts, de forma automática;		
12. Deverá ser fornecido um cabo de alimentação Y (para CPU e monitor), com conexão à rede elétrica no padrão NBR 14136:2002.	⚠	Solicita-se a declaração expressa do fornecimento deste item.
13. SISTEMA OPERACIONAL E SOFTWARES COMPLEMENTARES		
1. Deve acompanhar o equipamento licença OEM do sistema operacional Microsoft Windows 11 Professional de 64 bits, ou versão mais recente, no idioma Português Brasil;		
2. O equipamento deve ser entregue com o Windows 11 Professional 64 bits, ou versão mais recente instalado;		
3. Cada equipamento deve incluir uma licença específica de software dedicado para: • Controle: Funções de bloqueio e desbloqueio remoto. • Inventário: Gestão detalhada de hardware e software do equipamento. • Rastreabilidade: Recursos de geolocalização integrados.	⚠	Não encontrado especificação
4. O software de controle e monitoramento deve possuir a funcionalidade de persistência, garantindo a preservação do cliente do software e de suas funcionalidades, mesmo após a perda total de dados ou formatação do disco rígido, utilizando tecnologia de residência em firmware;	⚠	
5. A interface de controle e monitoramento dos equipamentos deve ser baseada em nuvem, sem a necessidade de licenças adicionais além daquelas atribuídas a cada equipamento;	⚠	
6. A licença do software dedicado deve ter cobertura mínima equivalente ao período de garantia do equipamento, de 60 (sessenta) meses, e deve estar plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;		
7, Os equipamentos poderão ser entregues com imagem de instalação do sistema operacional e softwares customizada e previamente fornecida pela CONTRATANTE, conforme especificado no Termo de Referência.	⚠	O fabricante declara ser possível, mas indica que "*as customizações deverão estar descritas na proposta comercial emitida pela CONTRATADA*"
14. COMPATIBILIDADE		
1. Deve ser apresentado o certificado de compatibilidade dos equipamentos com o sistema operacional Windows 11 x64 obtido junto à Microsoft. Deverá constar no Microsoft Hardware Compatibility List (HCL) para o modelo e sistema operacional exigido e ofertado;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
2. A comprovação da compatibilidade será efetuada pela apresentação do documento Hardware Compatibility Test Report emitido especificamente para o modelo no sistema operacional ofertado, ou pela indicação no site da Microsoft;	□	
3. O equipamento deverá possuir certificado de homologação comprovando a compatibilidade do mesmo com, pelo menos, uma distribuição de Linux. A comprovação da compatibilidade será efetuada pela apresentação de documento emitido especificamente para o modelo ofertado;	□	
4. O equipamento, na configuração ofertada, deve possuir certificado de conformidade contra incidentes elétricos e de combustão dos materiais (IEC/EN 60950) e de imunidade eletromagnética (IEC/EN 61000), comprovado através de certificados ou do relatório de avaliação de conformidade nos moldes da portaria 170/2012 vigente do INMETRO, ou similar Internacional;	□	
15. OUTROS REQUISITOS		
1. Todas as partes do equipamento (gabinete, base, teclado e mouse) devem ter coloração neutra em gradações de preto ou prata, mantendo o padrão e cor;	⚠	Não foi apresentado o catálogo do teclado e do mouse, ou mesmo declarado sua cor.
2. Equipamento deverá ser novo, partes e peças, de primeiro uso, que deverão ser acondicionados em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;	□	
3. Todos os equipamentos deverão ser entregues idênticos, ou seja, todos os componentes externos e internos deverão ter os mesmos modelo e marca;	□	
4. Informar marca e modelo dos componentes utilizados na solução e apresentar prospecto com as características técnicas do equipamento e da placa mãe, processador, memórias, interfaces de rede, fonte de alimentação, unidade de armazenamento, mouse e teclado, incluindo especificação de marca, modelo, e outros elementos que de forma inequívoca identifiquem e constatem as configurações, possíveis expansões e upgrades, comprovando-os através de certificados, manuais técnicos, folders e demais literaturas técnicas editadas pelos fabricantes;	□	
5. O equipamento proposto deverá estar em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;	□	
6. Não serão aceitos produtos descontinuados por seus fabricantes, não devendo constar em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não poderão ter previsão de descontinuidade de fornecimento, suporte ou vida;	⚠	Não apresentou comprovante, ou não foi possível constatar se a workstation atende ao requisito.
7. O equipamento em pleno funcionamento deve atender à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que deverá acompanhar a proposta;	□	
8. Deverá ter compatibilidade eletromagnética e de radiofrequência IEC 61000 comprovado através de certificado ou relatório de avaliação de conformidade emitido por órgão credenciado pelo INMETRO ou internacional equivalente;	□	

DESCRIÇÃO	PARECER	OBSERVAÇÕES
9. Deverá ter compatibilidade com o padrão DMI 2.0 (Desktop Management Interface) ou mais recente da DMTF (Desktop Management Task Force), comprovado através de documentação expedida pelo fabricante do equipamento ou comprovação de que o fabricante do equipamento é membro do consórcio DMTF listado em uma das categorias BOARD ou LEADERSHIP;	□	
10. Deverá ter compatibilidade com a norma TPM Specification Version 2.0 especificadas pelo TCG (Trsted Computing Group), devendo o fabricante ser membro de uma das categorias listadas no site http://www.trustedcomputinggroup.org/about_tcg/tcg_members;	□	
11. Deverá ter compatibilidade com EPEAT na nova categoria Bronze, comprovada através de atestados ou certidões que mostrem que o equipamento é aderente ao padrão de eficiência energética EPEAT, emitido por instituto credenciado junto ao INMETRO ou equivalente internacional;	□	
12. Será admitida como comprovação também, a indicação que o equipamento consta no site www.epeat.net na nova categoria Bronze;	□	
13. Não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS (Restriction of Certain Hazardous Substances);	□	
14. Os equipamentos deverão pertencer à linha corporativa, não sendo aceitos equipamentos destinados ao uso da linha doméstica;	□	
15. A comprovação deverá ser apresentada junto com a proposta;	□	
16. Não serão aceitos equipamentos que contenham lacres de violação de garantia por abertura, que inviabilizem a inspeção dos componentes à qualquer momento;		
17. Garantia de 60 (sessenta) meses on-site, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo.	⚠	Necessário diligências.
SUBITEM 2.2: MONITOR PRINCIPAL 27 POL WIDESCREEN		
1. TELA		
1. Deve ser de tecnologia IPS (In-Plane Switching) ou VA (Vertical Alignment);	□	
2. Tamanho de 27 polegadas widescreen, com variação inferior a 3%;	□	
3. Resolução mínima de 2560x1440 a 60Hz, 16 milhões de cores;	□	
4. Ângulo de visão mínimo de 170° horizontal e vertical;	□	
5. Deve possuir controle digital de brilho, contraste e posicionamentos vertical e horizont**al.**	□	
2. INTERFACES		
1. Possuir, no mínimo, 2 (duas) portas de entrada de vídeo;	□	

DESCRIÇÃO	PARECER	OBSERVAÇÕES
2. Não importando os tipos de portas de entrada, deve acompanhar cabos que permitam conectar o monitor a equipamentos com portas de tipo HDMI 1.4 e DisplayPort 1.2;	□	
3. Serão aceitos adaptadores, em adicional aos cabos originais, para contemplar a possibilidade de conexão às portas de entrada solicitadas;	□	
4. O equipamento deve ter HUB USB 3.0 interno, com 1 (uma) porta USB para upstream a partir do PC;	□	
5. Deve possuir 4 (quatro) portas USB 3.0, sendo no mínimo 2 (duas) na lateral, na parte inferior ou na traseira do equipamento;	□	
6. Deve ter 1 (uma) porta combinada de 3,5mm para saída de fone de ouvido e entrada de microfone.	□	
3. MULTIMÍDIA		
1 O monitor deve possuir uma webcam, de no mínimo 5.0 megapixels;	□	
2. Deve incorporar microfone, com cancelamento de ruído, voltados para captar o som do usuário em frente ao monitor;	□	
3. Deve possuir 2 (dois) alto-falantes de 5W cada, integrados na parte frontal ou inferior do monitor.	□	
4. OUTROS REQUISITOS		
1. A cor deve ser predominantemente a mesma da cor ofertada no subitem **2.1 "MICROCOMPUTADOR Workstation"**;	□	
2. Possuir certificação de segurança UL ou IEC 60950;	□	
3. Possuir certificação de economia de energia EPA Energy Star, TCO 5.0 ou similar;	□	
4. Deve aceitar tensões de 110 e 220 Volts de forma automática;	□	
5. Deve acompanhar cabo de alimentação original do fabricante com conector de tomada elétrica no padrão brasileiro (NBR 14136:2002);	□	
6. O equipamento deverá vir acondicionado em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;	□	
7. Os equipamentos não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS - Restriction of Certain Hazardous Substances.	□	
8. O equipamento deve possuir interface de montagem no padrão VESA 100 x 100mm.	□	
9. Deverá possuir mecanismo físico para bloquear/obstruir a função da webcam;	□	
10. O equipamento proposto deverá estar em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;	⚠	Não foi possível diligenciar se o equipamento está em linha de produção.

DESCRIÇÃO	PARECER	OBSERVAÇÕES
11. Não serão aceitos produtos descontinuados por seus fabricantes, não devendo constar em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não poderão ter previsão de descontinuidade de fornecimento, suporte ou vida;	⚠	Não foi possível diligenciar.
12. O equipamento em pleno funcionamento deve atender à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que deverá acompanhar a proposta;		
13. Garantia de 60 (sessenta) meses on-site, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo.	⚠	Necessário diligências.
SUBITEM 2.3: "MONITOR AUXILIAR 27 POL WIDESCREEN"		
1. TELA		
1. Deve ser de tecnologia IPS (In-Plane Switching) ou VA (Vertical Alignment);		
2. Tamanho de 27 polegadas widescreen, com variação inferior a 3%;		
3. Resolução mínima de 1920x1080 a 60Hz, 16 milhões de cores;		
4. Ângulo de visão mínimo de 170° horizontal e vertical;		
5. Deve possuir controle digital de brilho, contraste e posicionamentos vertical e horizontal;		
2. INTERFACES		
1. Possuir ao menos 2 (duas) portas de entrada de vídeo;		
2. Não importando os tipos de portas de entrada, deve acompanhar cabos que permitam conectar o monitor a equipamentos com portas de tipo HDMI 1.4 e DisplayPort; 1. Serão aceitos adaptadores, em adicional aos cabos originais, para contemplar a possibilidade de conexão às portas solicitadas no item acima.		
3. SUPORTE DE MONTAGEM		
1.O equipamento deve possuir interface de montagem no padrão VESA 100 x 100mm;		
2. O acessório deve possibilitar minimamente os seguintes movimentos do monitor: 1. Rotação de 90º; 2. Elevação de 10cm; 3. Panorâmica de 90º; 4. Inclinação de -5º a 20º;		
4. OUTROS REQUISITOS		
1. A cor deve ser predominantemente a mesma da cor ofertada no subitem **2.1 "MICROCOMPUTADOR Workstation"**;		
2. Possuir certificação de segurança UL ou IEC 60950;		
3. Possuir certificação de economia de energia EPA Energy Star, TCO 5.0 ou similar;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
4. Deve aceitar tensões de 110 e 220 Volts de forma automática;	□	
5. Deve acompanhar cabo de alimentação original do fabricante com conector de tomada elétrica no padrão brasileiro (NBR 14136:2002);	□	
6. O equipamento deverá vir acondicionado em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;	□	
7. Os equipamentos não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS - Restriction of Certain Hazardous Substances;	□	
8. Garantia de 60 (sessenta) meses on-site, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo.	⚠	Necessário diligências

3. Conclusão

Nas observações a seguir, os itens em alerta (⚠) indicam a necessidade de realizar diligências para que seja possível constatar seu atendimento aos requisitos. Os pontos indicados em □ não atendem às condições editalícias.

SUBITEM 2.1: MICROCOMPUTADOR TIPO 2 – "WorkStation Torre"

- **Placa Principal, item 5:** ⚠ Deve possuir, no mínimo, 6 (seis) interfaces de disco, sendo que no mínimo 2 (duas) interfaces internas, Serial ATA III (600), ou superior e 2 (duas) Sockets M.2 para SSD SATA ou NVMe;

Não encontrado no caderno de especificações indicação do número de interfaces de disco, do computador ofertado, nem sua distribuição.

- **Placa Principal, item 19:** ⚠ Deve suportar a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/https boot.

Verificou-se na documentação o suporte ao PXE. Porém, não há em nenhum trecho da proposta ou dos QuickSpecs referência ao suporte a boot via HTTP/HTTPS, conforme exigido no item 16 do Anexo I do TR ("...inicialização de sistema operacional ... por rede via PXE boot e http/https boot"). Solicita-se diligências.

- **Bios, item 13:** ⚠ Deve oferecer a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela CONTRATANTE;

O fabricante declara ser possível, mas indica que "*as customizações deverão estar descritas na proposta comercial emitida pela CONTRATADA*". Deste modo, a proponente deverá declarar expressamente em sua proposta que atende a este requisito.

- **Teclado, item 3**: □ Deve possuir teclas multimídia, com no mínimo, aumentar e diminuir volume, além do mute;

O fabricante declara que o teclado "*não possui teclas dedicadas de funções multimedia, desligar, hibernar ou standby*".

- **Teclado, item 5:** ⚠Deve possuir teclado numérico integrado;

Não diretamente mencionado na declarado na HP. Deste modo, a proponente deverá declarar expressamente em sua proposta que atende a este requisito.

- **Teclado, item 8:** ⚠Deve ser em gradações das cores preto ou prata;

Não diretamente mencionado na declarado na HP. Deste modo, a proponente deverá declarar expressamente em sua proposta que atende a este requisito.

- **Mouse, item 4:** ⚠Deve acompanhar mousepad ergonômico com apoio em gel para o pulso, do mesmo fabricante do equipamento;

Não declarado na proposta o acampanhamento do mousepad ergonômico com apoio em gel para o pulso.

- **Mouse, item 5:** □ O mouse ou teclado ofertados, deve possuir um leitor biométrico, certificado para trabalhar com a autenticação do Microsoft Windows Hello.

O mouse declarado pelo fabricante não possui leitor biométrico. Tão pouco o teclado.

- **Formato de manufatura e fonte de alimentação, item 5:** ⚠ O gabinete deverá possuir um slot específico para conexão de tranca física de segurança do tipo Kensington ou similar. Deve ser entregue junto com o equipamento, a trava de forma a impedir a abertura do equipamento;

Não encontrado no caderno de especificações a indicação do slot. Em que pese não haver a necessidade de declarar formalmente o fornecimento da tranca, destacamos desde já a obrigação do proponente.

- **Formato de manufatura e fonte de alimentação, item 8:** ⚠

O fabricante declara ser possível, mas indica que "*as customizações deverão estar descritas na proposta comercial emitida pela CONTRATADA*". Deste modo, a proponente deverá declarar expressamente em sua proposta que atende a este requisito.

- **Formato de manufatura e fonte de alimentação, item 12:** ⚠ Deverá ser fornecido um cabo de alimentação Y (para CPU e monitor), com conexão à rede elétrica no padrão NBR 14136:2002.

Solicita-se a declaração expressa do fornecimento deste item. Em que pese não haver a necessidade de declarar formalmente o fornecimento do cabo, destacamos desde já a obrigação do proponente.

- **Sistema Operacional e sw complementares, item 3, 4 e 5:** Cada equipamento deve incluir uma licença específica de software dedicado para: Controle: • Funções de bloqueio e desbloqueio remoto. • Inventário: Gestão detalhada de hardware e software do equipamento. • Rastreabilidade: Recursos de geolocalização integrados.

O proponente indicou o "software ABSOLUTO". A proponente deverá apresentar documentação que comprove que o "Software ABSOLUTO" oferece todas as funcionalidades do § 3.3 do TR (gestão 100 % em nuvem, geotracking, bloqueio/remoto, anti-adulteração, mecanismos de recuperação, logs etc.).

- **Sistema Operacional e sw complementares, item 10:** ⚠ Os equipamentos poderão ser entregues com imagem de instalação do sistema operacional e softwares customizada e previamente fornecida pela CONTRATANTE, conforme especificado no Termo de Referência.

O fabricante declara ser possível, mas indica que "*as customizações deverão estar descritas na proposta comercial emitida pela CONTRATADA*". Deste modo, a proponente deverá declarar expressamente em sua proposta que atende a este requisito.

- **Outros requisitos, item 1:** ⚠ Todas as partes do equipamento (gabinete, base, teclado e mouse) devem ter coloração neutra em gradações de preto ou prata, mantendo o padrão e cor;

Não foi apresentado o catálogo do teclado e do mouse, ou mesmo declarado sua cor. A proponente deverá apresentar o catálogo de tais dispositivos para permitir a perfeita compatibilização desses itens.

- **Outros requisitos, item 6:** ⚠ Não serão aceitos produtos descontinuados por seus fabricantes, não devendo constar em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não poderão ter previsão de descontinuidade de fornecimento, suporte ou vida;

Não foi possível diligenciar no site da HP a comprovação deste item. Solicita-se comprovação de cumprimento deste item.

- **Garantia de 60 (sessenta) meses on-site, item 17: Garantia de 60 (sessenta) meses on-site**, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo.

A declaração da HP apresentada indica:

> *• Possui garantia padrão de fábrica de 01 ano para reposição de peças, mão de obra, com atendimento "on-site", conforme descrito na proposta comercial emitida pela CONTRATADA;*
> *• Permite a extensão de garantia para 03, 04 ou 05 anos para reposição de peças, mão de obra, para o monitor, com atendimento do tipo "on-site" através de aquisição da CONTRADA de carepack de extensão de garantia, devendo descrever em sua proposta comercial a descrição da extensão da garantia (HP Carepack);*

a) Nota-se que a declaração do fabricante não faz indicação à proteção para danos não intencionais;

b) Solicita-se que o licitante substitua a declaração de garantia de sua proposta, onde se lê *"GARANTIA: 60 (SESSENTA) MESES ONSITE PARA O EQUIPAMENTO, CONFORME EDITAL;"* para sanar tais pendências, descrevendo em sua proposta comercial a descrição da extensão de garantia, inclusive declarando expressamente que será on-site, abrangendo acidentes, inclusive danos não intencionais, tais como QUEDA, TELA QUEBRADA, DERRAMAMENTO DE LÍQUIDOS, OSCILAÇÃO DE ENERGIA, não se limitando às ocorrências supracitadas, sendo o rol apresentado uma lista não exaustiva.

SUBITEM 2.2: MONITOR PRINCIPAL 27 POL WIDESCREEN

- **Outros requisitos, item 10:** ⚠ O equipamento proposto deverá estar em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;

Não foi possível diligenciar se o equipamento está em linha de produção. Solicita-se comprovação de cumprimento deste item.

- **Outros requisitos, item 11:** ⚠ Não serão aceitos produtos descontinuados por seus fabricantes, não devendo constar em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não poderão ter previsão de descontinuidade de fornecimento, suporte ou vida;

Não foi possível diligenciar se o equipamento está em linha de produção. Solicita-se comprovação de cumprimento deste item.

- **Outros requisitos, item 13:** ⚠ **Garantia de 60 (sessenta) meses on-site**, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo.

No catálogo de informações da Philips consta que a garantia é de três anos. Para atender as necessidades desta contratação, **o licitante precisa apresentar** declaração do fabricante atendendo a este requisito, ou indicação da assistência técnica autorizada da Philips, com cnpj, capaz de atender a esse serviço na modalidade on-site, em Manaus.

A declaração de garantia de sua proposta, precisa descrever, além do prazo, declarae que será on-site, abrangendo acidentes, inclusive danos não intencionais, tais como QUEDA, TELA QUEBRADA, DERRAMAMENTO DE LÍQUIDOS, OSCILAÇÃO DE ENERGIA, não se limitando às ocorrências supracitadas, sendo o rol apresentado uma lista não exaustiva.

SUBITEM 2.3: "MONITOR AUXILIAR 27 POL WIDESCREEN"

- **Outros requisitos, item 8:** ⚠ **Garantia de 60 (sessenta) meses on-site**, prestado pelo fabricante ou pela

assistência técnica autorizada do mesmo.

No catálogo de informações da AOC consta que a garantia é de três anos. Para atender as necessidades desta contratação, **o licitante precisa apresentar** declaração do fabricante atendendo a este requisito, ou indicação da assistência técnica autorizada da AOC, com cnpj, capaz de atender a esse serviço na modalidade on-site, em Manaus.

A declaração de garantia de sua proposta, precisa descrever, além do prazo, declarae que será on-site, abrangendo acidentes, inclusive danos não intencionais, tais como QUEDA, TELA QUEBRADA, DERRAMAMENTO DE LÍQUIDOS, OSCILAÇÃO DE ENERGIA, não se limitando às ocorrências supracitadas, sendo o rol apresentado uma lista não exaustiva.

Pela exposição de motivos, depreende-se que:

a) O teclado não atende;

b) O requisito de leitor biométrico no mouse e teclado não foi atendida;

c) As diligências de garantia e assistência técnica da Workstation HP, do monitor Philips e do monitor AOC precisam ser diligênciadas para assegurar o cumprimento dos requisitos;

d) Nos demais itens, a licitante poderar escoimar as pendências apresentando a documentação solicitada e reapresentando proposta declarando expressamente seu cumprimento.

É o parecer.

Manaus, 3 de julho de 2025.

FRANCISCO ELVISLÂNIO PEREIRA
Agente de apoio - Manutenção/Informática

WALESKA GRACIEME ANDRADE MARQUES DE OLIVEIRA
Agente Técnico - Analista de Banco de Dados

Documento assinado eletronicamente por **Waleska Gracieme Andrade Marques de Oliveira**, **Agente Técnico - Analista de Banco de Dados**, em 03/07/2025, às 16:48, conforme art. 1º, III, "b", da Lei 11.419/2006.

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MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - CEP 69000-000 - Manaus - AM - www.mpam.mp.br

PARECER Nº 18.2025.SIET.1664620.2025.001317

5PROCESSO DE COMPRA: 2025.001317 Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ SRP Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317
OBJETO: Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.

1. **Relatório**

Trata-se de pedido de compatibilização da proposta da empresa **POSITIVO TECNOLOGIA S/A (FILIAL)**, melhor classificada para o **ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"**, na fase de disputas do Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ, documento 1661786, recebido no dia 1/7/2025.

2. **Da Análise**

2.1 Produto ofertado

Item	Descrição	Quantidade	Produto Ofertado
1	**ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"** **Marca/Modelo de Referência:** Lenovo ThinkPad T14 GEN 5, Dell Latitude 5450.	300	L**ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"** Positivo Master N8450

2.2 Análise comparativa

3. Conclusão

Após análise da documentação apresentada pela licitante **Positivo Tecnologia S.A.**, referente ao **Item 3 – MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"**, não foi possível realizar a compatibilização completa e segura da proposta com as especificações técnicas exigidas no edital.

Verificou-se que a proposta comercial limita-se, em grande parte, à transcrição literal das especificações contidas no Anexo I – Termo de Referência, sem individualizar as características técnicas efetivas do equipamento ofertado. Tal prática compromete a aferição objetiva da aderência do produto às exigências editalícias.

Ainda que diversas características tenham sido parcialmente demonstradas por meio de cadernos e documentos técnicos anexos (tais como processador, conectividade e solução de rastreamento), em outros pontos relevantes – como **tela, armazenamento e placa-mãe** – os documentos trazem múltiplas alternativas ou linhas de produto, sem identificação inequívoca do modelo específico que será fornecido, o que inviabiliza a correta avaliação da proposta.

Importa destacar que o edital é claro ao estabelecer, no **subitem 18.14 do Anexo I – Especificações Técnicas**, a obrigatoriedade de:

> *"Informar marca e modelo dos componentes utilizados na solução e apresentar prospecto com as características técnicas do equipamento e da placa mãe, processador, memórias, interfaces de rede, fonte de alimentação e unidade de armazenamento, incluindo especificação de marca, modelo, e outros elementos que de forma inequívoca identifiquem e constatem as configurações, possíveis expansões e upgrades, comprovando-os através de certificados, manuais técnicos, folders e demais literaturas técnicas editadas pelos fabricantes."*

Dessa forma, **a ausência de identificação clara e individualizada dos componentes** inviabiliza a compatibilização plena da proposta com os requisitos estabelecidos no edital, comprometendo a transparência e a isonomia do certame.

Recomenda-se, portanto, caso a licitante seja instada a reapresentar a proposta técnica, que ela esteja em conformidade com o disposto no subitem 18.14, informando **marca, modelo e documentação comprobatória específica de todos os componentes**, de modo a permitir a verificação inequívoca da compatibilidade do produto ofertado com o objeto licitado.

É o parecer.

Manaus, 7 de julho de 2025.

FRANCISCO ELVISLÂNIO PEREIRA
Agente de apoio - Manutenção/Informática

WALESKA GRACIEME ANDRADE MARQUES DE OLIVEIRA
Agente Técnico - Analista de Banco de Dados

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PARECER Nº 19.2025.SIET.1665305.2025.001317

PROCESSO DE COMPRA:
2025.001317
Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ SRP
Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317

OBJETO:
Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com gara
por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsolet
dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.

1. **Relatório**

Trata-se de pedido de compatibilização da proposta da empresa **ER SOLUÇÕES INFORMÁTICA LTDA.** melhor classificada para o **ITEM 4: MICROCOMPUTADOR TIPO 4 – "WORKSTATION MÓVEL"** , na fase de disputas do Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ, documentos 1663839, 1663842 e 1663846, recebido no dia 3/7/2025.

2. **Da Análise**

2.1 Produto ofertado

Item	Descrição	Quantidade	Produto Ofertado
1	**ITEM 4: MICROCOMPUTADOR TIPO 4 – "WORKSTATION MÓVEL"** **Marca/Modelo de Referência:** Lenovo ThinkPad P16V GEN 1, Dell Precision 7680.	20	**ITEM 4: MICROCOMPUTADOR TIPO 4 – "WORKSTATION MÓVEL"** ThinkPad P16v Gen 2 (INTEL)

2.2 Análise comparativa

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. PLACA PRINCIPAL (PLACA MÃE)		
1. A placa mãe deve ser construída pelo próprio fabricante do microcomputador ou produzida sob a especificação do mesmo, não sendo aceito placas de livre comercialização no mercado, nem em regime de OEM;		
2. Deve possuir, no mínimo, 2 (dois) slots para memória RAM, "do tipo DDR-5 SODIMM", permitindo a instalação de até 96 (noventa e seis) Gigabytes;		
3. Deve suportar tecnologia Dual Channel de utilização de memória RAM;		
4. Deve possuir 2 (dois) Sockets M.2 para SSD SATA ou NVMe;		
5. Deve possuir 1 (um) Socket M.2 Para Cartões Wi-Fi/Bluetooth;		
6. Deve possuir recursos DASH 1.0 (Desktop and mobile Architecture for System Hardware), ou tecnologia minimamente equivalente;		
7. Deve ser compatível com Energy Star 7.0/7.1, ou tecnologias superiores;		
8. Deve possuir capacidade de desligamento do vídeo e do disco rígido após tempo determinado pelo usuário, religamento por acionamento de teclado ou mouse, bem como função de economia de energia para monitor, placa mãe e unidades de armazenamento internas;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
9. Deve possuir chip TPM (Trusted Platform Module), versão 2.0, ou superior, soldado à placa principal, e destinado ao armazenamento de senhas, certificados digitais e chaves criptográficas em conformidade com as especificações do Trusted Computing Group;		
10. Deve possuir suporte a virtualização por hardware;		
11. Deve possuir suporte a implementação de extensões de virtualização de I/O por hardware;		
12. Deve possuir suporte a aceleração de segurança AES no hardware;		
13. Deve possuir suporte à tecnologia de acesso remoto out-of-band embutida no hardware;		
14. Deve possuir controle da velocidade de rotação do cooler do processador de forma automática, de acordo com a variação de temperatura da CPU;		
15. Deve suportar boot por pendrive ou disco conectado a uma porta USB 3.1 ou 3.2;		
16. Deve suportar a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/https boot.		
2. BIOS		
1. O BIOS deve ser desenvolvido pelo mesmo fabricante do equipamento ou customizado por ele;		
2. O fabricante do equipamento, deverá ser totalmente responsável pelo BIOS fornecido juntamente com a placa mãe e pela atualização do mesmo, devendo promover as alterações que se façam necessárias e corrigir problemas ou danos causados ao equipamento em razão desse BIOS ou de procedimentos de atualização deste, (que poderão ser acompanhados pela empresa caso haja necessidade), durante o período de garantia do equipamento;		
3. BIOS em português ou inglês, desenvolvido em conformidade com a especificação UEFI 2.5 ou superior (http://www.uefi.org) e capturáveis pela aplicação de inventário SCCM (System Center Configuration Manager);		
4. O fabricante deverá comprovar a compatibilidade com o padrão UEFI através do site http:// www.uefi.org/members, na categoria membros;		
5. Deve ser do tipo flash EPROM, atualizável por software, compatível com o padrão plug-and-play;		
6. Deve ser lançado a partir de 2016 e entregue na versão mais atual disponibilizada pelo fabricante;		
7. Deve ter suporte a ACPI, ou tecnologia superior;		
8. Deve ser desenvolvido de acordo com o padrão de segurança NIST 800-147 ou ISO/IEC 19678:2015, para garantir a integridade do BIOS;		
9. Deve possuir recursos de controle de permissão através de senhas, sendo uma para inicializar o computador e outra para acesso e alterações das configurações do BIOS;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
10. Deve possuir software embarcado no BIOS com funções de diagnóstico de problemas, e gerenciamento com as seguintes características: 1. Permitir o teste do equipamento, com independência do sistema operacional instalado, o software de diagnóstico deve ser capaz de ser executado (inicializado) a partir da UEFI (Unified /Extensible Firmware Interface) ou do Firmware do equipamento através do acionamento de tecla função (F1...F12); 2. O software de diagnóstico deverá ser capaz de informar, através de tela gráfica: O fabricante e modelo do equipamento, processador, memória RAM, firmware, e capacidade do disco rígido;		
11. Deve possuir ferramenta que possibilite realizar a formatação definitiva dos dispositivos de armazenamento conectados ao equipamento, desenvolvida em acordo com o padrão de segurança NIST 800-88 ou ISO/IEC 27040:2015. Caso esta ferramenta não seja nativa do BIOS, deverá ser oficialmente homologada pelo fabricante do equipamento;		
12. Deve possuir opção para exportar/importar configurações. No caso de ferramenta externa fornecida para atender esse item, a mesma deve ser disponibilizada no web site de suporte do fabricante, em conjunto com outras ferramentas relacionadas e homologadas para o modelo do equipamento;		
13. Deve oferecer a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela **CONTRATANTE**;		
14. Deve possuir campo não editável com o número de série do equipamento gravado em memória não volátil e campo editável que permita inserir identificação customizada (identidade patrimonial com pelo menos 10 caracteres). Serão aceitos BIOS com reprogramação via software desde que estes estejam devidamente licenciados para o equipamento e disponibilizados para download no web site de suporte do fabricante;		
15. Deverá permitir o gerenciamento remoto do microcomputador mesmo desligado, desde que energizado pela rede elétrica e conectado localmente à rede de dados, permitindo ligar e desligar o microcomputador remotamente, com controle de acesso, e com possibilidade de definir horários programados; 1. Deve permitir acesso remoto através da rede ao POST (procedimento de inicialização) e BIOS para leitura e gravação, mesmo com o equipamento desligado; 2. Deverá permitir acesso remoto ao sistema operacional e processo de inicialização do microcomputador através de interface gráfica, com controle remoto do mouse e teclado (KVM remoto), independente do suporte de aplicações locais ou estado do sistema operacional; 3. Possuir a capacidade de inventário remoto de Hardware mesmo com o equipamento desligado.		
3. PROCESSADOR		
1. Deverá possuir, 6 (seis) núcleos, no mínimo, e 16 (dezesseis) threads de processamento com frequência de operação interna básica de, no mínimo, 1.4 GHz;		
2. Em caso de processadores com arquitetura de computação heterogênea (big.LITTLE), só serão contabilizados os cores voltados para performance, na contagem mínima de núcleos e ciclos de clock base (MHz);		
3. Memória cache total de, no mínimo, 12MB;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
4. O processador ofertado deverá ser Intel Core Ultra 7, "de 1ª geração", ou AMD Ryzen 7 PRO, "serie 8000", admitindo-se famílias ou gerações mais novas;	□	
5. O processador deverá ser da última geração disponível utilizada pelo fabricante do equipamento, **com desempenho mínimo de 26.300 (vinte e seis mil e trezentos) pontos**, considerando o uso pleno de todos os núcleos e sem a aplicação de configurações específicas para aumento ou modificação de desempenho, como "overclock", "undervoltage", "overvoltage" ou quaisquer outras que não estejam em conformidade com os padrões definidos pelo fabricante; 1. O desempenho será comprovado por intermédio de resultados de BenchMark, disponíveis em http://www.cpubenchmark.net/cpu_list.php. 2. Será admitida uma margem de tolerância de 2% (dois por cento) do desempenho mínimo exigido.	□	
6. Deve possuir tecnologia de controle dinâmico de frequência do processador para núcleos individuais e ou múltiplos núcleos, podendo atingir até 5.0 GHz, no mínimo;	□	
7. Deve possuir controlador com suporte à memória RAM do tipo DDR5-5600 MT/s, ou superior;	□	
8. Deverá possuir tecnologia de fabricação de 7 nm (sete nanômetros) ou inferior;	□	
9. TDP(Thermal Design Power) mínimo de 20W, e máximo de 115W, declarado pelo fabricante;	□	
10. Deve possuir instruções do padrão AVX 2.0, ou superior;	□	
11. Deve possuir instruções do padrão SSE4.1/4.2, ou superior;	□	
12. Deve possuir instruções que implementem extensões de virtualização de hardware;	□	
13. Deve possuir instruções AES-NI embutidas;	□	
14. O proponente deverá declarar em sua proposta comercial o modelo do processador ofertado.	□	
4. MEMÓRIA RAM		
1. Deverá possuir, no mínimo, 32 (trinta e dois) Gb de memória RAM instalados, com capacidade de expansão mínima de 96 (noventa e seis) Gb;	□	
2. Deverá ser do tipo DDR-5 SODIMM ou superior e possuir, no mínimo, 5600 MT/s de velocidade de comunicação com o barramento principal;	□	
3. Os módulos removíveis devem ser instalados durante o processo de manufatura do computador, e homologados como parte do equipamento, inclusive estando cobertos pela garantia e suporte como descrito no Termo de Referência.	□	
5. UNIDADE DE ARMAZENAMENTO		
1. Deve possuir, no mínimo, 1 (uma) unidade padrão tipo Solid State Drive (SSD) interna instalada do tipo M.2, na capacidade mínima de 1 TB e velocidade mínima de gravação de 1.200MB/s;	□	

DESCRIÇÃO	PARECER	OBSERVAÇÕES
2. Deve utilizar interface tipo M.2 PCIe 4.0, com o protocolo NVMe, ou superior;		
3. Deve ser instalada durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência.		
6. CONECTIVIDADE		
1. Deverá possuir no mínimo 3 (três) portas USB; 1. Do total de portas, no mínimo 1 (uma) devem ser do tipo USB 3.2 tipo A; 2. No mínimo 1 (uma) deve ser do tipo USB 3.2 Tipo C, ou superior;		
2. Possuir, no mínimo, 1 (uma) porta de vídeo adicional, suportando a utilização de 1 (um) monitor auxiliar simultânea e independentemente da tela integrada;		
3. O tipo da porta auxiliar de vídeo supracitada deve ser HDMI 1.4 ou DisplayPort 1.2. Em caso de versões miniaturizadas destas, adaptadores revertendo para elas devem ser fornecidos sem custo adicional.		
7. INTERFACES DE REDE		
1. Deve possuir, no mínimo, 1 (uma) interface de rede RJ45 compatível com os padrões 10, 100 e 1000 Mbps, autosense, full-duplex e plug-and-play, configurável totalmente por software e com função Wake On Lan instalada e em funcionamento;		
2. A controladora ethernet, deverá ser do tipo "onboard", e suportar recurso WOL (Wake On LAN);		
3. Deve possuir, no mínimo, 1 (uma) interface de rede sem fios no padrão Wi-Fi 6 (802.11 B/G/N/AX), com velocidade de até 1.73Gbps, Tecnologia MU-MIMO, banda dupla em 2.4Ghz e 5Ghz, e suporte a Bluetooth 5.3 ou superior;		
4. As controladoras Wi-Fi e Bluetooth, deverão estar em um único cartão M.2, conectado em slot específico na placa mãe, que deve ser instalado durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência;		
5. A interface Wireless ofertada deve possuir, na data da entrega da proposta, homologação junto à ANATEL com certificado disponível publicamente no endereço eletrônico desta agência, conforme a Resolução n.º 242 de 30 de novembro de 2000.		
8. CONTROLADORA DE VÍDEO		
1. Deve possuir controladora 3D/2D integrada, com suporte a DirectX 12, ou superior;		
2. Deve suportar Pixel Shader 3.0, ou superior;		
3. Deve suportar OpenGL 4.5, ou superior;		
4. Deve suportar HDCP ou HDR;		
5. Deve suportar a resolução mínima de 1920 X 1080 @ 60 Hz;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
6. Deve possuir tecnologia de controle dinâmico de frequência, podendo atingir, no mínimo, 1.35GHz;		
7. Deve suportar, no mínimo, o uso de 3 (três) monitores simultânea e independentemente;		
8. Deve possuir controladora 3D/2D dedicada, com no mínimo 4 (quatro) GB de memória GDDR6, com largura de banda para VRAM de 96 bits e suporte a DirectX 12, ou superior;		
9. Deve suportar Pixel Shader 3.0, ou superior;		
10. Deve suportar OpenGL 4.5, ou superior;		
11. Deve suportar HDCP ou HDR;		
12. Deve suportar a resolução mínima de 1920 X 1080 @ 60 Hz;		
13. Tipo de bus PCI Express 8x;		
14. Memória de vídeo dedicada de no mínimo 4 GB.		
9. CONTROLADORA DE SOM E MULTIMÍDIA		
1. O equipamento deve possuir uma controladora de som integrada, do tipo "onboard";		
2. Deve possuir, no mínimo, uma interface de som com 1 (um) conector combinado para fone de ouvido e microfone, de 3,5 mm;		
3. Deve possuir, no mínimo, 2 alto-falantes internos, com 2 Watt RMS de potência cada, compatíveis com a controladora de som;		
4. Deve incorporar microfone(s), com cancelamento de ruído, voltados para captar o som do usuário em frente ao computador.		
10. TECLADO		
1. Deve ser integrado e retroiluminado no idioma padrão, português (Brasil), ABNT-II;		
2. Deve suportar o derramamento de líquidos;		
3. Deve possuir teclas multimídia, com no mínimo, aumentar e diminuir volume, além do mute; 1. Admite-se a utilização de teclas de função (F1...F12), para tais ações.		
11. DISPOSITIVOS APONTADORES		
1. Deve possuir um touchpad integrado, com dois botões, e área útil de 4 (quatro) pol², no mínimo; 1. Admite-se que os botões sejam integrados, como cliques diretos na parte inferior do touchpad;		
2. Deve suportar gestos de rolagem, ou possuir teclas, área ou dispositivo dedicado;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
3. Deve acompanhar um mouse adicional, da mesma cor e do mesmo fabricante do equipamento ofertado; 1. Deve ser óptico, com conexão USB, com 3 (três) botões e sistema de rolagem de página, com formato ergonômico e com design ambidestro, devendo possuir resolução mínima por hardware de 800 dpi.		
12. TELA INTEGRADA		
1. Deve ser de tecnologia IPS (In-Plane Switching) ou VA (Vertical Alignment);		
2. Tamanho de 15,6 polegadas widescreen, no mínimo;		
3. Deve suportar, no mínimo, 16 milhões de cores;		
4. Resolução mínima de 1920x1080@60Hz;		
5. Ângulo de visão mínimo de 85° horizontal e vertical;		
6. Deve possuir brilho mínimo de 300 cd/m².		
13. WEBCAM		
1. O equipamento deve possuir uma webcam integrada, de 2.0 megapixels, com resolução de vídeo FullHD, no mínimo, não sendo aceita solução externa;		
2. Deve possuir mecanismo de bloqueio por tampa, ou desativação mecânica, como solução de privacidade, também integrada ao equipamento.		
14. FORMATO DE MANUFATURA E FONTE DE ALIMENTAÇÃO		
1. O equipamento deve ser produzido no formato laptop.		
2. O peso total do equipamento sem a fonte, não deve exceder os 2.8 Kg (dois quilos e oitocentos gramas);		
3. A dobradiça do equipamento, deve ser construída em metal, e com articulação de 180º;		
4. O material do gabinete deve ser de estrutura livre de BFR e outros materiais tóxicos e/ou antiecológicos;		
5. Deve possuir botão de liga/desliga e luz de indicação de computador ligado (power-on) em local visível e acessível do computador, quando ele estiver aberto;		
6. Deve possuir leitor biométrico integrado, em área acessível, quando o notebook estiver aberto;		
7. Deve oferecer a possibilidade de, se demandado, aplicar logo oficial da CONTRATANTE, com área de impressão mínima de 3,00 x 2,72 cm, através de sistema de gravação direta como aplicação em laser, não sendo admitido o uso de adesivagem, serigrafias ou adaptações semelhantes. A gravação deverá ser feita apenas na parte inferior do laptop, visando medidas de segurança;		
8. O computador deverá possuir fenda de encaixe padrão "Kensington" ou “Noble Wedge” para utilização de cabo de aço do mesmo tipo;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
9. Deve ser fornecido com fonte de carregamento/alimentação do mesmo fabricante e compatível com o equipamento, com potência suficiente para suportar todos os dispositivos internos em suas configurações máximas permitidas, além de possibilitar o pleno carregamento da bateria do equipamento;	□	
10. A fonte de alimentação deve possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);	□	
11. A fonte deve possuir tensão de entrada 110 e 220 Volts de forma automática;	□	
12. A fonte deve fornecer uma alimentação mínima de 130W para o equipamento;	□	
13. Os plugues de conexão à rede elétrica devem seguir o padrão NBR 14136:2002.	□	
15. BATERIA		
1. Deve ser integrada ao corpo do equipamento, (não destacável);	□	
2. Potência mínima de 90wh;	□	
3. Deve possuir no mínimo 4 (quatro) células de carregamento; 1. Deve ser capaz de manter o equipamento funcionando ininterruptamente por no mínimo 9 (nove) horas, conforme o padrão de teste do aplicativo MobileMark 2018.	□	
16. SISTEMA OPERACIONAL E SOFTWARES COMPLEMENTARES		
1. Deve acompanhar o equipamento licença OEM do sistema operacional Microsoft Windows 11 Professional de 64 bits, ou versão mais recente, no idioma Português Brasil;	□	
2. O equipamento deve ser entregue com o Windows 11 Professional 64 bits, ou versão mais recente instalado;	□	
3. Cada equipamento deve incluir uma licença específica de software dedicado para: • Controle: Funções de bloqueio e desbloqueio remoto. • Inventário: Gestão detalhada de hardware e software do equipamento. • Rastreabilidade: Recursos de geolocalização integrados.	□	
4. O software de controle e monitoramento deve possuir a funcionalidade de persistência, garantindo a preservação do cliente do software e de suas funcionalidades, mesmo após a perda total de dados ou formatação do disco rígido, utilizando tecnologia de residência em firmware;	□	
5. A interface de controle e monitoramento dos equipamentos deve ser baseada em nuvem, sem a necessidade de licenças adicionais além daquelas atribuídas a cada equipamento;	□	
6. A licença do software dedicado deve ter cobertura mínima equivalente ao período de garantia do equipamento (60 meses) e deve estar plenamente operacional a partir da aceitação definitiva do equipamento pela **CONTRATANTE**;	□	
7. Os equipamentos poderão ser entregues com imagem de instalação do sistema operacional e softwares customizada e previamente fornecida pela **CONTRATANTE**, conforme especificado no Termo de Referência.	□	
17. COMPATIBILIDADE		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. Deve ser apresentado o certificado de compatibilidade dos equipamentos com o sistema operacional Windows 11 x64 obtido junto à Microsoft. Deverá constar no Microsoft Hardware Compatibility List (HCL) para o sistema operacional exigido e ofertado. 1. A comprovação da compatibilidade será efetuada pela apresentação do documento Hardware Compatibility Test Report emitido especificamente para o modelo no sistema operacional ofertado, ou pela indicação no site da Microsoft;		
2. O equipamento deverá possuir certificado de homologação comprovando a compatibilidade do mesmo com, pelo menos, uma distribuição de Linux. A comprovação da compatibilidade será efetuada pela apresentação de documento emitido especificamente para o modelo ofertado;		
3. O equipamento, na configuração ofertada, deve possuir certificado de conformidade contra incidentes elétricos e de combustão dos materiais (IEC/EN 60950) e de imunidade eletromagnética (IEC/EN 61000), comprovado através de certificados ou do relatório de avaliação de conformidade nos moldes da portaria 170/2012 vigente do INMETRO, ou similar Internacional.		
18. OUTROS REQUISITOS		
1. Todas as partes do computador devem ter coloração neutra em gradações de preto ou prata, mantendo o padrão e cor;		
2. Deverá acompanhar maleta, pasta, mochila ou similar, para transporte com segurança, de tamanho suficiente para acondicionar o equipamento e seus acessórios (fonte de alimentação e cabos), confeccionada em material resistente e impermeável;		
3. Equipamento deverá ser novo, partes e peças, de primeiro uso, que deverão ser acondicionados em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;		
4. Informar marca e modelo dos componentes utilizados na solução e apresentar prospecto com as características técnicas do equipamento e da placa mãe, processador, memórias, interfaces de rede, fonte de alimentação e unidade de armazenamento, incluindo especificação de marca, modelo, e outros elementos que de forma inequívoca identifiquem e constatem as configurações, possíveis expansões e upgrades, comprovando-os através de certificados, manuais técnicos, folders e demais literaturas técnicas editadas pelos fabricantes;		
5. Todos os equipamentos deverão ser entregues idênticos, ou seja, todos os componentes externos e internos deverão ter os mesmos modelo e marca;		
6. O equipamento proposto deverá estar em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;		
7. Não serão aceitos produtos descontinuados por seus fabricantes, não devendo constar em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não poderão ter previsão de descontinuidade de fornecimento, suporte ou vida;		
8. O equipamento em pleno funcionamento deve atender à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que deverá acompanhar a proposta;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
9. Deverá ter compatibilidade eletromagnética e de radiofrequência IEC 61000 comprovado através de certificado ou relatório de avaliação de conformidade emitido por órgão credenciado pelo INMETRO ou internacional equivalente;	□	
10. Deverá ter compatibilidade com o padrão DMI 2.0 (Desktop Management Interface) ou mais recente da DMTF (Desktop Management Task Force), comprovado através de documentação expedida pelo fabricante do equipamento ou comprovação de que o fabricante do equipamento é membro do consórcio DMTF listado em uma das categorias BOARD ou LEADERSHIP;	□	
11. Deverá ter compatibilidade com a norma TPM Specification Version 2.0 especificadas pelo TCG (Trsted Computing Group), devendo o fabricante ser membro de uma das categorias listadas no site http://www.trustedcomputinggroup.org/about_tcg/tcg_members;	□	
12. Deverá ter compatibilidade com EPEAT na nova categoria Bronze, comprovada através de atestados ou certidões que mostrem que o equipamento é aderente ao padrão de eficiência energética EPEAT, emitido por instituto credenciado junto ao INMETRO ou equivalente internacional. 1. Será admitida como comprovação também, a indicação que o equipamento consta no site www.epeat.net na nova categoria Bronze;	□	
13. Não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS (Restriction of Certain Hazardous Substances);	□	
14. Os equipamentos deverão pertencer à linha corporativa, não sendo aceitos equipamentos destinados ao uso da linha doméstica. 1. A comprovação deverá ser apresentada junto com a proposta;	□	
15. Não serão aceitos equipamentos que contenham lacres de violação de garantia por abertura, que inviabilizem a inspeção dos componentes a qualquer momento;	□	
16. **Garantia de 60 (sessenta) meses on-site**, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo. **Para as baterias, será admitido garantia mínima de 36 (trinta e seis) meses**. Nos meses que restarem para completar o prazo total de garantia, a **FORNECEDORA** se obriga a dispor de bateria para venda em caso de eventual necessidade, e a realizar o suporte e assistências técnica sem ônus para a **CONTRATANTE**.	□	

3. Conclusão

O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica **OPINA** pela aceitabilidade do produto ofertado.

É o parecer.

Manaus, 8 de julho de 2025.

FRANCISCO ELVISLÂNIO PEREIRA
Agente de apoio - Manutenção/Informática

WALESKA GRACIEME ANDRADE MARQUES DE OLIVEIRA
Agente Técnico - Analista de Banco de Dados

Documento assinado eletronicamente por **Waleska Gracieme Andrade Marques de Oliveira**, **Agente Técnico - Analista de Banco de Dados**, em 08/07/2025, às 09:16, conforme art. 1º, III, "b", da Lei 11.419/2006.

Documento assinado eletronicamente por **Francisco Elvislânio Pereira**, **Agente de Apoio - Administrativo**, em 08/07/2025, às 09:22, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1665305** e o código CRC **579CD4BA**.

SERRA 08.07.2025

PROCURADORIA GERAL DE JUSTICA DO ESTADO DO AMAZONAS
MANAUS - AM

A/C DEPARTAMENTO DE LICITAÇÃO

REF.: Pregão Eletrônico n°94010-2025

Objeto da licitação: Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e
assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de
garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça,
por um período de 12 meses.

ersolucoes.com.br | contato@ersolucoes.com.br | 16 3234-4433
Avenida Cem, S/N - Quadra 01 - Sala 01 Piso 02 CEP:
29161-384 Serra - ES

Proposta de Preço ITEM 2 - ER SOLUÇOES DE INFORMATICA LTDA. (1667752) SEI 2025.001317 / pg. 1794

E.R. Soluções de Informática Ltda.
CNPJ: 05.778.325/0005-47
Inscrição Estadual: 836.6381-52
Inscrição Municipal: 470931
Telefone/Fax +55 16 3234-4433
E-mail: ersolucoes@ersolucoes.com.br
End.: Av. Cem, S/N - Quadra 01 - Sala 01 - Piso 02 - CEP: 29161-384, Serra - ES

Prezados,

Vimos por meio desta, apresentar nossa proposta comercial e temos o prazer de encaminhar, para análise e apreciação, uma breve apresentação desta empresa, com o intuito de conhecerem nosso prestígio.

Desde 1997 prestando serviços em Tecnologia da Informação, a ER Soluções esteve sempre presente nos principais acontecimentos da Indústria da Informática no Brasil.

Com larga experiência varejista além da já premiada atuação no setor governamental e agora com uma ativa presença no mercado SMB regional, a E.R. Soluções obteve importantes parcerias permitindo a presença constante nos principais usuários de TI. Adquirimos competências fundamentais envolvendo as principais tecnologias e os melhores fabricantes do mercado, destacando-se Dell, Lenovo, Microsoft e VMware, entre outras parceiras.

É com este know-how que oferecemos produtos e serviços com o que há de mais moderno dentro das melhores práticas em TI, com equipes de profissionais treinados e certificados, elaborando projetos, apresentando soluções, atendendo necessidades, e prevendo demandas para os mais diversos negócios em todo o território nacional.

O documento a seguir apresenta a proposta de equipamentos, softwares e serviços para o referido pregão.

Desde já agradecemos a oportunidade de oferecer os nossos produtos e serviços, e nos colocamos à disposição para os esclarecimentos adicionais que se fizerem necessários.

1.Proposta Comercial

	Descrição	Valor Unitário	Quantidade	Total
1	**LENOVO THINKSTATION P3 TW**	R$ 20.300,00	50,00	**R$ 1.015.000,00**

Total Geral **R$ 1.015.000,00**

Serra, 08.07.2025
Atenciosamente,

Julia Barbosa Avelar
julia@ersolucoes.com.br
CPF: 318.101.328-51
RG: 54.193.926-9

2.Especificações Técnicas

ITEM 1 - LENOVO THINKSTATION P3 TW

ThinkStation P3 Tower - PN 30GUCTO1WW (customizado para atender ao edital)
Processador Intel I7-14700-VPro
Memória instalada de (2x16) 32GB DDR5-4400MHZ / ECC
Armazenamento SSD 256GB NVME + HD 1TB 7200rpm
Sistema operacional Windows 11 PRO 64bits Português
Intel Wi-Fi 6 AX211, 802.11ax 2x2 Wi-Fi + Bluetooth 5.1, M.2 Card - VPro
Vídeo integrado Intel UHD Graphics 770 1x HDMI 2.1 + 2x DisplayPort
Leitor SD
Placa de vídeo Nvidia RTX A1000 - 8GB
Fonte de Alimentação de 500W 92%
4x USB 3.2 Tipo A + 1x USB 3.2 Tipo C + 4x USB 3.2 Tipo A
4 slots de memória com possibilidade de expansão até 128GB
Trusted Platform Module TPM 2.0 | Tecnologia Intel vPro
Chipset Intel W680
Slot de Segurança Kensington | Sensor de intrusão
Lenovo Mouse Fingerprint USB 03 botões, além da função de rolagem - acompanha Mousepad ergonômico
Teclado Lenovo Multimídia compatível com o padrão ABNT2
Cabo de Energia padrão NBR 14136
Trava de segurança tipo Kensington | Cabo Y
Logo na Bios | Serviço de Imagem | Logo a laser | Retenção HD
Licença Absolute - 5 anos
+
Monitor Lenovo ThinkVision T27hv-30 IPS - PN 63D6UAR3US
Resolução 2560 x 1440 | Brilho 300 cd/m² | Contraste 1.000:1
Ajuste de altura, rotação e inclinação
Saídas: 1x DisplayPort 1.4 + 1x DisplayPort out + 1x HDMI
Webcam: 2592 x 1944, 5.0-megapixel, IR + RGB
Microfone: integrado | Alto falantes: 2x 5W
Downstream: (4 portas) USB3.2 Tipo-A, Upstream: (1 porta) USB3.2 Tipo-C | 1x RJ-45
Logo a laser
+
Monitor Auxiliar:
Monitor Lenovo ThinkVision T27i-30 IPS - PN 63A4MAR1BR
Resolução 1920x1080 | Brilho 300 cd/m² | Contraste 1.000:1
Ajuste de altura, rotação e inclinação
Saídas: VGA + DisplayPort + HDMI
Downstream: (4 portas) USB3.2, Upstream: (1 porta) USB3.2
Logo a laser
Garantia do Fabricante de 60 meses on-site com tempo de atendimento e solução conforme edital e danos acidentais.
Demais características, conforme edital
https://psref.lenovo.com/Product/ThinkStation/ThinkStation_P3_Tower?MT=30gu
https://psref.lenovo.com/Product/ThinkVision/ThinkVision_T27hv_30
https://psref.lenovo.com/Product/ThinkVision/ThinkVision_T27i_30

3.Condições Comerciais

Validade da Proposta:
O prazo de validade da proposta é de 90 (noventa) dias, a contar da data de sua apresentação.

Entrega
Em até 90 (noventa) dias corridos, contados do primeiro dia útil subsequente ao do recebimento da respectiva Nota
de Empenho. e/ou Autorização de Fornecimento de Materiais e Serviços.

Local de Entrega
Av. Coronel Teixeira, nº 7.995, Nova Esperança II
CEP. 69037-473, Manaus-AM

Condições de Pagamento:
10 (dez dias) úteis para a liquidação da despesa, a contar do recebimento da nota fiscal ou instrumento de cobrança equivalente
pela Administração;

Dados da Conta Bancária:
Banco do Brasil Cód. Agência: 001
Agência: 3235-2
Conta Corrente: 115.747-7

DECLARAMOS, que nos preços contidos na Proposta de Preços, estão incluídos todos os custos diretos e indiretos, sem que caiba, em qualquer caso, direito regressivo sobre a execução de serviços, objeto desta licitação, tais como: impostos, taxas, frete CIF, transportes, inclusive o lucro do fornecedor, materiais, equipamentos, mão-de-obra, encargos sociais, trabalhistas e previdenciários, tributos e contribuições de qualquer natureza ou espécie, não cabendo, portanto, nenhuma reclamação posterior no sentido de alteração de preços.

DECLARAMOS, que aceitamos todas as condições estabelecidas no edital e nos anexos do Pregão Eletrônico n°94010-2025

DECLARAMOS, que a fabricante possui recurso disponibilizado via website do próprio fabricante https://pcsupport.lenovo.com/br/pt/warrantylookup, para realizar a validação e verificação da garantia do equipamento através da inserção do número de série do equipamento e também disponibiliza em seu web site http://support.lenovo.com/us/en/lenovodiagnosticsolutions, software capaz de realizar testes de diagnóstico de hardware.

DECLARAMOS, ainda, que a Lenovo dispões de telefone gratuito 0800-701-4815 (ligações fora da cidade de São Paulo) e 11 3889-8986 (ligações de São Paulo) para abertura de chamados técnicos em Língua Portuguesa e service desk com histórico dos registros, e que os drivers, atualizações e suporte dos produtos Lenovo, estão disponíveis para download no site http://support.lenovo.com/br/pt. Os chamados serão abertos através de código de identificação único para cada máquina. Durante o prazo de garantia, será substituída sem ônus a contratante, a parte ou peça defeituosa, salva quando o defeito for provocado por uso inadequado dos equipamentos. A Lenovo possui um canal específico para auxiliá-lo no descarte desses produtos. Caso você possua um produto Lenovo em situação de descarte, ligue para o nosso SAC ou encaminhe um e-mail para: reciclar@lenovo.com, informando o modelo, número de série e cidade, a fim de envio das instruções para o correto descarte do seu produto Lenovo.

DECLARAMOS, que todos os equipamentos a serem entregues serão novos, idênticos, com componentes externos e internos de mesmo modelo e marca dos equipamentos ofertados na proposta, salvo se o equipamento não se encontrar mais disponível no mercado no ato do pedido. Em caso de descontinuidade do produto oferecido, ou diante da indisponibilidade devidamente comprovada, este será substituído pelo sucedâneo com as mesmas características ou superiores, ou ainda, por um modelo com características idênticas ou superiores ao ofertado, mediante análise de catálogos, durante todo o período de validade da Ata de Registro de Preços ou do Contrato vigente.

Serra 08.07.2025
Atenciosamente,

Julia Barbosa Avelar
julia@ersolucoes.com.br
CPF: 318.101.328-51
RG: 54.193.926-9

PROCURADORIA GERAL DE JUSTICA DO ESTADO DO AMAZONAS
MANAUS - AM

REF.: Pregão Eletrônico n°94010-2025

DECLARAÇÃO DE DADOS PARA ASSINATURA DA ATA

A empresa **E.R. SOLUÇÕES INFORMÁTICA LTDA**, apresenta, a seguir, os dados de seus representantes legais para assinatura do eventual contrato:

Dados Do Licitante

1) Razão Social/ Nome Fantasia: E.R. Soluções Informática Ltda.
2) CNPJ: 05.778.325/0005-47
3) Inscrição Estadual: 836.6381-52
4) Inscrição Municipal: 470931
5) Endereço: Avenida Cem, S/N - Quadra 1 - Sala 01 Piso 02, CEP: 29161-384 – Serra - ES
6) Telefones: Fixo – 16-3234-4433 Fax 16 3234-4433
7) Celular (16) 98812-4308
8) E-mail julia@ersolucoes.com.br / gov@ersolucoes.com.br

Representante: George Eduardo Saliby
Cargo: Diretor Comercial
Endereço Residencial: Rua Severiano Amaro Dos Santos Nº 700 Apto 93 - Jardim Botânico CEP 14021-620 – Ribeirão Preto -SP
Telefones: 16-3234-4433 / 16 99132-4429
CPF: 982.913.358-34
RG.: 7.854.271-6/SSP
Estado Civil: Divorciado
Nacionalidade: Brasileiro

Representante: André Luís Machado Pelicioni
Cargo: Diretor Administrativo
Endereço Residencial: - Av. Giuseppe Cilento n° 1811– Apto 302 - Jardim Botânico CEP. 14.021-650 – Ribeirão Preto / SP
Telefones: 16-3234-4433 / 16 99129-7439
CPF: 248.785.548-78
RG.: 18.658.107 – SSP/SP
Estado Civil: Casado
Nacionalidade: Brasileiro

Serra, 08.07.2025
Atenciosamente,

Julia Barbosa Avelar
julia@ersolucoes.com.br
CPF: 318.101.328-51
RG: 54.193.926-9

PROCURADORIA GERAL DE JUSTICA DO ESTADO DO AMAZONAS
Manaus - AM

REF.: Pregão Eletrônico n°94010-2025

DECLARAÇÃO CONJUNTA

A empresa **E.R. SOLUÇÕES INFORMATICA LTDA**, cadastrada no CNJP sob nº **05.778.325/0005-47** sediada na Avenida Cem, S/N – Quadra – 01 Sala 01 Piso 02, na cidade de Serra estado do Espírito Santo, através de seu representante legal **Srta. Julia Barbosa Avelar**, brasileira, solteira, vendedora, portador do RG n°54.193.926-9 SSP/SP , cadastrado no CPF sob nº 318.101.328-51, residente e domiciliado na cidade de Ribeirão Preto na Rua João Vendrusculo, 3100 - Ribeirão Verde CEP 14.079-328, declara para todos os fins de direito, especificamente para participação da licitação na modalidade epigrafada e conforme Lei Federal nº 8.666/93 e Constituição Federal, que:

a) Que até a presente datada, não há fato superveniente impeditivo à sua habilitação para participação em processos/procedimentos licitatórios junto a órgãos públicos, comprometendo-se a declará-lo(s) caso venha(m) a ocorrer.

b) Que está em situação regular junto ao Ministério do Trabalho. Para fins do disposto no inciso V do art. 27 da Lei nº 8.666, de 21 de junho de 1993, acrescido pela Lei nº 9.854, de 27 de outubro de 1999, não possuímos em nosso quadro de pessoal menores de 18 anos em trabalho noturno, perigoso ou insalubre e menores de 16 anos, em qualquer outro tipo de trabalho, salvo na condição de aprendiz, a partir de 14 anos, nos moldes do inciso XXXIII do artigo 7º da CF.

c) Que não foi declarada inidônea ou apenada por suspensão pelo Poder Público de qualquer esfera (Art. 87 IV);

d) Que cumpre todas as normas relativas à saúde, higiene e segurança do trabalho de seus empregados.

e) Que não possui funcionários, dirigentes ou acionistas detentores do controle da empresa participante da licitação, que possuam vínculos direto ou indireto com Administração do referido processo, nos termos do art. 9º da Lei Federal 8.666/93;

f) Que não está impedida de contratar com a Administração Pública do referido processo licitatório,

direta ou indiretamente e que se compromete a comunicar ocorrência de fatos supervenientes.

g) Que, conforme disposto no art. 93 da Lei nº 8.213, de 24 de julho de 1991, estou ciente do cumprimento da reserva de cargos prevista em lei para pessoa com deficiência ou para reabilitado da Previdência Social e que, se aplicado ao número de funcionários da minha empresa, atendo às regras de acessibilidade previstas na legislação.

h) Sob as penas da Lei, declaro que cumpro a Cota de Aprendizagem - DCCA, nos termos estabelecidos no art. 429 da CLT da Consolidação das Leis do Trabalho – CLT.

i) Que não possuo, em minha cadeia produtiva, empregados executando trabalho degradante ou forçado, observando o disposto nos incisos III e IV do art.1º e no inciso III do art.5º da Constituição Federal.

j) Que emite Nota Fiscal Eletrônica – NF-e.

k) Que examinou cuidadosamente o processo contendo o Edital Completo, nela não achando nenhuma falta ou irregularidade que comprometesse a legalidade do certame licitatório, aceitando e submetendo-se, portanto, aos itens editalícios, às cláusulas contratuais e às condições físicas ora estipuladas para a execução do objeto licitado;

l) Que estou ciente e concordo com as condições contidas no edital e seus anexos, bem como de que cumpro plenamente os requisitos de habilitação definidos no edital.

m) Que se responsabiliza integralmente pela prestação dos serviços e qualidade dos materiais ora contratados;

Serra, 08.07.2025
Atenciosamente,

Julia Barbosa Avelar
julia@ersolucoes.com.br
CPF: 318.101.328-51
RG: 54.193.926-9

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POSITIVO
TECNOLOGIA

AO
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA GERAL DE JUSTIÇA

Ref.: PREGÃO ELETRÔNICO Nº 94010/2025-CPL/MP/PGJ SRP

PROPOSTA DE PREÇOS

Proposta que faz a empresa Positivo Tecnologia S/A (Filial), inscrita no CNPJ (MF) n.º 81.243.735/0009-03, localizada Rua Ásia, s/n – Lote 05 – Quadra N – Bairro Iguape – Ilhéus – Bahia – CEP 45.658-464, fone (41) 3239-7928 / (41) 3312-3677, e-mail: editais.info@positivo.com.br / contratosgov@positivo.com.br, para o fornecimento dos bens abaixo relacionados, de acordo com todas as especificações e condições estabelecidas no Pregão Eletrônico n.º94.010/2025-CPL/MP/PGJ-SRP, promovido pelo MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS / PROCURADORIA-GERAL DE JUSTIÇA:

Item	Descrição	Marca / Modelo	Quantidade	Valor Unitário R$	Subtotal R$
3	COMPUTADOR TIPO 3 - "NOTEBOOK DE 14"". Especificações técnicas em anexo.	**MARCA**: Positivo **MODELO**: Positivo Master N8450 **FABRICANTE**: Positivo Tecnologia S.A.	300	R$ 5.700,00 (cinco mil e setecentos reais)	R$ 1.710.000,00 (Um milhão, setecentos e dez mil reais)
VALOR TOTAL DA PROPOSTA: R$ 1.710.000,00 (Um milhão, setecentos e dez mil reais)					

A Positivo Tecnologia S/A (Filial) declara que concorda com todas as especificações do Edital.

a. Prazo de validade da proposta: **90 (noventa) dias,** a contar da data de sua apresentação.
b. Prazo de entrega: **90 (noventa) dias corridos,** contados do primeiro dia útil subsequente ao do recebimento da respectiva Nota de Empenho.
c. Modo de Transporte dos Produtos:
( ) rodoviário/terrestre
(X) aéreo: (X) normal ( ) expresso
( ) outros. Especificar: _____
d. Prazo de garantia: 60 (sessenta) meses, contados a partir da emissão do TERMO DERECEBIMENTO DEFINITIVO do objeto.
e. Nome, meios de contato e endereço completo da assistência técnica ou representante em Manaus-AM:

- Dados da Assistência Técnica autorizada da Positivo:

AM	**Razão Social**	POSITIVO TECNOLOGIA S/A (OP.COM TÉCNICO PROPRIO -POSITIVO TECNOLOGIA)
	Endereço	Endereço: R JUAN DE QUINTANA,42 -ADRIANOPOLIS- MANAUS 69057-550 (end. Base de peças e logística - empresa terceira)
	CNPJ	81.243.735/0001-48
	Telefone/e-mail	41 99290-7230 jnunes@positivo.com.br
	Responsável Técnico	Jorge Henrique Fernandes Nunes

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f. Site e/ou e-mail do fabricante, se houver: www.positivotecnologia.com.br / editais.info@positivo.com.br
g. Dados Bancários: Banco: Banco do Brasil Agência:3306-5/Corporate Paraná Conta Corrente: 211.210-8
h. Contato para fins de faturamento: (indicar o nome, cargo, endereço, telefone, e-mail de contato do responsável pelo recebimento das futuras notas de empenho);
i. Dados dos 3 (três) principais integrantes do quadro acionário da licitante, assim compreendidos aqueles que detenham maior parcela das cotas societárias ou o poder de gestão da sociedade: Conforme Declaração em anexo.

Caso seja vencedora indicamos para assinar o contrato o seguinte responsável:
NOME: Alberto Manoel Custodio
TITULARIDADE: Representante Comercial / Representante Legal
CPF: 510.378.076-34 RG: 1.846.112/SSP/MG
ENDEREÇO: Av. Dom Pedro II, nº 1.111 - Centro, na Cidade de Porto Velho/RO
DADOS BANCÁRIOS:
Banco: Banco do Brasil **Agência:** 3306-5/Corporate Paraná **Conta Corrente:** 99.878-8

DECLARAÇÕES:

Declaro para os devidos fins junto à Comissão Permanente de Licitação que:
a) cumpro plenamente os requisitos de habilitação e estou ciente de que respondo pela veracidade das informações prestadas, na forma da lei;
b) em atenção ao item 5.6. do Edital e ao Art. 14, e incisos, da Lei n.º 14.133/2021, não estou impedido de participar direta ou indiretamente desta licitação, e ainda, que não possuo acionistas, diretores ou gerentes, que sejam cônjuge, companheiro ou parente em linha reta, colateral ou por afinidade, até o terceiro grau, inclusive, de membros ou de servidores ocupantes de cargo de direção, chefia ou assessoramento no âmbito do Ministério Público do Estado do Amazonas e de sua CPL;
c) recebi o edital e todos os documentos que o integram, dispondo de todos os elementos e informações necessários à elaboração da proposta de preços com total e completo conhecimento do objeto da licitação;
d) os documentos e declarações apresentados são fiéis e verdadeiros;
e) caso seja vencedora do certame e não cadastrada no SISTEMA DEADMINISTRAÇÃO FINANCEIRA E CONTABILIDADE da SECRETARIA DA FAZENDA DOESTADO DO AMAZONAS – SEFAZ-AM, encaminharei à CONTRATANTE os documentos necessários para efetuar o referido cadastramento no prazo de 05 (cinco) dias úteis, a contar da adjudicação, sob pena de perder o direito de preferência à contratação em favor dos demais licitantes subsequentes, sem prejuízo da possibilidade de responder a procedimento administrativo de responsabilização (PAR) por eventual retardamento da licitação;
f) o preço inclui, além do lucro, todos os custos e despesas, com tributos incidentes e encargos devidos, materiais, serviços, transporte, a integralidade dos custos para atendimento dos direitos trabalhistas assegurados na Constituição Federal, nas leis trabalhistas, nas normas infralegais, nas convenções coletivas de trabalho e nos termos de ajustamento de conduta vigentes na data de entrega das propostas, bem como quaisquer outras despesas diretas e indiretas incidentes na prestação de serviços;
g) a proposta apresentada para participar do presente Pregão foi elaborada de maneira independente por esta licitante e o seu conteúdo não foi, no todo ou em parte, direta ou indiretamente, informado, discutido ou recebido de qualquer outro participante potencial ou de fato, por qualquer meio ou por qualquer pessoa.

Caso seja vencedora indicamos para assinar o contrato o seguinte responsável:
NOME: Alberto Manoel Custodio
TITULARIDADE: Representante Comercial / Representante Legal
CPF: 510.378.076-34 RG: 1.846.112/SSP/MG
ENDEREÇO: Av. Dom Pedro II, nº 1.111 - Centro, na Cidade de Porto Velho/RO

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POSITIVO
TECNOLOGIA

DADOS BANCÁRIOS: Banco: Banco do Brasil **Agência:**3306-5/Corporate Paraná **Conta Corrente:** 211.210-8

Nos preços unitários e totais apresentados nesta proposta estão inclusos todos os impostos vigentes até esta data.

Curitiba, 08 de julho de 2025.

Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

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POSITIVO
TECNOLOGIA

ESPECIFICAÇÕES TÉCNICAS

Item : 3
Marca : Positivo
Modelo : Positivo Master N8450
Fabricante : Positivo Tecnologia S.A.
Quantidade : 300 (Trezentas) unidades.

Os equipamentos serão fornecidos nas especificações/configurações abaixo:

1. PLACA PRINCIPAL (PLACA MÃE)
1. A placa mãe é construída pelo próprio fabricante do microcomputador sendo produzida sob a especificação do mesmo, não sendo placas de livre comercialização no mercado, nem em regime de OEM;
2. Possui 2 (dois) slots para memória RAM, “do tipo DDR-5 SODIMM”, permitindo a instalação de até 40 (quarenta) Gigabytes. Possui 2 slots com 1 módulo de memória cada, como configuração superior, em substituição aos módulos soldados na placa principal;
3. Suporta tecnologia Dual Channel de utilização de memória RAM;
4. Possui 1 (um) Socket M.2 para SSD SATA ou NVMe;
5. Possui 1 (um) Socket M.2 Para Cartões Wi-Fi/Bluetooth;
6. Possui recursos DASH 1.1 (Desktop and mobile Architecture for System Hardware) e vPro;
7. É compatível com Energy Star 7.0/7.1;
8. Possui capacidade de desligamento do vídeo e do disco rígido após tempo determinado pelo usuário, religamento por acionamento de teclado ou mouse, bem como função de economia de energia para monitor, placa mãe e unidades de armazenamento internas;
9. Possui chip TPM (Trusted Platform Module), versão 2.0, soldado à placa principal, e destinado ao armazenamento de senhas, certificados digitais e chaves criptográficas em conformidade com as especificações do Trusted Computing Group;
10. Possui suporte a virtualização por hardware;
11. Possui suporte a implementação de extensões de virtualização de I/O por hardware;
13. Possui suporte a aceleração de segurança AES no hardware;
14. Possui suporte à tecnologia de acesso remoto out-of-band embutida no hardware;
15. Possui controle da velocidade de rotação do cooler do processador de forma automática, de acordo com a variação de temperatura da CPU;
16. Suporta boot por pendrive ou disco conectado a uma porta USB 3.2;
17. Suporta a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/https boot.

2. BIOS
1. O BIOS é desenvolvido pelo mesmo fabricante do equipamento;
2. O fabricante do equipamento, é totalmente responsável pelo BIOS fornecido juntamente com a placa mãe e pela atualização do mesmo, promovendo as alterações que se façam necessárias e corrigindo problemas ou danos causados ao equipamento em razão desse BIOS ou de procedimentos de atualização deste, (que poderão ser acompanhados pela empresa caso haja necessidade), durante o período de garantia do equipamento;
3. BIOS em português ou inglês, desenvolvido em conformidade com a especificação UEFI 2.9 (http://www.uefi.org) e capturáveis pela aplicação de inventário SCCM (System Center Configuration Manager);
4. O fabricante comprova a compatibilidade com o padrão UEFI através do site http:// www.uefi.org/members, na categoria membros;
5. É do tipo flash EPROM, atualizável por software, compatível com o padrão plug-and-play;
6. É lançado a partir de 2016 e entregue na versão mais atual disponibilizada pelo fabricante;
7. Tem suporte a ACPI;
8. É desenvolvido de acordo com o padrão de segurança NIST 800-147, para garantir a integridade do BIOS;

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9. Possui recursos de controle de permissão através de senhas, sendo uma para inicializar o computador e outra para acesso e alterações das configurações do BIOS;
10. Possui software embarcado no BIOS com funções de diagnóstico de problemas, e gerenciamento com as seguintes características:
    1. Permite o teste do equipamento, com independência do sistema operacional instalado, o software de diagnóstico é capaz de ser executado (inicializado) a partir da UEFI (Unified /Extensible Firmware Interface) ou do Firmware do equipamento através do acionamento de tecla função (F11);
    2. O software de diagnóstico é capaz de informar, através de tela gráfica: O fabricante e modelo do equipamento, processador, memória RAM, firmware, e capacidade do disco rígido;
11. Possui ferramenta que possibilita realizar a formatação definitiva dos dispositivos de armazenamento conectados ao equipamento, desenvolvida em acordo com o padrão de segurança NIST 800-88r1. Esta ferramenta é nativa do BIOS, é oficialmente homologada pelo fabricante do equipamento;
12. Possui opção para exportar/importar configurações;
13. Oferece a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela CONTRATANTE;
14. Possui campo não editável com o número de série do equipamento gravado em memória não volátil e campo editável que permite inserir identificação customizada (identidade patrimonial com pelo menos 10 caracteres). Serão aceitos BIOS com reprogramação via software desde que estes estejam devidamente licenciados para o equipamento e disponibilizados para download no web site de suporte do fabricante;
15. Permite o gerenciamento remoto do microcomputador mesmo desligado, desde que energizado pela rede elétrica e conectado localmente à rede de dados, permitindo ligar e desligar o microcomputador remotamente, com controle de acesso, e com possibilidade de definir horários programados;
    1. Permite acesso remoto através da rede ao POST (procedimento de inicialização) e BIOS para leitura e gravação, mesmo com o equipamento desligado;
    2. Permite acesso remoto ao sistema operacional e processo de inicialização do microcomputador através de interface gráfica, com controle remoto do mouse e teclado (KVM remoto), independente do suporte de aplicações locais ou estado do sistema operacional;
    3. Possui a capacidade de inventário remoto de Hardware mesmo com o equipamento desligado.

3. PROCESSADOR
1. Possui, 2 (dois) núcleos, e 14 (quatorze) threads de processamento com frequência de operação interna básica de, 1.6 GHz;
2. Em caso de processadores com arquitetura de computação heterogênea (big.LITTLE), só serão contabilizados os cores voltados para performance, na contagem mínima de núcleos e ciclos de clock base (MHz);
3. Memória cache total de 12MB;
4. O processador ofertado será o Intel Core Ultra 5, "de 1ª geração";
5. O processador é da última geração disponível utilizada pelo fabricante do equipamento, com desempenho de 17.467 (dezessete mil quatrocentos e sessenta e sete) pontos, considerando o uso pleno de todos os núcleos e sem a aplicação de configurações específicas para aumento ou modificação de desempenho, como "overclock", "undervoltage", "overvoltage" ou quaisquer outras que não estejam em conformidade com os padrões definidos pelo fabricante;
    1. O desempenho é comprovado por intermédio de resultados de BenchMark, disponíveis em: http://www.cpubenchmark.net/cpu_list.php.
    2. Será admitida uma margem de tolerância de 2% (dois por cento) do desempenho mínimo exigido.
6. Possui tecnologia de controle dinâmico de frequência do processador para núcleos individuais e ou múltiplos núcleos, podendo atingir até 4.4 GHz;
7. Possui controlador com suporte à memória RAM do tipo DDR5-5600 MT/s;
8. Possui tecnologia de fabricação de 7nm (sete nanômetros);

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9. TDP (Thermal Design Power) mínimo de 12W, e máximo de 57W, declarado pelo fabricante;
10. Possui instruções do padrão AVX 2.0;
11. Possui instruções do padrão SSE4.1/4.2;
12. Possui instruções que implementem extensões de virtualização de hardware;
13. Possui instruções AES-NI embutidas;
14. O proponente declara em sua proposta comercial o modelo do processador ofertado: Intel Core Ultra 5 135U.

4. MEMÓRIA RAM
1. Possui 16 (dezesseis) GB de memória RAM instalados, com capacidade de expansão de 64 (sessenta e quatro) GB;
2. É do tipo DDR-5 SODIMM e possui 5600 MT/s de velocidade de comunicação com o barramento principal;
3. A implementação do total de memória RAM utiliza 2 (dois) módulos de 8 (oito) GB, utilizando tecnologia dual channel;
    1. Ambos os módulos são do tipo SODIMM, e removíveis como configuração superior a soldada;
4. Os módulos removíveis serão instalados durante o processo de manufatura do computador, e homologados como parte do equipamento, inclusive estando cobertos pela garantia e suporte como descrito no Termo de Referência.

5. UNIDADE DE ARMAZENAMENTO
1. Possui 1 (uma) unidade padrão tipo Solid State Drive (SSD) interna instalada do tipo M.2, na capacidade de 256 GB e velocidade mínima de gravação de 1.200MB/s;
2. Utiliza interface tipo M.2 PCIe 4.0, com o protocolo NVMe;
3. É instalada durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência.

6. CONECTIVIDADE
1. Possui 4 (quatro) portas USB;
    1. Do total de portas, 2 (duas) são do tipo USB 3.2 tipo A;
    2. 2 (duas) são do tipo USB 3.2 Tipo C;
2. Possui 1 (uma) porta de vídeo adicional, suportando a utilização de 1 (um) monitor auxiliar simultânea e independentemente da tela integrada;
3. O tipo da porta auxiliar de vídeo supracitada é HDMI 2.1.

7. INTERFACES DE REDE
1. Possui 1 (uma) interface de rede RJ45 compatível com os padrões 10, 100 e 1000 Mbps, autosense, full-duplex e plug-and-play, configurável totalmente por software e com função Wake On Lan instalada e em funcionamento;
2. A controladora ethernet, é do tipo "onboard", e suporta recurso WOL (Wake On LAN);
3. Possui 1 (uma) interface de rede sem fios no padrão Wi-Fi 6E (802.11 B/G/N/AX), com velocidade de até 2.4Gbps, Tecnologia MU-MIMO, banda dupla em 2.4Ghz e 5Ghz, e suporte a Bluetooth 5.3;
4. As controladoras Wi-Fi e Bluetooth, estarão em um único cartão M.2, conectado em slot específico na placa mãe, que é instalado durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência;
5. A interface Wireless ofertada possui, na data da entrega da proposta, homologação junto à ANATEL com certificado disponível publicamente no endereço eletrônico desta agência, conforme a Resolução n.º 242 de 30 de novembro de 2000.

8. CONTROLADORA DE VÍDEO
1. Possui controlador 3D/2D com suporte a DirectX 12.2;
2. Suporta Pixel Shader 3.0;
3. Suporta OpenGL 4.6;

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4. Suporta HDCP ou HDR;
5. Suporta a resolução de 1920 X 1080 @ 60 Hz;
6. Possui tecnologia de controle dinâmico de frequência, podendo atingir 1.9GHz;
7. Suporta o uso de 3 (três) monitores simultânea e independentemente.

9. CONTROLADORA DE SOM E MULTIMÍDIA
1. O equipamento possui uma controladora de som integrada, do tipo "onboard";
2. Possui uma interface de som com 1 (um) conector combinado para fone de ouvido e microfone, de 3,5 mm;
3. Possui 2 alto-falantes internos, com 2 Watt RMS de potência cada, compatíveis com a controladora de som;
4. Incorpora microfones, com cancelamento de ruído, voltados para captar o som do usuário em frente ao computador.

10. TECLADO
1. É integrado e retroiluminado no idioma padrão, português (Brasil), ABNT-II;
2. Possui teclas multimídia, com aumentar e diminuir volume, além do mute;
    1. Utiliza-se de teclas de função (F1...F12), para tais ações.

11. DISPOSITIVOS APONTADORES
1. Possui um touchpad integrado, com dois botões, e área útil superior a 4 (quatro) pol²;
    1. Admite-se que os botões sejam integrados, como cliques diretos na parte inferior do touchpad;
2. Suporta gestos de rolagem;
3. Acompanha um mouse adicional, da mesma cor e do mesmo fabricante do equipamento ofertado;
    1. É óptico, com conexão USB, com 3 (três) botões e sistema de rolagem de página, com formato ergonômico e com design ambidestro, possui resolução por hardware de 1.000 dpi.

12. TELA INTEGRADA
1. É de tecnologia IPS (In-Plane Switching);
2. Tamanho de 14 polegadas widescreen;
3. Suporta 16 milhões de cores;
4. Resolução de 1920x1200@60Hz;
5. Ângulo de visão de 85° horizontal e vertical;
6. Possui brilho de 300 cd/m².

13. WEBCAM
1. O equipamento possui uma webcam integrada, de 2 megapixels, com resolução de vídeo FHD, não sendo solução externa;
2. Possui mecanismo de bloqueio por tampa, como solução de privacidade, também integrada ao equipamento.

14. FORMATO DE MANUFATURA E FONTE DE ALIMENTAÇÃO
1. O equipamento é produzido no formato laptop.
2. O peso total do equipamento sem a fonte, não excede os 1.6 Kg (um quilo e seiscentos gramas);
3. A dobradiça do equipamento, é construída em metal, e com articulação de 180º;
4. O material do gabinete é de estrutura livre de BFR e outros materiais tóxicos e/ou antiecológicos;
5. Possui botão de liga/desliga e luz de indicação de computador ligado (power-on) em local visível e acessível do computador, quando ele estiver aberto;
6. Possui leitor biométrico integrado, em área acessível, quando o notebook estiver aberto;
7. Oferece a possibilidade de, se demandado, aplicar logo oficial da CONTRATANTE, com área de impressão mínima de 3,00 x 2,72 cm, através de sistema de gravação direta como aplicação em laser, não sendo admitido o uso de adesivagem, serigrafias ou adaptações semelhantes. A gravação deverá ser feita apenas na parte inferior do laptop, visando medidas de segurança;

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8. O computador possui fenda de encaixe padrão "Kensington" para utilização de cabo de aço do mesmo tipo;
9. É fornecido com fonte de carregamento/alimentação do mesmo fabricante e compatível com o equipamento, com potência suficiente para suportar todos os dispositivos internos em suas configurações máximas permitidas, além de possibilitar o pleno carregamento da bateria do equipamento;
10. A fonte de alimentação possui eficiência superior a 85%, com 50% da carga de trabalho e que implementa PFC (Power Factor Correction);
11. A fonte possui tensão de entrada 110 e 220 Volts de forma automática;
12. A fonte fornece uma alimentação de 90W para o equipamento;
13. Os plugues de conexão à rede elétrica seguem o padrão NBR 14136:2002.

15. BATERIA
1. É integrada ao corpo do equipamento, (não destacável);
2. Potência de 57Wh;
3. Possui 3 (três) células de carregamento;
    1. É capaz de manter o equipamento funcionando ininterruptamente por no mínimo 11 (onze) horas, conforme o padrão de teste do aplicativo Mobile Mark 2018.

16. SISTEMA OPERACIONAL E SOFTWARES COMPLEMENTARES
1. Acompanha o equipamento licença OEM do sistema operacional Microsoft Windows 11 Professional de 64 bits, no idioma Português Brasil;
2. O equipamento será entregue com o Windows 11 Professional 64 bits, instalado;
3. Cada equipamento inclui uma licença específica de software dedicado para:
- Controle: Funções de bloqueio e desbloqueio remoto.
- Inventário: Gestão detalhada de hardware e software do equipamento.
- Rastreabilidade: Recursos de geolocalização integrados.
4. O software de controle e monitoramento possui a funcionalidade de persistência, garantindo a preservação do cliente do software e de suas funcionalidades, mesmo após a perda total de dados ou formatação do disco rígido, utilizando tecnologia de residência em firmware;
5. A interface de controle e monitoramento dos equipamentos é baseada em nuvem, sem a necessidade de licenças adicionais além daquelas atribuídas a cada equipamento;
6. A licença do software dedicado tem cobertura equivalente ao período de garantia do equipamento, de 60 (sessenta) meses, e estará plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;
7. Os equipamentos poderão ser entregues com imagem de instalação do sistema operacional e softwares customizada e previamente fornecida pela CONTRATANTE, conforme especificado no Termo de Referência.

17. COMPATIBILIDADE
1. É apresentado o certificado de compatibilidade dos equipamentos com o sistema operacional Windows 11 x64 obtido junto à Microsoft. Consta no Microsoft Hardware Compatibility List (HCL) para o sistema operacional exigido e ofertado.
    1. A comprovação da compatibilidade é efetuada pela apresentação do documento Hardware Compatibility Test Report emitido especificamente para o modelo no sistema operacional ofertado, sendo indicação no site da Microsoft;
2. O equipamento possui certificado de homologação comprovando a compatibilidade do mesmo com, pelo menos, uma distribuição de Linux. A comprovação da compatibilidade é efetuada pela apresentação de documento emitido especificamente para o modelo ofertado;
3. O equipamento, na configuração ofertada, possui certificado de conformidade contra incidentes elétricos e de combustão dos materiais (IEC62368-1) e de imunidade eletromagnética (IEC 61000), comprovado através de certificado nos moldes da portaria 304/2023 vigente do INMETRO.

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18. OUTROS REQUISITOS

1. Todas as partes do computador têm coloração neutra em gradações de preto, mantendo o padrão e cor;
2. Acompanha maleta, para transporte com segurança, de tamanho suficiente para acondicionar o equipamento e seus acessórios (fonte de alimentação e cabos), confeccionada em material resistente e impermeável;
3. Equipamento será novo, partes e peças, de primeiro uso, que serão acondicionados em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;
4. Informa marca e modelo dos componentes utilizados na solução e apresenta prospecto com as características técnicas do equipamento e da placa mãe, processador, memórias, interfaces de rede, fonte de alimentação e unidade de armazenamento, incluindo especificação de marca, modelo, e outros elementos que de forma inequívoca identificam e constatam as configurações, possíveis expansões e upgrades, comprovando-os através de certificados, manuais técnicos, folders e demais literaturas técnicas editadas pelos fabricantes;
5. Todos os equipamentos serão entregues idênticos, ou seja, todos os componentes externos e internos terão os mesmos modelo e marca;
6. O equipamento proposto estará em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;
7. Não sendo produtos descontinuados por seus fabricantes, não consta em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não tem previsão de descontinuidade de fornecimento, suporte ou vida;
8. O equipamento em pleno funcionamento atende à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que acompanha a proposta;
9. Tem compatibilidade eletromagnética e de radiofrequência IEC 61000 comprovado através de certificado emitido por órgão credenciado pelo INMETRO;
10. Tem compatibilidade com o padrão DMI 2.0 (Desktop Management Interface) da DMTF (Desktop Management Task Force), o fabricante do equipamento é membro do consórcio DMTF listado na categoria BOARD;
11. Tem compatibilidade com a norma TPM Specification Version 2.0 especificadas pelo TCG (Trusted Computing Group), o fabricante é membro de uma das categorias listadas no site http://www.trustedcomputinggroup.org/about_tcg/tcg_members;
12. Tem compatibilidade com EPEAT na nova categoria Bronze, comprovada através de indicação que o equipamento consta no site www.epeat.net na nova categoria Bronze, que mostrem que o equipamento é aderente ao padrão de eficiência energética EPEAT.
13. Não contêm substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs),éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS (Restriction of Certain Hazardous Substances);
14. Os equipamentos pertencem à linha corporativa, não sendo equipamentos destinados ao uso da linha doméstica.
    1. A comprovação é apresentada junto com a proposta;
15. Não sendo equipamentos que contenham lacres de violação de garantia por abertura, que inviabilizem a inspeção dos componentes a qualquer momento;
16. Garantia de 60 (sessenta) meses on-site, prestado pelo fabricante. Para as baterias, a garantia é de 36 (trinta e seis) meses. Nos meses que restarem para completar o prazo total de garantia, a FORNECEDORA disporá de bateria para venda em caso de eventual necessidade, e a realizar o suporte e assistências técnicas sem ônus para a CONTRATANTE.

Componentes	**Marca**	**Modelo**
Processador	INTEL	INTEL CORE ULTRA 5 135U
Sistema Operacional	MICROSOFT	Windows 11 Pro (64 bits)
Tela	POSITIVO	LCD 14”, 16:10, anti-reflexiva, Resolução Full HD+ (WUXGA) 1920 x 1200, LED, IPS, brilho 300 nits, contraste 800:1.

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POSITIVO
TECNOLOGIA

Placa-mãe	POSITIVO	POS-SIPWOAA
Memórias	ZILIA	ZMS5WMC3C1J0B46SPG
Unidade de armazenamento (SSD)	SSSTC	CL4-8D256
Câmera	POSITIVO	FHD 1080p
Interface de rede LAN	INTEL	Intel I219-LM 10/100/1000 Mbps, padrão Gigabit Ethernet (autosense)
Interface de rede Wireless	INTEL	Intel Wi-Fi 6E AX211 (802.11ax) 2x2 + Bluetooth 5.31
Teclado	POSITIVO	Com retroiluminação, Padrão ABNT2
Fonte de alimentação	POSITIVO	PI-ADAP090-A(02), homologada pelo fabricante do equipamento para uso no equipamento ofertado.
Bateria	POSITIVO	57 Wh (3 células, 4936mAh, 11.55V)

Curitiba, 08 de julho de 2025.

Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

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POSITIVO
TECNOLOGIA

AO
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA GERAL DE JUSTIÇA

Ref.: PREGÃO ELETRÔNICO Nº 94010/2025-CPL/MP/PGJ SRP

DECLARAÇÃO DE COMPOSIÇÃO ACIONÁRIA

POSITIVO TECNOLOGIA S.A. ("POSITIVO"), pessoa jurídica de direito privado, inscrita no CNPJ sob o nº 81.243.735/0009-03, estabelecida na Rua Ásia, s/n, Lote 05, Quadra N, Bairro Iguape, na Cidade de Ilhéus, Estado da Bahia, CEP 45.658-464, neste ato representada na forma de seu Estatuto Social/Procuração, por meio da sua representante legal abaixo assinada, em atendimento aos subitens 5.3 e 5.4 do Anexo II e item 3.7 do Edital, **DECLARA**, para os devidos fins de direito e há quem possa interessar:

I. Que por se tratar de sociedade anônima, a composição acionária da POSITIVO não é descrita em seu Estatuto Social, razão pela qual é emitida a presente declaração.

II. Destaca-se, que a POSITIVO é uma sociedade anônima de capital aberto com ações negociadas na B3 – Brasil, Bolsa, Balcão, e a totalidade do seu capital é representada por 141.800.000 ações ordinárias, distribuídas entre milhares de acionistas[1], com negociações na bolsa de valores e, consequentemente, com variação diária da titularidade de suas ações, o que impossibilita a apresentação de documento societário contendo a lista da totalidade de seus acionistas.

III. Neste sentido, visando dar integral atendimento à exigência de abertura da composição acionária, com base no que determina as normas regulamentadoras da CVM (Resolução CVM 80/22, art. 25, §3º, V[2]), abaixo é apresentada a abertura do quadro acionário da POSITIVO, contendo os acionistas detentores de mais de 5% do capital social da Companhia.

IV. Importante esclarecer que as informações abaixo reportadas tratam-se de dados públicos, que periodicamente são divulgadas pela POSITIVO diretamente no sistema da CVM - Comissão de Valores Mobiliários, também disponíveis para consulta por meio do link https://sistemas.cvm.gov.br/[3] ou, ainda, em seu website de Relação com os Investidores, por meio do link https://ri.positivotecnologia.com.br/informacoes-ao-mercado/formulario-de-referencia/.

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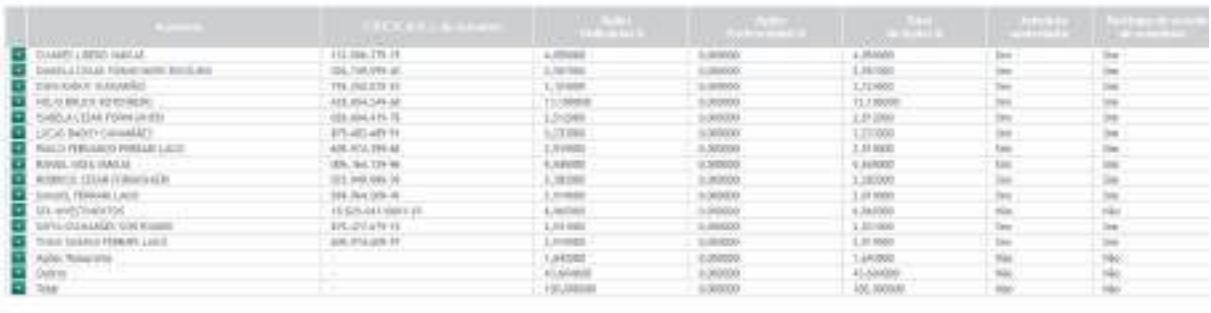
[1] Visando dar maior clareza sobre a dimensão da composição acionária da Positivo, na data de 29/12/2023 a Positivo possuía mais de 47.000 acionistas e em data de 29/05/2024 possuía mais de 43.000 acionistas.

[2] Art. 25. O formulário de referência é o documento eletrônico cujo conteúdo reflete o Anexo C. (...)
§ 3º O emissor registrado na categoria A deve atualizar os campos correspondentes do formulário de referência, em até 7 (sete) dias úteis contados da ocorrência de qualquer dos seguintes fatos: (...)
V – alteração dos acionistas controladores, diretos ou indiretos, ou variações em suas posições acionárias que os levem a ultrapassar, para cima ou para baixo, os patamares de 5% (cinco por cento), 10% (dez por cento), 15% (quinze por cento), e assim sucessivamente, de uma mesma espécie ou classe de ações do emissor;
VI – quando qualquer pessoa natural ou jurídica, ou grupo de pessoas representando um mesmo interesse, direta ou indiretamente, ultrapassar, para cima ou para baixo, os patamares de 5% (cinco por cento), 10% (dez por cento), 15% (quinze por cento), e assim sucessivamente, de uma mesma espécie ou classe de ações do emissor, desde que o emissor tenha ciência de tal alteração;

[3] Ao clicar no link acima, seguir os seguintes passos: **1.** Clicar em Companhia. **2.** Clicar em Consulta de Documentos de Companhia. **3.** Digitar o nome Positivo no campo de pesquisa e clicar em Continuar. **4**. Clicar no número do CNPJ da Positivo. **5.** Expandir o "+Exibir Filtros de Pesquisa". **6.** No campo "Data de Entrega", selecionar "No período" e determinar um período mínimo de 12 meses. **7.** No campo "Categoria", selecionar a opção FRE – Formulário de Referência. **8.** Clicar em "Consultar". **9.** Selecionar a versão mais recente do documento pela Data de Entrega e na coluna "Ações", clicar no ícone com lupa para "Visualizar Documento". **10.** Ao abrir uma nova janela contendo o FRE - Formulário de Referência, selecionar na caixa de opções com lista suspensão o capítulo "6. Controle e grupo Econômico" e o subitem "6.1/2 Posição Acionária".

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POSITIVO
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*O quadro acima trata-se de print do FRE – Formulário de Referência, disponível para consulta no sistema da CVM

V. As informações acima são extraídas do Formulário de Referência (FRE), cujo encaminhamento periódico e eventual, previsto no artigo 22, inciso II, da Resolução CVM nº 80/22, reúne todas as informações referentes ao emissor de valores mobiliários admitidos à negociação em mercados regulamentados de valores mobiliários.

Ante todo o exposto, tem a presente declaração o intuito de esclarecer a identificar os principais beneficiários finais da participação, indireta, no capital social da POSITIVO, baseando-se em registros atualizados e públicos nesta data. Aproveitamos a oportunidade para reiterar nossos votos de estima e consideração, bem como nos colocamos à inteira disposição para eventuais dúvidas e esclarecimentos necessários.

Curitiba, 08 de julho de 2025.

Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

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POSITIVO
TECNOLOGIA

AO
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA GERAL DE JUSTIÇA

Ref.: PREGÃO ELETRÔNICO Nº 94010/2025-CPL/MP/PGJ SRP

DECLARAÇÃO

A empresa **POSITIVO TECNOLOGIA S.A (Filial)**, pessoa jurídica de direito privado, estabelecida na Rua Ásia, s/n – Lote 05 – Quadra N – Bairro Iguape, na Cidade de Ilhéus, Estado da Bahia – CEP 45.658-464, inscrita sob o CNPJ n.º 81.243.735/0009-03, declara como fabricante dos equipamentos ofertados para o pregão em referência que:

- Os produtos ofertados serão industrializados, novos e entregues acondicionados adequadamente em suas embalagens originais lacradas, acompanhados de guias e manuais de utilização e de cabos e conectores, além de licenças dos softwares necessários à sua perfeita instalação e funcionamento;
- A licença do software dedicado terá cobertura equivalente ao período de garantia do equipamento (60 meses) e estará plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;
- Os equipamentos pertencem à linha corporativa, não sendo equipamentos destinados ao uso da linha doméstica;
- A fonte de alimentação modelo PI-ADAP090-A(02) possui eficiência superior a 85% com 50% da carga de trabalho e implementa PFC (Power Factor Correction) ativo;
- A fonte de alimentação modelo PI-ADAP090-A(02) é totalmente compatível e homologada para utilização no equipamento POSITIVO MASTER N8450.
- Os equipamentos adquiridos incluem solução de segurança e rastreamento remoto, garantindo proteção contra acessos não autorizados, controle administrativo centralizado e mitigação de riscos relacionados à perda, furto ou roubo. A solução é fornecida com licenciamento válido para o período de 60 (sessenta) meses, com uma licença individual para cada equipamento adquirido, sem necessidade de aquisição de licenças adicionais além das atribuídas ao uso de cada dispositivo.

- A solução conta com as seguintes funcionalidades obrigatórias:

    - **Gerenciamento Centralizado na Nuvem**: A solução opera totalmente na nuvem, permitindo o gerenciamento remoto e centralizado de todos os equipamentos licenciados, sem necessidade de infraestrutura local dedicada para controle e administração.
    - **Rastreamento e Geolocalização**: Possibilita o rastreamento dos equipamentos em tempo real, utilizando geolocalização via rede, garantindo a identificação da última localização conhecida dos dispositivos cadastrados.
    - **Bloqueio e Proteção contra Acessos Não Autorizados**: Permite o bloqueio remoto do equipamento em caso de perda, furto ou uso indevido, garantindo que os dados armazenados fiquem inacessíveis a terceiros até a recuperação ou redefinição do dispositivo.
    - **Proteção contra Adulteração**: Inclui mecanismo de proteção contra tentativas de remoção ou desativação da solução, mesmo em casos de substituição do disco rígido ou reinstalação do sistema operacional, assegurando a persistência do software de segurança.

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- **Monitoramento de Hardware e Atividade**: Permite o monitoramento do status do hardware e da atividade do equipamento, gerando logs e relatórios sobre tentativas de acesso, movimentação e uso não autorizado.
- **Recuperação do Dispositivo**: A solução oferece mecanismos que auxiliem na recuperação do equipamento em caso de extravio ou furto, incluindo mensagens na tela para identificação do proprietário e envio de alertas automáticos para administradores da solução.

- **Outros Requisitos Técnicos e de Compatibilidade**

  - O software é compatível com Windows 11 Pro, garantindo suporte integral às funcionalidades do sistema operacional sem restrições.
  - A implementação da solução permite integração com ferramentas institucionais de gerenciamento de ativos, caso necessário, garantindo compatibilidade com os sistemas já utilizados pela **CONTRATANTE**.
  - O fornecedor garante atualizações contínuas e suporte técnico durante os 60 (sessenta) meses de vigência da licença, sem custos adicionais para a **CONTRATANTE**.

Curitiba, 08 de julho de 2025.

Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

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POSITIVO
TECNOLOGIA

AO
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA GERAL DE JUSTIÇA

Ref.: PREGÃO ELETRÔNICO Nº 94010/2025-CPL/MP/PGJ SRP

DECLARAÇÃO

Retorno de Equipamentos: A Positivo Tecnologia oferece serviço de coleta dos equipamentos, ao final da vida útil, através de solicitação e em condições a serem negociadas. Para utilização deste serviço e orçamento basta o cliente entrar em contato com a Central de Relacionamento Positivo pelo 0800-644-6591.

Prazo de Fornecimento de Peças de Reposição: A Positivo Tecnologia garante a disponibilidade de peças, sob orçamento, de equipamentos dentro do período de até 5 (cinco) anos após a fabricação do mesmo. Para obter maiores informações sobre a aquisição de peças de reposição para equipamentos fora da garantia, basta o cliente entrar em contato com a Central de Relacionamento Positivo pelo 0800-644-6591. A peça disponibilizada terá funcionamento equivalente ou superior ao da peça original. O prazo de fornecimento das peças será conforme disponibilidade.

Serviço de Manutenção Adicional: A Positivo Tecnologia disponibiliza o Serviço de Manutenção por até 36 (trinta e seis) meses adicionais após o vencimento da garantia contratada, mediante orçamento. Para a utilização deste serviço, o cliente deverá formalizar o interesse no ato da compra do equipamento.

Curitiba, 08 de julho de 2025.

Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

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POSITIVO
TECNOLOGIA

AO
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA GERAL DE JUSTIÇA

Ref.: PREGÃO ELETRÔNICO Nº 94010/2025-CPL/MP/PGJ SRP

DECLARAÇÃO

A empresa **POSITIVO TECNOLOGIA S.A (Filial)**, pessoa jurídica de direito privado, estabelecida na Rua Ásia, s/n – Lote 05 – Quadra N – Bairro Iguape, na Cidade de Ilhéus, Estado da Bahia – CEP 45.658-464, inscrita sob o CNPJ n.º 81.243.735/0009-03, declara como fabricante dos equipamentos ofertados ao pregão em referência, que conhece, aceita, se submete e atende plenamente todos os requisitos e as cláusulas do Edital e seus anexos, bem como, esclarecimentos adicionais se for o caso.

Curitiba, 08 de julho de 2025.

Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

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POSITIVO
TECNOLOGIA

CONDIÇÕES GERAIS

PRAZO DE ENTREGA	:	**90 (noventa) dias corridos,** contados do primeiro dia útil subsequente ao do recebimento da respectiva Nota de Empenho.
VALIDADE DA PROPOSTA	:	**90 (noventa) dias,** a contar da data de sua apresentação.
PRAZO DE VALIDADE DA ATA DE REGISTRO DE PREÇOS	:	**12 (doze) meses,** a partir da data de publicação do extrato da Ata de Registro no Portal Nacional de Contratações Públicas - PNCP.
CONDIÇÕES DE PAGAMENTO	:	**Até 10 (dez) dias úteis,** contados da finalização da liquidação da despesa.
GARANTIA	:	**60 (sessenta) meses on-site,** prestado pela Positivo ou por sua rede de assistência técnica autorizada. Para as baterias, a garantia será de 36 (trinta e seis) meses. O prazo máximo para conclusão dos reparos será de 5 (cinco) dias úteis, e consistirá na reparação das eventuais falhas dos produtos e na substituição de peças ou componentes que se apresentem defeituosos, completamente de acordo com manuais e normas técnicas específicas para os materiais.

Curitiba, 08 de julho de 2025.

Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

Certificado de Conclusão

Identificação de envelope: 7118AD05-2BB7-498A-BB22-3577987D0D50
Status: Concluído
Assunto: Complete com o Docusign: 01 - Proposta E Especificação.docx
Empresa Responsável: Positivo Tecnologia
Envelope fonte:
Documentar páginas: 17
Assinaturas: 7
Certificar páginas: 1
Rubrica: 10
Assinatura guiada: Ativado
Selo com EnvelopeId (ID do envelope): Ativado
Fuso horário: (UTC-03:00) Brasília

Remetente do envelope:
Hingrid Barbara Miguel
Rua João Bettega, 5200.
Curitiba, PR 81530000
hingridm@positivo.com.br
Endereço IP: 200.186.50.209

Rastreamento de registros

Status: Original
08 de julho de 2025 | 16:32
Portador: Hingrid Barbara Miguel
hingridm@positivo.com.br
Local: DocuSign

Eventos do signatário	Assinatura	Registro de hora e data
MARIA HELENA PEREIRA mhpereira@positivo.com.br Positivo Tecnologia S.A. Nível de segurança: E-mail, Autenticação da conta (Nenhuma), Certificado Digital **Detalhes do provedor de assinatura:** Tipo de assinatura: ICP-Brasil Emissor da assinatura: AC Certisign RFB G5 **Termos de Assinatura e Registro Eletrônico:** Não oferecido através da Docusign	Signed by: MARIA HELENA PEREIRA 83968BDA4C4443B... Adoção de assinatura: Estilo pré-selecionado Usando endereço IP: 200.186.50.209	Enviado: 08 de julho de 2025 | 16:34 Visualizado: 08 de julho de 2025 | 16:36 Assinado: 08 de julho de 2025 | 16:39

Eventos do signatário presencial	Assinatura	Registro de hora e data

Eventos de entrega do editor	Status	Registro de hora e data

Evento de entrega do agente	Status	Registro de hora e data

Eventos de entrega intermediários	Status	Registro de hora e data

Eventos de entrega certificados	Status	Registro de hora e data

Eventos de cópia	Status	Registro de hora e data

Eventos com testemunhas	Assinatura	Registro de hora e data

Eventos do tabelião	Assinatura	Registro de hora e data

Eventos de resumo do envelope	Status	Carimbo de data/hora
Envelope enviado	Com hash/criptografado	08 de julho de 2025 | 16:34
Entrega certificada	Segurança verificada	08 de julho de 2025 | 16:36
Assinatura concluída	Segurança verificada	08 de julho de 2025 | 16:39
Concluído	Segurança verificada	08 de julho de 2025 | 16:39

Eventos de pagamento	Status	Carimbo de data/hora

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

OFÍCIO Nº 256.2025.CPL.1667127.2025.001317

Manaus, *na data da assinatura.*

Ao Senhor

CARLOS ALEXANDRE DOS SANTOS NOGUEIRA

Chefe do Setor de Infraestrutura e Telecomunicação

Assunto: Análise de Propostas de Preços referente ao **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ SRP**.

Senhor Chefe,

Cumprimentando-o com o presente, informamos que tramita nesta Comissão Permanente de Licitação o Processo SEI n.º 2025.001317, referente ao **PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP,** cujo objeto é o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses*.

Isto posto, encaminhamos os autos em epígrafe a esse **Setor de Infraestrutura e Telecomunicação - SIET,** para **análise e manifestação** quanto às proposta de preço abaixo elencadas:

1 . **E.R. SOLUCOES INFORMATICA LTDA.** , CNPJ (MF) n.º 05.778.325/0005-47, para o Item 2 (doc's. 1667752, 1667756 e 1667757); e

2 . **POSITIVO TECNOLOGIA S/A (Filial)**, CNPJ (MF) n.º 81.243.735/0009-03, para o Item 3 (doc's. 1667843, 1667855 e 1667859).

Atenciosamente,

Maurício Araújo Medeiros

Pregoeiro - PORTARIA 606/2025/SUBADM

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 09/07/2025, às 11:34, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1667127** e o código CRC **8CA608F2**.

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - CEP 69000-000 - Manaus - AM - www.mpam.mp.br

PARECER Nº 21.2025.SIET.1668662.2025.001317

PROCESSO DE COMPRA: 2025.001317 Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ SRP Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317
OBJETO: Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.

1. **Relatório**

Trata-se de pedido de compatibilização da proposta da empresa **ER SOLUÇÕES INFORMÁTICA LTDA.,** melhor classificada para o **ITEM 2: MICROCOMPUTADOR TIPO 2 - "WORKSTATION COM MONITOR PRINCIPAL E MONITOR AUXILIAR"**, na fase de disputas do Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ, documentos 1667752, 1667756 e 1667757, recebido no dia 9/7/2025.

2. **Da Análise**

2.1 Produto ofertado

Item	Descrição	Quantidade	Produto Ofertado
1	**ITEM 2: MICROCOMPUTADOR TIPO 2 - "WORKSTATION COM MONITOR PRINCIPAL E MONITOR AUXILIAR"** **Marca/Modelo de Referência:** Lenovo THINKSTATION P3 TW.	50	**SUBITEM 2.1: MICROCOMPUTADOR TIPO 2 – "WorkStation Torre"** LENOVO THINKSTATION P3 TW - PN 30GUCTO1WW **SUBITEM 2.2: MONITOR PRINCIPAL 27 POL WIDESCREEN** Monitor Lenovo ThinkVision T27hv-30 IPS - PN 63D6UAR3US **SUBITEM 2.3: "MONITOR AUXILIAR 27 POL WIDESCREEN"** Monitor Lenovo ThinkVision T27i-30 IPS - PN 63A4MAR1BR

2.2 Análise comparativa

DESCRIÇÃO	PARECER	OBSERVAÇÕES
SUBITEM 2.1: MICROCOMPUTADOR TIPO 2 – "WorkStation Torre"		
1. PLACA PRINCIPAL (PLACA-MÃE)		
1. A placa mãe deve ser construída pelo próprio fabricante do microcomputador ou produzida sob a especificação dele, não sendo aceito placas de livre comercialização no mercado, nem em regime de OEM;		
2. Deverá possuir chipset produzido pelo fabricante do processador ofertado;		
3. Deve possuir, no mínimo, 4 (quatro) slots para memória RAM, "do tipo DDR-5 UDIMM, ou superior", permitindo a instalação de até 128 (cento e vinte e oito) Gigabytes;		
4. Deve suportar tecnologia Dual Channel de utilização de memória RAM, ou superior;		
5. Deve possuir, no mínimo, 6 (seis) interfaces de disco, sendo que no mínimo 2 (duas) interfaces internas, Serial ATA III (600), ou superior e 2 (duas) Sockets M.2 para SSD SATA ou NVMe;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
6. Deve ter controladora para implementar array de discos do tipo RAID 0/1 para unidades conectadas nos slots M.2, e RAID 0/1 para unidades nas interfaces SATA;		
7. Deve possuir no mínimo, 1 (um) slot PCIe 4.0 x16, 01 (um) slot PCIe 3.0 x4 e 01 (um) slot PCIe 3.0 x1;		
8. Deve possuir recursos DASH 1.0 (Desktop and mobile Architecture for System Hardware), ou tecnologia minimamente equivalente;		
9. Deve ser compatível com Energy Star 7.0/7.1, ou tecnologias superiores;		
10. Deve possuir capacidade de desligamento do vídeo e do disco rígido após tempo determinado pelo usuário, religamento por acionamento de teclado ou mouse, bem como função de economia de energia para monitor, placa mãe e unidades de armazenamento internas;		
11. Deve possuir chip TPM (Trusted Platform Module), versão 2.0, ou superior, soldado à placa principal, e destinado ao armazenamento de senhas, certificados digitais e chaves criptográficas em conformidade com as especificações do Trusted Computing Group;		
12. Deve possuir sistema de detecção de intrusão de chassis, com respectivo acionador instalado no gabinete que permita a detecção de abertura ainda que o equipamento esteja desligado da fonte de energia, devendo gerar log na memória flash da BIOS com todos os eventos de intrusão;		
13. Deve possuir suporte a virtualização por hardware;		
14. Deve possuir suporte a implementação de extensões de virtualização de I/O por hardware;		
15. Deve possuir suporte a aceleração de segurança AES no hardware;		
16. Deve possuir suporte à tecnologia de acesso remoto out-of-band embutida no hardware;		
17. Deve possuir controle da velocidade de rotação do cooler do processador de forma automática, de acordo com a variação de temperatura da CPU;		
18. Deve suportar boot por pendrive ou disco conectado a uma porta USB 3.1;		
19. Deve suportar a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/https boot.		
2. BIOS		
1. O BIOS deve ser desenvolvido pelo mesmo fabricante do equipamento ou customizado por ele;		
2. O fabricante do equipamento, deverá ser totalmente responsável pelo BIOS fornecido juntamente com a placa mãe e pela atualização do mesmo, devendo promover as alterações que se façam necessárias e corrigir problemas ou danos causados ao equipamento em razão desse BIOS ou de procedimentos de atualização deste, (que poderão ser acompanhados pela empresa caso haja necessidade), durante o período de garantia do equipamento;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
3. BIOS em português ou inglês, desenvolvido em conformidade com a especificação UEFI 2.5 ou superior (http://www.uefi.org) e capturáveis pela aplicação de inventário SCCM (System Center Configuration Manager);		
4. O fabricante deverá comprovar a compatibilidade com o padrão UEFI através do site http:// www.uefi.org/members, na categoria membros;		
5. Deve ser do tipo flash EPROM, atualizável por software, compatível com o padrão plug-and-play;		
6. Deve ser lançado a partir de 2016 e entregue na versão mais atual disponibilizada pelo fabricante;		
7. Deve ter suporte a ACPI, ou tecnologia superior;		
8. Deve ser desenvolvido de acordo com o padrão de segurança NIST 800-147 ou ISO/IEC 19678:2015, para garantir a integridade do BIOS;		
9. Deve possuir recursos de controle de permissão através de senhas, sendo uma para inicializar o computador e outra para acesso e alterações das configurações do BIOS;		
10. Deve possuir software embarcado no BIOS com funções de diagnóstico de problemas, e gerenciamento com as seguintes características: 1. Permitir o teste do equipamento, com independência do sistema operacional instalado, o software de diagnóstico deve ser capaz de ser executado (inicializado) a partir da UEFI (Unified /Extensible Firmware Interface) ou do Firmware do equipamento através do acionamento de tecla função (F1...F12); 2. O software de diagnóstico deverá ser capaz de informar, através de tela gráfica: O fabricante e modelo do equipamento, processador, memória RAM, firmware, e capacidade do disco rígido;		
11. Deve possuir ferramenta que possibilite realizar a formatação definitiva dos dispositivos de armazenamento conectados ao equipamento, desenvolvida em acordo com o padrão de segurança NIST 800-88 ou ISO/IEC 27040:2015. Caso esta ferramenta não seja nativa do BIOS, deverá ser oficialmente homologada pelo fabricante do equipamento;		
12. Deve possuir opção para exportar/importar configurações. No caso de ferramenta externa fornecida para atender esse item, a mesma deve ser disponibilizada no web site de suporte do fabricante, em conjunto com outras ferramentas relacionadas e homologadas para o modelo do equipamento;		
13. Deve oferecer a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela CONTRATANTE;		
14. Deve possuir campo não editável com o número de série do equipamento gravado em memória não volátil e campo editável que permita inserir identificação customizada (identidade patrimonial com pelo menos 10 caracteres). Serão aceitos BIOS com reprogramação via software desde que estes estejam devidamente licenciados para o equipamento e disponibilizados para download no web site de suporte do fabricante;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
15. Deverá permitir o gerenciamento remoto do microcomputador mesmo desligado, desde que energizado pela rede elétrica e conectado localmente à rede de dados, permitindo ligar e desligar o microcomputador remotamente, com controle de acesso, e com possibilidade de definir horários programados; 1. Deve permitir acesso remoto através da rede ao POST (procedimento de inicialização) e BIOS para leitura e gravação, mesmo com o equipamento desligado; 2. Deverá permitir acesso remoto ao sistema operacional e processo de inicialização do microcomputador através de interface gráfica, com controle remoto do mouse e teclado (KVM remoto), independente do suporte de aplicações locais ou estado do sistema operacional; 3. Possuir a capacidade de inventário remoto de Hardware mesmo com o equipamento desligado.		
3. PROCESSADOR		
1. O processador ofertado, deverá possuir minimamente 8 (oito) núcleos e 16 (dezesseis) threads de processamento, podendo atingir frequência de operação interna de até 5.4 GHz em modo turbo, no mínimo;		
2. Em caso de processadores com arquitetura de computação heterogênea (big.LITTLE), só serão contabilizados os cores voltados para performance, na contagem mínima de núcleos, threads e ciclos de clock base (MHz);		
3. Memória cache total de, no mínimo, 32MB;		
4. O conjunto chipset e processador deve ser indicado por seu fabricante como destinado para uso em WorkStations;		
5. O processador deverá pertencer à última geração disponível utilizada pelo fabricante do equipamento, com desempenho mínimo de 41.800 (quarenta e um mil e oitocentos) pontos, considerando o uso pleno de todos os núcleos e sem a aplicação de configurações específicas para aumento ou modificação de desempenho, como "overclock", "undervoltage", "overvoltage" ou quaisquer outras que não estejam em conformidade com os padrões definidos pelo fabricante; 1. O desempenho será comprovado por intermédio de resultados de BenchMark, disponíveis em: http://www.cpubenchmark.net/cpu_list.php; 2. Será admitida uma margem de tolerância de 2% (dois por cento) do desempenho mínimo exigido.		
6. Deve possuir tecnologia de controle dinâmico de frequência do processador para núcleos individuais e ou múltiplos núcleos;		
7. Deve possuir controlador com suporte à memória RAM do tipoDDR5-4400 MT/s, ou superior;		
8. Deverá possuir tecnologia de fabricação de 10 nm (dez nanômetros) ou inferior;		
9. TDP(Thermal Design Power) típico de 65W, e máximo de 220W, declarado pelo fabricante;		
10. Deve possuir instruções do padrão AVX 2.0, ou superior;		
11. Deve possuir instruções do padrão SSE4.1/4.2, ou superior;		
12. Deve possuir instruções que implementem extensões de virtualização de hardware;		
13. Deve possuir instruções AES-NI embutidas;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
14. O proponente deverá declarar em sua proposta comercial o modelo do processador ofertado.		
4. MEMÓRIA RAM		
1. Deverá possuir, no mínimo, 32 (trinta e dois) Gb de memória RAM instalados, do tipo ECC (Error Correcting Code), com capacidade de expansão mínima de 128 (cento e vinte e oito) Gb;		
2. Deverá ser do tipo DDR-5 SODIMM ou superior e possuir, no mínimo, 4.400 MT/s de velocidade de comunicação com o barramento principal;		
3. A implementação do total de memória RAM deve utilizar 2 (dois) módulos, em modo dual channel;		
4. A memória ofertada, deverá possuir as melhores especificações possíveis dentre as disponíveis para o equipamento proposto;		
5. Os módulos devem ser instalados durante o processo de manufatura do computador, e homologados como parte do equipamento, inclusive estando cobertos pela garantia e suporte como descrito no Termo de Referência.		
5. UNIDADES DE ARMAZENAMENTO		
1. Deve possuir, no mínimo, 1 (uma) unidade padrão tipo Solid State Drive (SSD) interna instalada do tipo M.2, na capacidade mínima de 256Gb e velocidade mínima de gravação de 1.200MB/s;		
2. Deve utilizar interface tipo M.2 PCIe 4.0, com o protocolo NVMe, ou superior;		
3. Deve possuir, no mínimo, 1 (uma) unidade secundária de disco rígido (HDD) interna instalada, na capacidade mínima de 1Tb e velocidade de rotação mínima de 7.200RPM; 1. Deve utilizar interface Serial ATA III 600, ou superior; 2. Deve ter capacidade de armazenamento de 1 TB, no mínimo;		
4. As unidades devem ser instaladas durante o processo de manufatura do computador, e homologadas como parte do equipamento, inclusive estando cobertas pela garantia e suporte como descrito no Termo de Referência.		
6. INTERFACES DE REDE		
1. Deve possuir, no mínimo, 1 (uma) interface de rede RJ45 compatível com os padrões 10, 100 e 1000 Mbps, autosense, full-duplex e plug-and-play, configurável totalmente por software e com função wake-on-lan instalada e em funcionamento;		
2. A controladora ethernet, deverá ser do tipo "onboard", e suportar recurso WOL (Wake On LAN);		
3. Deve possuir, no mínimo, 01 (uma) interface de rede sem fios no padrão Wi-Fi 6 (802.11 B/G/N/AX), com velocidade de até 1.73Gbps, Tecnologia MU-MIMO, banda dupla em 2.4Ghz e 5Ghz, e suporte a Bluetooth 5.0 ou superior;		
4. As controladoras Wi-Fi e Bluetooth, deverão estar em um único cartão M.2, placa PCIe , conectado em slot específico na placa mãe, ou soldadas diretamente na mesma, “onboard”;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
5. No caso de cartão M.2 ou placa PCIe, o hardware deve ser instalado durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência.		
6. As interfaces Wireless ofertadas devem possuir, na data da entrega da proposta, homologação junto à ANATEL com certificado disponível publicamente no endereço eletrônico desta agência, conforme a Resolução n.º 242 de 30 de novembro de 2000.		
7. CONECTIVIDADE		
1. Deverá possuir no mínimo 2 (duas) portas USB 3.2, do tipo A, localizadas na parte frontal do gabinete;		
2. Deverá possuir no mínimo 4 (quatro) portas USB 3.2, do tipo A, localizadas na parte traseira do gabinete;		
3. Possuir 1 (uma) porta USB 3.2 Tipo C;		
4. Não serão aceitas portas USB instaladas adicionalmente como placas PCI ou adaptadores. As portas devem fazer parte do projeto original da placa mãe do equipamento proposto;		
5. Deverá possuir leitor de cartões de memória integrado com suporte à cartões SD (Secure Digital).		
8. CONTROLADORA DE VÍDEO		
1. Deve possuir controladora com no mínimo 8 (oito) GB de memória GDDR6 dedicada, com largura de banda para a VRAM de 128 bits, suportando gráficos 3D/2D e DirectX 12, ou superior;		
2. Deve suportar Pixel Shader 3.0, ou superior;		
3. Deve suportar OpenGL 4.6, ou superior;		
4. Deve suportar Vulkan 1.2, ou superior;		
5. Deve suportar HDCP ou HDR;		
6. Deve suportar a resolução mínima de 3840 X 2160 @ 60 Hz;		
7. Tipo de bus PCI Express x8;		
8. Possuir, no mínimo, um total de 3 (três) portas de vídeo, suportando a utilização de até 2 (dois) monitores auxiliares simultânea e independentemente do monitor principal; 1. Os tipos das portas de vídeo supracitadas devem ser, no mínimo, HDMI 1.4 e/ou DisplayPort 1.2; 2. Serão aceitos adaptadores para atender todas as portas supra citadas, em detrimento das portas diferenciadas e disponíveis na controladora de vídeo externa;		
9. A controladora de vídeo proposta deverá alcançar pontuação mínima de desempenho de 10.500 pontos aferidos pelo site https://www.videocardbenchmark.net/gpu_list.php;		
10. Deverá ser homologada pelo fabricante, com comprovação através de catálogo do equipamento;		
11. Deve suportar, no mínimo, o uso de 3 (três) monitores simultânea e independentemente.		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
9. CONTROLADORA DE SOM E MULTIMÍDIA		
1. O equipamento deve possuir uma controladora de som integrada, do tipo "onboard", padrão "High Definition Audio";		
2. Deve possuir, no mínimo, uma interface de som com 1 (um) conector combinado para fone de ouvido e microfone, de 3,5 MM, na parte frontal do gabinete;		
3. Deve possuir, no mínimo, 1 alto-falante interno, com 2 Watts RMS de potência, compatível com a controladora de som.		
10. TECLADO		
1. A marca do teclado deverá ser igual à do fabricante do equipamento ofertado;		
2. Deve ser USB, no idioma padrão, Português (Brasil), ABNT-II;		
3. Deve possuir teclas multimídia, com no mínimo, aumentar e diminuir volume, além do mute;		
4. Admite-se a utilização de teclas de função (F1...F12), para tais ações;		
5. Deve possuir teclado numérico integrado;		
6. Deve possuir, no mínimo, LEDs indicadores de estado das teclas capslock e numlock;		
7. Deve possuir ajuste de inclinação;		
8. Deve ser em gradações das cores preto ou prata;		
9. Não será aceito teclado com cabo retrátil;		
10. Não será aceito teclado wireless/bluetooth (sem fio).		
11. MOUSE		
1. Mouse óptico com conexão USB, de 3 (três) botões e sistema de rolagem, com formato ergonômico e com design ambidestro, devendo possuir resolução mínima por hardware de 1.000 dpi;		
2. Deve ser da mesma marca do fabricante do equipamento ofertado;		
3. Deve ser em gradações das cores preto ou prata;		
4. Deve acompanhar mousepad ergonômico com apoio em gel para o pulso, do mesmo fabricante do equipamento;		
5. O mouse ou teclado ofertados, deve possuir um leitor biométrico, certificado para trabalhar com a autenticação do Microsoft Windows Hello.		
12. FORMATO DE MANUFATURA E FONTE DE ALIMENTAÇÃO		
1. O computador deve ser produzido no formato WorkStation Torre;		
2. Gabinete com volume mínimo de 19 (dezenove) e máximo de 27 (vinte e sete) litros e construído de material reforçado;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
3. Deverá possuir botão de liga/desliga na parte frontal do gabinete, com LED de indicação de que o equipamento está energizado, em local visível e acessível do gabinete.		
4. Deverá possuir pelo menos 2 (duas) baias internas para discos rígidos de 2,5 ou 3,5 polegadas;		
5. O gabinete deverá possuir um slot específico para conexão de tranca física de segurança do tipo Kensington ou similar. Deve ser entregue junto com o equipamento, a trava de forma a impedir a abertura do equipamento;		
6. O material do gabinete deve ser de estrutura livre de BFR e outros materiais tóxicos e/ou antiecológicos;		
7. O gabinete deve possuir acabamento interno composto de superfícies não cortantes;		
8. Deverá oferecer a possibilidade de, se demandado, aplicar logo oficial da contratante, com área de impressão mínima de 3,00 x 2,72 cm, através de sistema de gravação direta como aplicação em Laser, não sendo admitido o uso de adesivagem, serigrafias ou adaptações semelhantes. A gravação deverá ser feita apenas no gabinete da workstation visando medidas de segurança;		
9. Deve ser fornecido com fonte de alimentação interna do mesmo fabricante e compatível com o equipamento, com potência mínima de 500W (quinhentos Watts), suficiente para suportar todos os dispositivos internos (placa mãe, interfaces, unidades de armazenamento, memória RAM e demais componentes e periféricos);		
10. A fonte de alimentação deve possuir eficiência igual ou superior a 92%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);		
11. A fonte deve aceitar tensão de entrada 110 e 220 Volts, de forma automática;		
12. Deverá ser fornecido um cabo de alimentação Y (para CPU e monitor), com conexão à rede elétrica no padrão NBR 14136:2002.		
13. SISTEMA OPERACIONAL E SOFTWARES COMPLEMENTARES		
1. Deve acompanhar o equipamento licença OEM do sistema operacional Microsoft Windows 11 Professional de 64 bits, ou versão mais recente, no idioma Português Brasil;		
2. O equipamento deve ser entregue com o Windows 11 Professional 64 bits, ou versão mais recente instalado;		
3. Cada equipamento deve incluir uma licença específica de software dedicado para:		
4. Controle: Funções de bloqueio e desbloqueio remoto.		
5. Inventário: Gestão detalhada de hardware e software do equipamento.		
6. Rastreabilidade: Recursos de geolocalização integrados.		
7. O software de controle e monitoramento deve possuir a funcionalidade de persistência, garantindo a preservação do cliente do software e de suas funcionalidades, mesmo após a perda total de dados ou formatação do disco rígido, utilizando tecnologia de residência em firmware;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
8. A interface de controle e monitoramento dos equipamentos deve ser baseada em nuvem, sem a necessidade de licenças adicionais além daquelas atribuídas a cada equipamento;		
9. A licença do software dedicado deve ter cobertura mínima equivalente ao período de garantia do equipamento, de 60 (sessenta) meses, e deve estar plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;		
10. Os equipamentos poderão ser entregues com imagem de instalação do sistema operacional e softwares customizada e previamente fornecida pela CONTRATANTE, conforme especificado no Termo de Referência.		
14. COMPATIBILIDADE		
1. Deve ser apresentado o certificado de compatibilidade dos equipamentos com o sistema operacional Windows 11 x64 obtido junto à Microsoft. Deverá constar no Microsoft Hardware Compatibility List (HCL) para o modelo e sistema operacional exigido e ofertado;		
2. A comprovação da compatibilidade será efetuada pela apresentação do documento Hardware Compatibility Test Report emitido especificamente para o modelo no sistema operacional ofertado, ou pela indicação no site da Microsoft;		
3. O equipamento deverá possuir certificado de homologação comprovando a compatibilidade do mesmo com, pelo menos, uma distribuição de Linux. A comprovação da compatibilidade será efetuada pela apresentação de documento emitido especificamente para o modelo ofertado;		
4. O equipamento, na configuração ofertada, deve possuir certificado de conformidade contra incidentes elétricos e de combustão dos materiais (IEC/EN 60950) e de imunidade eletromagnética (IEC/EN 61000), comprovado através de certificados ou do relatório de avaliação de conformidade nos moldes da portaria 170/2012 vigente do INMETRO, ou similar Internacional;		
15. OUTROS REQUISITOS		
1. Todas as partes do equipamento (gabinete, base, teclado e mouse) devem ter coloração neutra em gradações de preto ou prata, mantendo o padrão e cor;		
2. Equipamento deverá ser novo, partes e peças, de primeiro uso, que deverão ser acondicionados em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;		
3. Todos os equipamentos deverão ser entregues idênticos, ou seja, todos os componentes externos e internos deverão ter os mesmos modelo e marca;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
4. Informar marca e modelo dos componentes utilizados na solução e apresentar prospecto com as características técnicas do equipamento e da placa mãe, processador, memórias, interfaces de rede, fonte de alimentação, unidade de armazenamento, mouse e teclado, incluindo especificação de marca, modelo, e outros elementos que de forma inequívoca identifiquem e constatem as configurações, possíveis expansões e upgrades, comprovando-os através de certificados, manuais técnicos, folders e demais literaturas técnicas editadas pelos fabricantes;		
5. O equipamento proposto deverá estar em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;		
6. Não serão aceitos produtos descontinuados por seus fabricantes, não devendo constar em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não poderão ter previsão de descontinuidade de fornecimento, suporte ou vida;		.
7. O equipamento em pleno funcionamento deve atender à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que deverá acompanhar a proposta;		
8. Deverá ter compatibilidade eletromagnética e de radiofrequência IEC 61000 comprovado através de certificado ou relatório de avaliação de conformidade emitido por órgão credenciado pelo INMETRO ou internacional equivalente;		
9. Deverá ter compatibilidade com o padrão DMI 2.0 (Desktop Management Interface) ou mais recente da DMTF (Desktop Management Task Force), comprovado através de documentação expedida pelo fabricante do equipamento ou comprovação de que o fabricante do equipamento é membro do consórcio DMTF listado em uma das categorias BOARD ou LEADERSHIP;		
10. Deverá ter compatibilidade com a norma TPM Specification Version 2.0 especificadas pelo TCG (Trsted Computing Group), devendo o fabricante ser membro de uma das categorias listadas no site http://www.trustedcomputinggroup.org/about_tcg/tcg_members;		
11. Deverá ter compatibilidade com EPEAT na nova categoria Bronze, comprovada através de atestados ou certidões que mostrem que o equipamento é aderente ao padrão de eficiência energética EPEAT, emitido por instituto credenciado junto ao INMETRO ou equivalente internacional;		
12. Será admitida como comprovação também, a indicação que o equipamento consta no site www.epeat.net na nova categoria Bronze;		
13. Não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS (Restriction of Certain Hazardous Substances);		
14. Os equipamentos deverão pertencer à linha corporativa, não sendo aceitos equipamentos destinados ao uso da linha doméstica;		
15. A comprovação deverá ser apresentada junto com a proposta;		
16. Não serão aceitos equipamentos que contenham lacres de violação de garantia por abertura, que inviabilizem a inspeção dos componentes à qualquer momento;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
17. **Garantia de 60 (sessenta) meses on-site**, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo.	⚠	Necessário diligências.
SUBITEM 2.2: MONITOR PRINCIPAL 27 POL WIDESCREEN		
1. TELA		
1. Deve ser de tecnologia IPS (In-Plane Switching) ou VA (Vertical Alignment);		
2. Tamanho de 27 polegadas widescreen, com variação inferior a 3%;		
3. Resolução mínima de 2560x1440 a 60Hz, 16 milhões de cores;		
4. Ângulo de visão mínimo de 170° horizontal e vertical;		
5. Deve possuir controle digital de brilho, contraste e posicionamentos vertical e horizont**al.**		
2. INTERFACES		
1. Possuir, no mínimo, 2 (duas) portas de entrada de vídeo;		
2. Não importando os tipos de portas de entrada, deve acompanhar cabos que permitam conectar o monitor a equipamentos com portas de tipo HDMI 1.4 e DisplayPort 1.2;		
3. Serão aceitos adaptadores, em adicional aos cabos originais, para contemplar a possibilidade de conexão às portas de entrada solicitadas;		
4. O equipamento deve ter HUB USB 3.0 interno, com 1 (uma) porta USB para upstream a partir do PC;		
5. Deve possuir 4 (quatro) portas USB 3.0, sendo no mínimo 2 (duas) na lateral, na parte inferior ou na traseira do equipamento;		
6. Deve ter 1 (uma) porta combinada de 3,5mm para saída de fone de ouvido e entrada de microfone.		
3. MULTIMÍDIA		
1. O monitor deve possuir uma webcam, de no mínimo 5.0 megapixels;		
2. Deve incorporar microfone, com cancelamento de ruído, voltados para captar o som do usuário em frente ao monitor;		
3. Deve possuir 2 (dois) alto-falantes de 5W cada, integrados na parte frontal ou inferior do monitor.		
4. OUTROS REQUISITOS		
1. A cor deve ser predominantemente a mesma da cor ofertada no subitem **2.1 “MICROCOMPUTADOR Workstation”**;		
2. Possuir certificação de segurança UL ou IEC 60950;		
3. Possuir certificação de economia de energia EPA Energy Star, TCO 5.0 ou similar;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
4. Deve aceitar tensões de 110 e 220 Volts de forma automática;		
5. Deve acompanhar cabo de alimentação original do fabricante com conector de tomada elétrica no padrão brasileiro (NBR 14136:2002);		
6. O equipamento deverá vir acondicionado em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;		
7. Os equipamentos não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS - Restriction of Certain Hazardous Substances.		
8. O equipamento deve possuir interface de montagem no padrão VESA 100 x 100mm.		
9. Deverá possuir mecanismo físico para bloquear/obstruir a função da webcam;		
10. O equipamento proposto deverá estar em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;		
11. Não serão aceitos produtos descontinuados por seus fabricantes, não devendo constar em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não poderão ter previsão de descontinuidade de fornecimento, suporte ou vida;		
12. O equipamento em pleno funcionamento deve atender à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que deverá acompanhar a proposta;		
13. **Garantia de 60 (sessenta) meses on-site**, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo.		
SUBITEM 2.3: “MONITOR AUXILIAR 27 POL WIDESCREEN”		
1. TELA		
1. Deve ser de tecnologia IPS (In-Plane Switching) ou VA (Vertical Alignment);		
2. Tamanho de 27 polegadas widescreen, com variação inferior a 3%;		
3. Resolução mínima de 1920x1080 a 60Hz, 16 milhões de cores;		
4. Ângulo de visão mínimo de 170° horizontal e vertical;		
5. Deve possuir controle digital de brilho, contraste e posicionamentos vertical e horizontal;		
2. INTERFACES		
1. Possuir ao menos 2 (duas) portas de entrada de vídeo;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
2. Não importando os tipos de portas de entrada, deve acompanhar cabos que permitam conectar o monitor a equipamentos com portas de tipo HDMI 1.4 e DisplayPort; 1. Serão aceitos adaptadores, em adicional aos cabos originais, para contemplar a possibilidade de conexão às portas solicitadas no item acima.		
3. SUPORTE DE MONTAGEM		
1. O equipamento deve possuir interface de montagem no padrão VESA 100 x 100mm;		
2. O acessório deve possibilitar minimamente os seguintes movimentos do monitor: 1. Rotação de 90º; 2. Elevação de 10cm; 3. Panorâmica de 90º; 4. Inclinação de -5º a 20º;		
4. OUTROS REQUISITOS		
1. A cor deve ser predominantemente a mesma da cor ofertada no subitem **2.1 "MICROCOMPUTADOR Workstation"**;		
2. Possuir certificação de segurança UL ou IEC 60950;		
3. Possuir certificação de economia de energia EPA Energy Star, TCO 5.0 ou similar;		
4. Deve aceitar tensões de 110 e 220 Volts de forma automática;		
5. Deve acompanhar cabo de alimentação original do fabricante com conector de tomada elétrica no padrão brasileiro (NBR 14136:2002);		
6. O equipamento deverá vir acondicionado em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;		
7. Os equipamentos não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS - Restriction of Certain Hazardous Substances;		
8. **Garantia de 60 (sessenta) meses on-site**, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo.		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
SUBITEM 2.1: MICROCOMPUTADOR TIPO 2 – "WorkStation Torre"		
1. PLACA PRINCIPAL (PLACA-MÃE)		
1. A placa mãe deve ser construída pelo próprio fabricante do microcomputador ou produzida sob a especificação dele, não sendo aceito placas de livre comercialização no mercado, nem em regime de OEM;		
2. Deverá possuir chipset produzido pelo fabricante do processador ofertado;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
3. Deve possuir, no mínimo, 4 (quatro) slots para memória RAM, “do tipo DDR-5 UDIMM, ou superior”, permitindo a instalação de até 128 (cento e vinte e oito) Gigabytes;		
4. Deve suportar tecnologia Dual Channel de utilização de memória RAM, ou superior;		
5. Deve possuir, no mínimo, 6 (seis) interfaces de disco, sendo que no mínimo 2 (duas) interfaces internas, Serial ATA III (600), ou superior e 2 (duas) Sockets M.2 para SSD SATA ou NVMe;		
6. Deve ter controladora para implementar array de discos do tipo RAID 0/1 para unidades conectadas nos slots M.2, e RAID 0/1 para unidades nas interfaces SATA;		
7. Deve possuir no mínimo, 1 (um) slot PCIe 4.0 x16, 01 (um) slot PCIe 3.0 x4 e 01 (um) slot PCIe 3.0 x1;		
8. Deve possuir recursos DASH 1.0 (Desktop and mobile Architecture for System Hardware), ou tecnologia minimamente equivalente;		
9. Deve ser compatível com Energy Star 7.0/7.1, ou tecnologias superiores;		
10. Deve possuir capacidade de desligamento do vídeo e do disco rígido após tempo determinado pelo usuário, religamento por acionamento de teclado ou mouse, bem como função de economia de energia para monitor, placa mãe e unidades de armazenamento internas;		
11. Deve possuir chip TPM (Trusted Platform Module), versão 2.0, ou superior, soldado à placa principal, e destinado ao armazenamento de senhas, certificados digitais e chaves criptográficas em conformidade com as especificações do Trusted Computing Group;		
12. Deve possuir sistema de detecção de intrusão de chassis, com respectivo acionador instalado no gabinete que permita a detecção de abertura ainda que o equipamento esteja desligado da fonte de energia, devendo gerar log na memória flash da BIOS com todos os eventos de intrusão;		
13. Deve possuir suporte a virtualização por hardware;		
14. Deve possuir suporte a implementação de extensões de virtualização de I/O por hardware;		
15. Deve possuir suporte a aceleração de segurança AES no hardware;		
16. Deve possuir suporte à tecnologia de acesso remoto out-of-band embutida no hardware;		
17. Deve possuir controle da velocidade de rotação do cooler do processador de forma automática, de acordo com a variação de temperatura da CPU;		
18. Deve suportar boot por pendrive ou disco conectado a uma porta USB 3.1;		
19. Deve suportar a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/https boot.		
2. BIOS		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. O BIOS deve ser desenvolvido pelo mesmo fabricante do equipamento ou customizado por ele;		
2. O fabricante do equipamento, deverá ser totalmente responsável pelo BIOS fornecido juntamente com a placa mãe e pela atualização do mesmo, devendo promover as alterações que se façam necessárias e corrigir problemas ou danos causados ao equipamento em razão desse BIOS ou de procedimentos de atualização deste, (que poderão ser acompanhados pela empresa caso haja necessidade), durante o período de garantia do equipamento;		
3. BIOS em português ou inglês, desenvolvido em conformidade com a especificação UEFI 2.5 ou superior (http://www.uefi.org) e capturáveis pela aplicação de inventário SCCM (System Center Configuration Manager);		
4. O fabricante deverá comprovar a compatibilidade com o padrão UEFI através do site http:// www.uefi.org/members, na categoria membros;		
5. Deve ser do tipo flash EPROM, atualizável por software, compatível com o padrão plug-and-play;		
6. Deve ser lançado a partir de 2016 e entregue na versão mais atual disponibilizada pelo fabricante;		
7. Deve ter suporte a ACPI, ou tecnologia superior;		
8. Deve ser desenvolvido de acordo com o padrão de segurança NIST 800-147 ou ISO/IEC 19678:2015, para garantir a integridade do BIOS;		
9. Deve possuir recursos de controle de permissão através de senhas, sendo uma para inicializar o computador e outra para acesso e alterações das configurações do BIOS;		
10. Deve possuir software embarcado no BIOS com funções de diagnóstico de problemas, e gerenciamento com as seguintes características: 1. Permitir o teste do equipamento, com independência do sistema operacional instalado, o software de diagnóstico deve ser capaz de ser executado (inicializado) a partir da UEFI (Unified /Extensible Firmware Interface) ou do Firmware do equipamento através do acionamento de tecla função (F1...F12); 2. O software de diagnóstico deverá ser capaz de informar, através de tela gráfica: O fabricante e modelo do equipamento, processador, memória RAM, firmware, e capacidade do disco rígido;		
11. Deve possuir ferramenta que possibilite realizar a formatação definitiva dos dispositivos de armazenamento conectados ao equipamento, desenvolvida em acordo com o padrão de segurança NIST 800-88 ou ISO/IEC 27040:2015. Caso esta ferramenta não seja nativa do BIOS, deverá ser oficialmente homologada pelo fabricante do equipamento;		
12. Deve possuir opção para exportar/importar configurações. No caso de ferramenta externa fornecida para atender esse item, a mesma deve ser disponibilizada no web site de suporte do fabricante, em conjunto com outras ferramentas relacionadas e homologadas para o modelo do equipamento;		
13. Deve oferecer a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela CONTRATANTE;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
14. Deve possuir campo não editável com o número de série do equipamento gravado em memória não volátil e campo editável que permita inserir identificação customizada (identidade patrimonial com pelo menos 10 caracteres). Serão aceitos BIOS com reprogramação via software desde que estes estejam devidamente licenciados para o equipamento e disponibilizados para download no web site de suporte do fabricante;		
15. Deverá permitir o gerenciamento remoto do microcomputador mesmo desligado, desde que energizado pela rede elétrica e conectado localmente à rede de dados, permitindo ligar e desligar o microcomputador remotamente, com controle de acesso, e com possibilidade de definir horários programados; 1. Deve permitir acesso remoto através da rede ao POST (procedimento de inicialização) e BIOS para leitura e gravação, mesmo com o equipamento desligado; 2. Deverá permitir acesso remoto ao sistema operacional e processo de inicialização do microcomputador através de interface gráfica, com controle remoto do mouse e teclado (KVM remoto), independente do suporte de aplicações locais ou estado do sistema operacional; 3. Possuir a capacidade de inventário remoto de Hardware mesmo com o equipamento desligado.		
3. PROCESSADOR		
1. O processador ofertado, deverá possuir minimamente 8 (oito) núcleos e 16 (dezesseis) threads de processamento, podendo atingir frequência de operação interna de até 5.4 GHz em modo turbo, no mínimo;		
2. Em caso de processadores com arquitetura de computação heterogênea (big.LITTLE), só serão contabilizados os cores voltados para performance, na contagem mínima de núcleos, threads e ciclos de clock base (MHz);		
3. Memória cache total de, no mínimo, 32MB;		
4. O conjunto chipset e processador deve ser indicado por seu fabricante como destinado para uso em WorkStations;		
5. O processador deverá pertencer à última geração disponível utilizada pelo fabricante do equipamento, com desempenho mínimo de 41.800 (quarenta e um mil e oitocentos) pontos, considerando o uso pleno de todos os núcleos e sem a aplicação de configurações específicas para aumento ou modificação de desempenho, como "overclock", "undervoltage", "overvoltage" ou quaisquer outras que não estejam em conformidade com os padrões definidos pelo fabricante; 1. O desempenho será comprovado por intermédio de resultados de BenchMark, disponíveis em: http://www.cpubenchmark.net/cpu_list.php; 2. Será admitida uma margem de tolerância de 2% (dois por cento) do desempenho mínimo exigido.		
6. Deve possuir tecnologia de controle dinâmico de frequência do processador para núcleos individuais e ou múltiplos núcleos;		
7. Deve possuir controlador com suporte à memória RAM do tipoDDR5-4400 MT/s, ou superior;		
8. Deverá possuir tecnologia de fabricação de 10 nm (dez nanômetros) ou inferior;		
9. TDP(Thermal Design Power) típico de 65W, e máximo de 220W, declarado pelo fabricante;		
10. Deve possuir instruções do padrão AVX 2.0, ou superior;		
11. Deve possuir instruções do padrão SSE4.1/4.2, ou superior;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
12. Deve possuir instruções que implementem extensões de virtualização de hardware;	□	
13. Deve possuir instruções AES-NI embutidas;	□	
14. O proponente deverá declarar em sua proposta comercial o modelo do processador ofertado.	□	
4. MEMÓRIA RAM		
1. Deverá possuir, no mínimo, 32 (trinta e dois) Gb de memória RAM instalados, do tipo ECC (Error Correcting Code), com capacidade de expansão mínima de 128 (cento e vinte e oito) Gb;	□	
2. Deverá ser do tipo DDR-5 SODIMM ou superior e possuir, no mínimo, 4.400 MT/s de velocidade de comunicação com o barramento principal;	□	
3. A implementação do total de memória RAM deve utilizar 2 (dois) módulos, em modo dual channel;	□	
4. A memória ofertada, deverá possuir as melhores especificações possíveis dentre as disponíveis para o equipamento proposto;	□	
5. Os módulos devem ser instalados durante o processo de manufatura do computador, e homologados como parte do equipamento, inclusive estando cobertos pela garantia e suporte como descrito no Termo de Referência.	□	
5. UNIDADES DE ARMAZENAMENTO		
1. Deve possuir, no mínimo, 1 (uma) unidade padrão tipo Solid State Drive (SSD) interna instalada do tipo M.2, na capacidade mínima de 256Gb e velocidade mínima de gravação de 1.200MB/s;	□	
2. Deve utilizar interface tipo M.2 PCIe 4.0, com o protocolo NVMe, ou superior;	□	
3. Deve possuir, no mínimo, 1 (uma) unidade secundária de disco rígido (HDD) interna instalada, na capacidade mínima de 1Tb e velocidade de rotação mínima de 7.200RPM; 1. Deve utilizar interface Serial ATA III 600, ou superior; 2. Deve ter capacidade de armazenamento de 1 TB, no mínimo;	□	
4. As unidades devem ser instaladas durante o processo de manufatura do computador, e homologadas como parte do equipamento, inclusive estando cobertas pela garantia e suporte como descrito no Termo de Referência.	□	
6. INTERFACES DE REDE		
1. Deve possuir, no mínimo, 1 (uma) interface de rede RJ45 compatível com os padrões 10, 100 e 1000 Mbps, autosense, full-duplex e plug-and-play, configurável totalmente por software e com função wake-on-lan instalada e em funcionamento;	□	
2. A controladora ethernet, deverá ser do tipo "onboard", e suportar recurso WOL (Wake On LAN);	□	
3. Deve possuir, no mínimo, 01 (uma) interface de rede sem fios no padrão Wi-Fi 6 (802.11 B/G/N/AX), com velocidade de até 1.73Gbps, Tecnologia MU-MIMO, banda dupla em 2.4Ghz e 5Ghz, e suporte a Bluetooth 5.0 ou superior;	□	

DESCRIÇÃO	PARECER	OBSERVAÇÕES
4. As controladoras Wi-Fi e Bluetooth, deverão estar em um único cartão M.2, placa PCIe , conectado em slot específico na placa mãe, ou soldadas diretamente na mesma, “onboard”;		
5. No caso de cartão M.2 ou placa PCIe, o hardware deve ser instalado durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência.		
6. As interfaces Wireless ofertadas devem possuir, na data da entrega da proposta, homologação junto à ANATEL com certificado disponível publicamente no endereço eletrônico desta agência, conforme a Resolução n.º 242 de 30 de novembro de 2000.		
7. CONECTIVIDADE		
1. Deverá possuir no mínimo 2 (duas) portas USB 3.2, do tipo A, localizadas na parte frontal do gabinete;		
2. Deverá possuir no mínimo 4 (quatro) portas USB 3.2, do tipo A, localizadas na parte traseira do gabinete;		
3. Possuir 1 (uma) porta USB 3.2 Tipo C;		
4. Não serão aceitas portas USB instaladas adicionalmente como placas PCI ou adaptadores. As portas devem fazer parte do projeto original da placa mãe do equipamento proposto;		
5. Deverá possuir leitor de cartões de memória integrado com suporte à cartões SD (Secure Digital).		
8. CONTROLADORA DE VÍDEO		
1. Deve possuir controladora com no mínimo 8 (oito) GB de memória GDDR6 dedicada, com largura de banda para a VRAM de 128 bits, suportando gráficos 3D/2D e DirectX 12, ou superior;		
2. Deve suportar Pixel Shader 3.0, ou superior;		
3. Deve suportar OpenGL 4.6, ou superior;		
4. Deve suportar Vulkan 1.2, ou superior;		
5. Deve suportar HDCP ou HDR;		
6. Deve suportar a resolução mínima de 3840 X 2160 @ 60 Hz;		
7. Tipo de bus PCI Express x8;		
8. Possuir, no mínimo, um total de 3 (três) portas de vídeo, suportando a utilização de até 2 (dois) monitores auxiliares simultânea e independentemente do monitor principal; 1. Os tipos das portas de vídeo supracitadas devem ser, no mínimo, HDMI 1.4 e/ou DisplayPort 1.2; 2. Serão aceitos adaptadores para atender todas as portas supra citadas, em detrimento das portas diferenciadas e disponíveis na controladora de vídeo externa;		
9. A controladora de vídeo proposta deverá alcançar pontuação mínima de desempenho de 10.500 pontos aferidos pelo site https://www.videocardbenchmark.net/gpu_list.php;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
10. Deverá ser homologada pelo fabricante, com comprovação através de catálogo do equipamento;		
11. Deve suportar, no mínimo, o uso de 3 (três) monitores simultânea e independentemente.		
9. CONTROLADORA DE SOM E MULTIMÍDIA		
1. O equipamento deve possuir uma controladora de som integrada, do tipo "onboard", padrão "High Definition Audio";		
2. Deve possuir, no mínimo, uma interface de som com 1 (um) conector combinado para fone de ouvido e microfone, de 3,5 MM, na parte frontal do gabinete;		
3. Deve possuir, no mínimo, 1 alto-falante interno, com 2 Watts RMS de potência, compatível com a controladora de som.		
10. TECLADO		
1. A marca do teclado deverá ser igual à do fabricante do equipamento ofertado;		
2. Deve ser USB, no idioma padrão, Português (Brasil), ABNT-II;		
3. Deve possuir teclas multimídia, com no mínimo, aumentar e diminuir volume, além do mute;		
4. Admite-se a utilização de teclas de função (F1...F12), para tais ações;		
5. Deve possuir teclado numérico integrado;		
6. Deve possuir, no mínimo, LEDs indicadores de estado das teclas capslock e numlock;		
7. Deve possuir ajuste de inclinação;		
8. Deve ser em gradações das cores preto ou prata;		
9. Não será aceito teclado com cabo retrátil;		
10. Não será aceito teclado wireless/bluetooth (sem fio).		
11. MOUSE		
1. Mouse óptico com conexão USB, de 3 (três) botões e sistema de rolagem, com formato ergonômico e com design ambidestro, devendo possuir resolução mínima por hardware de 1.000 dpi;		
2. Deve ser da mesma marca do fabricante do equipamento ofertado;		
3. Deve ser em gradações das cores preto ou prata;		
4. Deve acompanhar mousepad ergonômico com apoio em gel para o pulso, do mesmo fabricante do equipamento;		
5. O mouse ou teclado ofertados, deve possuir um leitor biométrico, certificado para trabalhar com a autenticação do Microsoft Windows Hello.		
12. FORMATO DE MANUFATURA E FONTE DE ALIMENTAÇÃO		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. O computador deve ser produzido no formato WorkStation Torre;		
2. Gabinete com volume mínimo de 19 (dezenove) e máximo de 27 (vinte e sete) litros e construído de material reforçado;		
3. Deverá possuir botão de liga/desliga na parte frontal do gabinete, com LED de indicação de que o equipamento está energizado, em local visível e acessível do gabinete.		
4. Deverá possuir pelo menos 2 (duas) baias internas para discos rígidos de 2,5 ou 3,5 polegadas;		
5. O gabinete deverá possuir um slot específico para conexão de tranca física de segurança do tipo Kensington ou similar. Deve ser entregue junto com o equipamento, a trava de forma a impedir a abertura do equipamento;		
6. O material do gabinete deve ser de estrutura livre de BFR e outros materiais tóxicos e/ou antiecológicos;		
7. O gabinete deve possuir acabamento interno composto de superfícies não cortantes;		
8. Deverá oferecer a possibilidade de, se demandado, aplicar logo oficial da contratante, com área de impressão mínima de 3,00 x 2,72 cm, através de sistema de gravação direta como aplicação em Laser, não sendo admitido o uso de adesivagem, serigrafias ou adaptações semelhantes. A gravação deverá ser feita apenas no gabinete da workstation visando medidas de segurança;		
9. Deve ser fornecido com fonte de alimentação interna do mesmo fabricante e compatível com o equipamento, com potência mínima de 500W (quinhentos Watts), suficiente para suportar todos os dispositivos internos (placa mãe, interfaces, unidades de armazenamento, memória RAM e demais componentes e periféricos);		
10. A fonte de alimentação deve possuir eficiência igual ou superior a 92%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);		
11. A fonte deve aceitar tensão de entrada 110 e 220 Volts, de forma automática;		
12. Deverá ser fornecido um cabo de alimentação Y (para CPU e monitor), com conexão à rede elétrica no padrão NBR 14136:2002.		
13. SISTEMA OPERACIONAL E SOFTWARES COMPLEMENTARES		
1. Deve acompanhar o equipamento licença OEM do sistema operacional Microsoft Windows 11 Professional de 64 bits, ou versão mais recente, no idioma Português Brasil;		
2. O equipamento deve ser entregue com o Windows 11 Professional 64 bits, ou versão mais recente instalado;		
3. Cada equipamento deve incluir uma licença específica de software dedicado para:		
4. Controle: Funções de bloqueio e desbloqueio remoto.		
5. Inventário: Gestão detalhada de hardware e software do equipamento.		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
6. Rastreabilidade: Recursos de geolocalização integrados.		
7. O software de controle e monitoramento deve possuir a funcionalidade de persistência, garantindo a preservação do cliente do software e de suas funcionalidades, mesmo após a perda total de dados ou formatação do disco rígido, utilizando tecnologia de residência em firmware;		
8. A interface de controle e monitoramento dos equipamentos deve ser baseada em nuvem, sem a necessidade de licenças adicionais além daquelas atribuídas a cada equipamento;		
9. A licença do software dedicado deve ter cobertura mínima equivalente ao período de garantia do equipamento, de 60 (sessenta) meses, e deve estar plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;		
10. Os equipamentos poderão ser entregues com imagem de instalação do sistema operacional e softwares customizada e previamente fornecida pela CONTRATANTE, conforme especificado no Termo de Referência.		
14. COMPATIBILIDADE		
1. Deve ser apresentado o certificado de compatibilidade dos equipamentos com o sistema operacional Windows 11 x64 obtido junto à Microsoft. Deverá constar no Microsoft Hardware Compatibility List (HCL) para o modelo e sistema operacional exigido e ofertado;		
2. A comprovação da compatibilidade será efetuada pela apresentação do documento Hardware Compatibility Test Report emitido especificamente para o modelo no sistema operacional ofertado, ou pela indicação no site da Microsoft;		
3. O equipamento deverá possuir certificado de homologação comprovando a compatibilidade do mesmo com, pelo menos, uma distribuição de Linux. A comprovação da compatibilidade será efetuada pela apresentação de documento emitido especificamente para o modelo ofertado;		
4. O equipamento, na configuração ofertada, deve possuir certificado de conformidade contra incidentes elétricos e de combustão dos materiais (IEC/EN 60950) e de imunidade eletromagnética (IEC/EN 61000), comprovado através de certificados ou do relatório de avaliação de conformidade nos moldes da portaria 170/2012 vigente do INMETRO, ou similar Internacional;		
15. OUTROS REQUISITOS		
1. Todas as partes do equipamento (gabinete, base, teclado e mouse) devem ter coloração neutra em gradações de preto ou prata, mantendo o padrão e cor;		
2. Equipamento deverá ser novo, partes e peças, de primeiro uso, que deverão ser acondicionados em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;		
3. Todos os equipamentos deverão ser entregues idênticos, ou seja, todos os componentes externos e internos deverão ter os mesmos modelo e marca;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
4. Informar marca e modelo dos componentes utilizados na solução e apresentar prospecto com as características técnicas do equipamento e da placa mãe, processador, memórias, interfaces de rede, fonte de alimentação, unidade de armazenamento, mouse e teclado, incluindo especificação de marca, modelo, e outros elementos que de forma inequívoca identifiquem e constatem as configurações, possíveis expansões e upgrades, comprovando-os através de certificados, manuais técnicos, folders e demais literaturas técnicas editadas pelos fabricantes;		
5. O equipamento proposto deverá estar em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;		
6. Não serão aceitos produtos descontinuados por seus fabricantes, não devendo constar em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não poderão ter previsão de descontinuidade de fornecimento, suporte ou vida;		.
7. O equipamento em pleno funcionamento deve atender à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que deverá acompanhar a proposta;		
8. Deverá ter compatibilidade eletromagnética e de radiofrequência IEC 61000 comprovado através de certificado ou relatório de avaliação de conformidade emitido por órgão credenciado pelo INMETRO ou internacional equivalente;		
9. Deverá ter compatibilidade com o padrão DMI 2.0 (Desktop Management Interface) ou mais recente da DMTF (Desktop Management Task Force), comprovado através de documentação expedida pelo fabricante do equipamento ou comprovação de que o fabricante do equipamento é membro do consórcio DMTF listado em uma das categorias BOARD ou LEADERSHIP;		
10. Deverá ter compatibilidade com a norma TPM Specification Version 2.0 especificadas pelo TCG (Trsted Computing Group), devendo o fabricante ser membro de uma das categorias listadas no site http://www.trustedcomputinggroup.org/about_tcg/tcg_members;		
11. Deverá ter compatibilidade com EPEAT na nova categoria Bronze, comprovada através de atestados ou certidões que mostrem que o equipamento é aderente ao padrão de eficiência energética EPEAT, emitido por instituto credenciado junto ao INMETRO ou equivalente internacional;		
12. Será admitida como comprovação também, a indicação que o equipamento consta no site www.epeat.net na nova categoria Bronze;		
13. Não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS (Restriction of Certain Hazardous Substances);		
14. Os equipamentos deverão pertencer à linha corporativa, não sendo aceitos equipamentos destinados ao uso da linha doméstica;		
15. A comprovação deverá ser apresentada junto com a proposta;		
16. Não serão aceitos equipamentos que contenham lacres de violação de garantia por abertura, que inviabilizem a inspeção dos componentes à qualquer momento;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
17. **Garantia de 60 (sessenta) meses on-site**, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo.	⚠	Necessário diligências.
SUBITEM 2.2: MONITOR PRINCIPAL 27 POL WIDESCREEN		
1. TELA		
1. Deve ser de tecnologia IPS (In-Plane Switching) ou VA (Vertical Alignment);		
2. Tamanho de 27 polegadas widescreen, com variação inferior a 3%;		
3. Resolução mínima de 2560x1440 a 60Hz, 16 milhões de cores;		
4. Ângulo de visão mínimo de 170° horizontal e vertical;		
5. Deve possuir controle digital de brilho, contraste e posicionamentos vertical e horizont**al.**		
2. INTERFACES		
1. Possuir, no mínimo, 2 (duas) portas de entrada de vídeo;		
2. Não importando os tipos de portas de entrada, deve acompanhar cabos que permitam conectar o monitor a equipamentos com portas de tipo HDMI 1.4 e DisplayPort 1.2;		
3. Serão aceitos adaptadores, em adicional aos cabos originais, para contemplar a possibilidade de conexão às portas de entrada solicitadas;		
4. O equipamento deve ter HUB USB 3.0 interno, com 1 (uma) porta USB para upstream a partir do PC;		
5. Deve possuir 4 (quatro) portas USB 3.0, sendo no mínimo 2 (duas) na lateral, na parte inferior ou na traseira do equipamento;		
6. Deve ter 1 (uma) porta combinada de 3,5mm para saída de fone de ouvido e entrada de microfone.		
3. MULTIMÍDIA		
1. O monitor deve possuir uma webcam, de no mínimo 5.0 megapixels;		
2. Deve incorporar microfone, com cancelamento de ruído, voltados para captar o som do usuário em frente ao monitor;		
3. Deve possuir 2 (dois) alto-falantes de 5W cada, integrados na parte frontal ou inferior do monitor.		
4. OUTROS REQUISITOS		
1. A cor deve ser predominantemente a mesma da cor ofertada no subitem **2.1 “MICROCOMPUTADOR Workstation”**;		
2. Possuir certificação de segurança UL ou IEC 60950;		
3. Possuir certificação de economia de energia EPA Energy Star, TCO 5.0 ou similar;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
4. Deve aceitar tensões de 110 e 220 Volts de forma automática;		
5. Deve acompanhar cabo de alimentação original do fabricante com conector de tomada elétrica no padrão brasileiro (NBR 14136:2002);		
6. O equipamento deverá vir acondicionado em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;		
7. Os equipamentos não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS - Restriction of Certain Hazardous Substances.		
8. O equipamento deve possuir interface de montagem no padrão VESA 100 x 100mm.		
9. Deverá possuir mecanismo físico para bloquear/obstruir a função da webcam;		
10. O equipamento proposto deverá estar em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;		
11. Não serão aceitos produtos descontinuados por seus fabricantes, não devendo constar em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não poderão ter previsão de descontinuidade de fornecimento, suporte ou vida;		
12. O equipamento em pleno funcionamento deve atender à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que deverá acompanhar a proposta;		
13. **Garantia de 60 (sessenta) meses on-site**, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo.		
SUBITEM 2.3: "MONITOR AUXILIAR 27 POL WIDESCREEN"		
1. TELA		
1. Deve ser de tecnologia IPS (In-Plane Switching) ou VA (Vertical Alignment);		
2. Tamanho de 27 polegadas widescreen, com variação inferior a 3%;		
3. Resolução mínima de 1920x1080 a 60Hz, 16 milhões de cores;		
4. Ângulo de visão mínimo de 170° horizontal e vertical;		
5. Deve possuir controle digital de brilho, contraste e posicionamentos vertical e horizontal;		
2. INTERFACES		
1. Possuir ao menos 2 (duas) portas de entrada de vídeo;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
2. Não importando os tipos de portas de entrada, deve acompanhar cabos que permitam conectar o monitor a equipamentos com portas de tipo HDMI 1.4 e DisplayPort; 1. Serão aceitos adaptadores, em adicional aos cabos originais, para contemplar a possibilidade de conexão às portas solicitadas no item acima.		
3. SUPORTE DE MONTAGEM		
1. O equipamento deve possuir interface de montagem no padrão VESA 100 x 100mm;		
2. O acessório deve possibilitar minimamente os seguintes movimentos do monitor: 1. Rotação de 90º; 2. Elevação de 10cm; 3. Panorâmica de 90º; 4. Inclinação de -5º a 20º;		
4. OUTROS REQUISITOS		
1. A cor deve ser predominantemente a mesma da cor ofertada no subitem **2.1 "MICROCOMPUTADOR Workstation"**;		
2. Possuir certificação de segurança UL ou IEC 60950;		
3. Possuir certificação de economia de energia EPA Energy Star, TCO 5.0 ou similar;		
4. Deve aceitar tensões de 110 e 220 Volts de forma automática;		
5. Deve acompanhar cabo de alimentação original do fabricante com conector de tomada elétrica no padrão brasileiro (NBR 14136:2002);		
6. O equipamento deverá vir acondicionado em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;		
7. Os equipamentos não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS - Restriction of Certain Hazardous Substances;		
8. **Garantia de 60 (sessenta) meses on-site**, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo.		

3. Conclusão

O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica **OPINA** pela aceitabilidade do produto ofertado.

É o parecer.

Manaus, 10 de julho de 2025.

FRANCISCO ELVISLÂNIO PEREIRA
Agente de apoio - Manutenção/Informática

WALESKA GRACIEME ANDRADE MARQUES DE OLIVEIRA
Agente Técnico - Analista de Banco de Dados

Documento assinado eletronicamente por **Francisco Elvislânio Pereira**, **Agente de Apoio - Administrativo**, em 10/07/2025, às 14:05, conforme art. 1º, III, "b", da Lei 11.419/2006.

Documento assinado eletronicamente por **Waleska Gracieme Andrade Marques de Oliveira**, **Agente Técnico - Analista de Banco de Dados**, em 10/07/2025, às 14:06, conforme art. 1º, III, "b", da Lei 11.419/2006.

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MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - CEP 69000-000 - Manaus - AM - www.mpam.mp.br

PARECER Nº 22.2025.SIET.1668772.2025.001317

PROCESSO DE COMPRA: 2025.001317 Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ SRP Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317
OBJETO: Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.

1. **Relatório**

Trata-se de pedido de compatibilização da proposta da empresa **POSITIVO TECNOLOGIA S/A (FILIAL)**, com novos documentos reenviados para cumprir diligências para o **ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"**, na fase de disputas do Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ, documentos1667843, 1667855 e 1667859, recebido no dia 9/7/2025.

2. **Da Análise**

2.1 Produto ofertado

Item	Descrição	Quantidade	Produto Ofertado
1	**ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"** **Marca/Modelo de Referência:** Lenovo ThinkPad T14 GEN 5, Dell Latitude 5450.	300	L**ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"** Positivo Master N8450 , Intel® Core™ Ultra 5 135U, 14", RAM 16Gb, SSD M.2 256Gb, Windows 11 Pro (64 bits) Português BR, Absolute + Mouse SM-6620

2.2 Análise comparativa

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. PLACA PRINCIPAL (PLACA MÃE)		
1. A placa mãe deve ser construída pelo próprio fabricante do microcomputador ou produzida sob a especificação do mesmo, não sendo aceito placas de livre comercialização no mercado, nem em regime de OEM;	□	
2. Deve possuir, no mínimo, 1 (um) slot para memória RAM, "do tipo DDR-5 SODIMM", permitindo a instalação de até 40 (quarenta) Gigabytes, 8 (oito) soldadas diretamente na placa e até 32 (trinta e dois) instaladas no slot. Admite-se 2 slots com 1 módulo de memória cada, como configuração superior, em substituição aos módulos soldados na placa principal;	□	
3. Deve suportar tecnologia Dual Channel de utilização de memória RAM;	□	
4. Deve possuir 1 (um) Socket M.2 para SSD SATA ou NVMe;	□	
5. Deve possuir 1 (um) Socket M.2 Para Cartões Wi-Fi/Bluetooth;	□	
6. Deve possuir recursos DASH 1.0 (Desktop and mobile Architecture for System Hardware), ou tecnologia minimamente equivalente;	□	
7. Deve ser compatível com Energy Star 7.0/7.1, ou tecnologias superiores;	⚠	**Não foi encontrado o certificado Energy Star para o item.**

DESCRIÇÃO	PARECER	OBSERVAÇÕES
8. Deve possuir capacidade de desligamento do vídeo e do disco rígido após tempo determinado pelo usuário, religamento por acionamento de teclado ou mouse, bem como função de economia de energia para monitor, placa mãe e unidades de armazenamento internas;		
9. Deve possuir chip TPM (Trusted Platform Module), versão 2.0, ou superior, soldado à placa principal, e destinado ao armazenamento de senhas, certificados digitais e chaves criptográficas em conformidade com as especificações do Trusted Computing Group;		
10. Deve possuir suporte a virtualização por hardware;		
11. Deve possuir suporte a implementação de extensões de virtualização de I/O por hardware;		
12. Deve possuir suporte a aceleração de segurança AES no hardware;		
13. Deve possuir suporte à tecnologia de acesso remoto out-of-band embutida no hardware;		
14. Deve possuir controle da velocidade de rotação do cooler do processador de forma automática, de acordo com a variação de temperatura da CPU;		
15. Deve suportar boot por pendrive ou disco conectado a uma porta USB 3.1 ou 3.2;		
16. Deve suportar a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/https boot.		**Não foi encontrado na documentação enviada o que assegure o suporte ao boot por http/https.**
2. BIOS		
1. O BIOS deve ser desenvolvido pelo mesmo fabricante do equipamento ou customizado por ele;		
2. O fabricante do equipamento, deverá ser totalmente responsável pelo BIOS fornecido juntamente com a placa mãe e pela atualização do mesmo, devendo promover as alterações que se façam necessárias e corrigir problemas ou danos causados ao equipamento em razão desse BIOS ou de procedimentos de atualização deste, (que poderão ser acompanhados pela empresa caso haja necessidade), durante o período de garantia do equipamento;		
3. BIOS em português ou inglês, desenvolvido em conformidade com a especificação UEFI 2.5 ou superior (http://www.uefi.org) e capturáveis pela aplicação de inventário SCCM (System Center Configuration Manager);		
4. O fabricante deverá comprovar a compatibilidade com o padrão UEFI através do site http:// www.uefi.org/members, na categoria membros;		
5. Deve ser do tipo flash EPROM, atualizável por software, compatível com o padrão plug-and-play;		
6. Deve ser lançado a partir de 2016 e entregue na versão mais atual disponibilizada pelo fabricante;		
7. Deve ter suporte a ACPI, ou tecnologia superior;		
8. Deve ser desenvolvido de acordo com o padrão de segurança NIST 800-147 ou ISO/IEC 19678:2015, para garantir a integridade do BIOS;		
9. Deve possuir recursos de controle de permissão através de senhas, sendo uma para inicializar o computador e outra para acesso e alterações das configurações do BIOS;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
10. Deve possuir software embarcado no BIOS com funções de diagnóstico de problemas, e gerenciamento com as seguintes características: 1. Permitir o teste do equipamento, com independência do sistema operacional instalado, o software de diagnóstico deve ser capaz de ser executado (inicializado) a partir da UEFI (Unified /Extensible Firmware Interface) ou do Firmware do equipamento através do acionamento de tecla função (F1...F12); 2. O software de diagnóstico deverá ser capaz de informar, através de tela gráfica: O fabricante e modelo do equipamento, processador, memória RAM, firmware, e capacidade do disco rígido;		
11. Deve possuir ferramenta que possibilite realizar a formatação definitiva dos dispositivos de armazenamento conectados ao equipamento, desenvolvida em acordo com o padrão de segurança NIST 800-88 ou ISO/IEC 27040:2015. Caso esta ferramenta não seja nativa do BIOS, deverá ser oficialmente homologada pelo fabricante do equipamento;		
12. Deve possuir opção para exportar/importar configurações. No caso de ferramenta externa fornecida para atender esse item, a mesma deve ser disponibilizada no web site de suporte do fabricante, em conjunto com outras ferramentas relacionadas e homologadas para o modelo do equipamento;	⚠	**Não foi possível verificar o atendimento deste requisito.**
13. Deve oferecer a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela **CONTRATANTE**;		
14. Deve possuir campo não editável com o número de série do equipamento gravado em memória não volátil e campo editável que permita inserir identificação customizada (identidade patrimonial com pelo menos 10 caracteres). Serão aceitos BIOS com reprogramação via software desde que estes estejam devidamente licenciados para o equipamento e disponibilizados para download no web site de suporte do fabricante;		
15. Deverá permitir o gerenciamento remoto do microcomputador mesmo desligado, desde que energizado pela rede elétrica e conectado localmente à rede de dados, permitindo ligar e desligar o microcomputador remotamente, com controle de acesso, e com possibilidade de definir horários programados; 1. Deve permitir acesso remoto através da rede ao POST (procedimento de inicialização) e BIOS para leitura e gravação, mesmo com o equipamento desligado; 2. Deverá permitir acesso remoto ao sistema operacional e processo de inicialização do microcomputador através de interface gráfica, com controle remoto do mouse e teclado (KVM remoto), independente do suporte de aplicações locais ou estado do sistema operacional; 3. Possuir a capacidade de inventário remoto de Hardware mesmo com o equipamento desligado.		
3. PROCESSADOR		
1. Deverá possuir, 2 (dois) núcleos, no mínimo, e 12 (doze) threads de processamento com frequência de operação interna básica de, no mínimo, 1.6 GHz;		
2. Em caso de processadores com arquitetura de computação heterogênea (big.LITTLE), só serão contabilizados os cores voltados para performance, na contagem mínima de núcleos e ciclos de clock base (MHz);		
3. Memória cache total de, no mínimo, 12MB;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
4. O processador ofertado deverá ser Intel Core Ultra 5, "de 1ª geração", ou AMD Ryzen 5 PRO, "serie 8000", admitindo-se famílias ou gerações mais novas;		
5. O processador deverá ser da última geração disponível utilizada pelo fabricante do equipamento, **com desempenho mínimo de 17.000 (dezessete mil) pontos**, considerando o uso pleno de todos os núcleos e sem a aplicação de configurações específicas para aumento ou modificação de desempenho, como "overclock", "undervoltage", "overvoltage" ou quaisquer outras que não estejam em conformidade com os padrões definidos pelo fabricante; 1. O desempenho será comprovado por intermédio de resultados de BenchMark, disponíveis em: http://www.cpubenchmark.net/cpu_list.php. 2. Será admitida uma margem de tolerância de 2% (dois por cento) do desempenho mínimo exigido.		
6. Deve possuir tecnologia de controle dinâmico de frequência do processador para núcleos individuais e ou múltiplos núcleos, podendo atingir até 4.4 GHz, no mínimo;		
7. Deve possuir controlador com suporte à memória RAM do tipo DDR5-5600 MT/s, ou superior;		
8. Deverá possuir tecnologia de fabricação de 7 nm (sete nanômetros) ou inferior;		
9. TDP(Thermal Design Power) mínimo de 12W, e máximo de 58W, declarado pelo fabricante;		
10. Deve possuir instruções do padrão AVX 2.0, ou superior;		
11. Deve possuir instruções do padrão SSE4.1/4.2, ou superior;		
12. Deve possuir instruções que implementem extensões de virtualização de hardware;		
13. Deve possuir instruções AES-NI embutidas;		
14. O proponente deverá declarar em sua proposta comercial o modelo do processador ofertado.		
4. MEMÓRIA RAM		
1. Deverá possuir, no mínimo, 16 (dezesseis) Gb de memória RAM instalados, com capacidade de expansão mínima de 40 (quarenta) Gb;	⚠	**Impreciso.** **Declara em sua proposta que o laptop ofertado tem capacidade de expansão até 64Gb. Contudo, no Item Placa Mãe, subitem 2, declara que possui dois slots para memória RAM, permitindo instalação até 40Gb.**
2. Deverá ser do tipo DDR-5/LPDDR-5 SODIMM ou superior e possuir no mínimo, 5600 MT/s de velocidade de comunicação com o barramento principal;		
3. A implementação do total de memória RAM deve utilizar 1 (um) módulo, de 8 (oito) GB, e mais 8 (oito) GB soldada diretamente à placa principal, utilizando tecnologia dual channel; 1. Admite-se que ambos os módulos sejam do tipo SODIMM, e sejam removíveis como configuração superior a mencionada acima;		
4. O(s) módulo(s) removível(eis) deve(m) ser instalado(s) durante o processo de manufatura do computador, e homologado(s) como parte do equipamento, inclusive estando coberto(s) pela garantia e suporte como descrito no Termo de Referência.		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
5. UNIDADE DE ARMAZENAMENTO		
1. Deve possuir, no mínimo, 1 (uma) unidade padrão tipo Solid State Drive (SSD) interna instalada do tipo M.2, na capacidade mínima de 256 GB e velocidade mínima de gravação de 1.200MB/s;		
2. Deve utilizar interface tipo M.2 PCIe 4.0, com o protocolo NVMe, ou superior;		
3. Deve ser instalada durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência.		
6. CONECTIVIDADE		
1. Deverá possuir no mínimo 4 (quatro) portas USB; 1. Do total de portas, no mínimo 2 (duas) devem ser do tipo USB 3.2 tipo A; 2. No mínimo 1 (uma) deve ser do tipo USB 3.2 Tipo C ou Thunderbolt;		
2. Possuir, no mínimo, 1 (uma) porta de vídeo adicional, suportando a utilização de 1 (um) monitor auxiliar simultânea e independentemente da tela integrada;		
3. O tipo da porta auxiliar de vídeo supracitada deve ser HDMI 2.0 ou DisplayPort 1.2. Em caso de versões miniaturizadas destas, adaptadores revertendo para elas devem ser fornecidos sem custo adicional.		
7. INTERFACES DE REDE		
1. Deve possuir, no mínimo, 1 (uma) interface de rede RJ45 compatível com os padrões 10, 100 e 1000 Mbps, autosense, full-duplex e plug-and-play, configurável totalmente por software e com função Wake On Lan instalada e em funcionamento;		
2. A controladora ethernet, deverá ser do tipo "onboard", e suportar recurso WOL (Wake On LAN);		
3. Deve possuir, no mínimo, 1 (uma) interface de rede sem fios no padrão Wi-Fi 6 (802.11 B/G/N/AX), com velocidade de até 1.73Gbps, Tecnologia MU-MIMO, banda dupla em 2.4Ghz e 5Ghz, e suporte a Bluetooth 5.3 ou superior;		
4. As controladoras Wi-Fi e Bluetooth, deverão estar em um único cartão M.2, conectado em slot específico na placa mãe, que deve ser instalado durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência;		
5. A interface Wireless ofertada deve possuir, na data da entrega da proposta, homologação junto à **ANATEL** com certificado disponível publicamente no endereço eletrônico desta agência, conforme a Resolução n.º 242 de 30 de novembro de 2000.		
8. CONTROLADORA DE VÍDEO		
1. Deve possuir controlador 3D/2D com suporte a DirectX 12, ou superior;		
2. Deve suportar Pixel Shader 3.0, ou superior;		
3. Deve suportar OpenGL 4.5, ou superior;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
4. Deve suportar HDCP ou HDR;		
5. Deve suportar a resolução mínima de 1920 X 1080 @ 60 Hz;		
6. Deve possuir tecnologia de controle dinâmico de frequência, podendo atingir, no mínimo, 1.35GHz;		
7. Deve suportar, no mínimo, o uso de 3 (três) monitores simultânea e independentemente.		
9. CONTROLADORA DE SOM E MULTIMÍDIA		
1. O equipamento deve possuir uma controladora de som integrada, do tipo "onboard";		
2. Deve possuir, no mínimo, uma interface de som com 1 (um) conector combinado para fone de ouvido e microfone, de 3,5 mm;		
3. Deve possuir, no mínimo, 2 alto-falantes internos, com 2 Watt RMS de potência cada, compatíveis com a controladora de som;		
4. Deve incorporar microfone(s), com cancelamento de ruído, voltados para captar o som do usuário em frente ao computador.		
10. TECLADO		
1. Deve ser integrado e retroiluminado no idioma padrão, português (Brasil), ABNT-II;		
2. Deve possuir teclas multimídia, com no mínimo, aumentar e diminuir volume, além do mute; 1. Admite-se a utilização de teclas de função (F1...F12), para tais ações.		
11. DISPOSITIVOS APONTADORES		
1. Deve possuir um touchpad integrado, com dois botões, e área útil de 4 (quatro) pol², no mínimo; 1. Admite-se que os botões sejam integrados, como cliques diretos na parte inferior do touchpad;		
2. Deve suportar gestos de rolagem, ou possuir teclas, área ou dispositivo dedicado;		
3. Deve acompanhar um mouse adicional, da mesma cor e do mesmo fabricante do equipamento ofertado; 1. Deve ser óptico, com conexão USB, com 3 (três) botões e sistema de rolagem de página, com formato ergonômico e com design ambidestro, devendo possuir resolução mínima por hardware de 800 dpi.		
12. TELA INTEGRADA		
1. Deve ser de tecnologia IPS (In-Plane Switching) ou VA (Vertical Alignment);		
2. Tamanho de 14 polegadas widescreen, no mínimo;		
3. Deve suportar, no mínimo, 16 milhões de cores;		
4. Resolução mínima de 1920x1080@60Hz;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
5. Ângulo de visão mínimo de 85° horizontal e vertical;	⚠	**Não foi possível verificar na documentação enviada as informações contidas na proposta.**
6. Deve possuir brilho mínimo de 300 cd/m².	▯	
13. WEBCAM		
1. O equipamento deve possuir uma webcam integrada, de 1.3 megapixels, com resolução de vídeo FHD, no mínimo, não sendo aceita solução externa;	▯	
2. Deve possuir mecanismo de bloqueio por tampa, ou desativação mecânica, como solução de privacidade, também integrada ao equipamento.	▯	
14. FORMATO DE MANUFATURA E FONTE DE ALIMENTAÇÃO		
1. O equipamento deve ser produzido no formato laptop.	▯	
2. O peso total do equipamento sem a fonte, não deve exceder os 1.6 Kg (um quilo e seiscentos gramas);	▯	
3. A dobradiça do equipamento, deve ser construída em metal, e com articulação de 180º;	▯	
4. O material do gabinete deve ser de estrutura livre de BFR e outros materiais tóxicos e/ou antiecológicos;	▯	
5. Deve possuir botão de liga/desliga e luz de indicação de computador ligado (power-on) em local visível e acessível do computador, quando ele estiver aberto;	▯	
6. Deve possuir leitor biométrico integrado, em área acessível, quando o notebook estiver aberto;	▯	
7. Deve oferecer a possibilidade de, se demandado, aplicar logo oficial da CONTRATANTE, com área de impressão mínima de 3,00 x 2,72 cm, através de sistema de gravação direta como aplicação em laser, não sendo admitido o uso de adesivagem, serigrafias ou adaptações semelhantes. A gravação deverá ser feita apenas na parte inferior do laptop, visando medidas de segurança;	▯	
8. O computador deverá possuir fenda de encaixe padrão "Kensington" ou “Noble Wedge” para utilização de cabo de aço do mesmo tipo;	▯	
9. Deve ser fornecido com fonte de carregamento/alimentação do mesmo fabricante e compatível com o equipamento, com potência suficiente para suportar todos os dispositivos internos em suas configurações máximas permitidas, além de possibilitar o pleno carregamento da bateria do equipamento;	▯	
10. A fonte de alimentação deve possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);	⚠	**Não foi apresentado nenhum certificado/teste para comprovar a eficiência da fonte ofertada.**
11. A fonte deve possuir tensão de entrada 110 e 220 Volts de forma automática;	▯	
12. A fonte deve fornecer uma alimentação mínima de 65W para o equipamento;	▯	
13. Os plugues de conexão à rede elétrica devem seguir o padrão NBR 14136:2002.	▯	

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15. BATERIA		
1. Deve ser integrada ao corpo do equipamento, (não destacável);		
2. Potência mínima de 39 wh;		
3. Deve possuir no mínimo 3 (três) células de carregamento; 1. Deve ser capaz de manter o equipamento funcionando ininterruptamente por no mínimo 11 (onze) horas, conforme o padrão de teste do aplicativo MobileMark 2018.		
16. SISTEMA OPERACIONAL E SOFTWARES COMPLEMENTARES		
1. Deve acompanhar o equipamento licença OEM do sistema operacional Microsoft Windows 11 Professional de 64 bits, ou versão mais recente, no idioma Português Brasil;		
2. O equipamento deve ser entregue com o Windows 11 Professional 64 bits, ou versão mais recente instalado;		
3. Cada equipamento deve incluir uma licença específica de software dedicado para: • Controle: Funções de bloqueio e desbloqueio remoto. • Inventário: Gestão detalhada de hardware e software do equipamento. • Rastreabilidade: Recursos de geolocalização integrados.		
4. O software de controle e monitoramento deve possuir a funcionalidade de persistência, garantindo a preservação do cliente do software e de suas funcionalidades, mesmo após a perda total de dados ou formatação do disco rígido, utilizando tecnologia de residência em firmware;		
5. A interface de controle e monitoramento dos equipamentos deve ser baseada em nuvem, sem a necessidade de licenças adicionais além daquelas atribuídas a cada equipamento;		
6. A licença do software dedicado deve ter cobertura mínima equivalente ao período de garantia do equipamento, de 60 (sessenta) meses, e deve estar plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;		
7. Os equipamentos poderão ser entregues com imagem de instalação do sistema operacional e softwares customizada e previamente fornecida pela CONTRATANTE, conforme especificado no Termo de Referência.		
17. COMPATIBILIDADE		
1. Deve ser apresentado o certificado de compatibilidade dos equipamentos com o sistema operacional Windows 11 x64 obtido junto à Microsoft. Deverá constar no Microsoft Hardware Compatibility List (HCL) para o sistema operacional exigido e ofertado. 1. A comprovação da compatibilidade será efetuada pela apresentação do documento Hardware Compatibility Test Report emitido especificamente para o modelo no sistema operacional ofertado, ou pela indicação no site da Microsoft;		
2. O equipamento deverá possuir certificado de homologação comprovando a compatibilidade do mesmo com, pelo menos, uma distribuição de Linux. A comprovação da compatibilidade será efetuada pela apresentação de documento emitido especificamente para o modelo ofertado;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
3. O equipamento, na configuração ofertada, deve possuir certificado de conformidade contra incidentes elétricos e de combustão dos materiais (IEC/EN 60950) e de imunidade eletromagnética (IEC/EN 61000), comprovado através de certificados ou do relatório de avaliação de conformidade nos moldes da portaria 170/2012 vigente do INMETRO, ou similar Internacional.		
18. OUTROS REQUISITOS		
1. Todas as partes do computador devem ter coloração neutra em gradações de preto ou prata, mantendo o padrão e cor;		
2. Deverá acompanhar maleta, pasta, mochila ou similar, para transporte com segurança, de tamanho suficiente para acondicionar o equipamento e seus acessórios (fonte de alimentação e cabos), confeccionada em material resistente e impermeável;		
3. Equipamento deverá ser novo, partes e peças, de primeiro uso, que deverão ser acondicionados em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;		
4. Informar marca e modelo dos componentes utilizados na solução e apresentar prospecto com as características técnicas do equipamento e da placa mãe, processador, memórias, interfaces de rede, fonte de alimentação e unidade de armazenamento, incluindo especificação de marca, modelo, e outros elementos que de forma inequívoca identifiquem e constatem as configurações, possíveis expansões e upgrades, comprovando-os através de certificados, manuais técnicos, folders e demais literaturas técnicas editadas pelos fabricantes;		• **Não foi encaminhado o catálogo da placa-mãe.** • **Não foi encontrado o certificado energy star do laptop**
5. Todos os equipamentos deverão ser entregues idênticos, ou seja, todos os componentes externos e internos deverão ter os mesmos modelo e marca;		
6. O equipamento proposto deverá estar em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;		
7. Não serão aceitos produtos descontinuados por seus fabricantes, não devendo constar em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não poderão ter previsão de descontinuidade de fornecimento, suporte ou vida;		
8. O equipamento em pleno funcionamento deve atender à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que deverá acompanhar a proposta;		
9. Deverá ter compatibilidade eletromagnética e de radiofrequência IEC 61000 comprovado através de certificado ou relatório de avaliação de conformidade emitido por órgão credenciado pelo INMETRO ou internacional equivalente;		
10. Deverá ter compatibilidade com o padrão DMI 2.0 (Desktop Management Interface) ou mais recente da DMTF (Desktop Management Task Force), comprovado através de documentação expedida pelo fabricante do equipamento ou comprovação de que o fabricante do equipamento é membro do consórcio DMTF listado em uma das categorias BOARD ou LEADERSHIP;		
11. Deverá ter compatibilidade com a norma TPM Specification Version 2.0 especificadas pelo TCG (Trsted Computing Group), devendo o fabricante ser membro de uma das categorias listadas no site http://www.trustedcomputinggroup.org/about_tcg/tcg_members;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
12. Deverá ter compatibilidade com EPEAT na nova categoria Bronze, comprovada através de atestados ou certidões que mostrem que o equipamento é aderente ao padrão de eficiência energética EPEAT, emitido por instituto credenciado junto ao INMETRO ou equivalente internacional. 1. Será admitida como comprovação também, a indicação que o equipamento consta no site www.epeat.net na nova categoria Bronze;	□	
13. Não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS (Restriction of Certain Hazardous Substances);	□	
14. Os equipamentos deverão pertencer à linha corporativa, não sendo aceitos equipamentos destinados ao uso da linha doméstica. 1. A comprovação deverá ser apresentada junto com a proposta;	□	
15. Não serão aceitos equipamentos que contenham lacres de violação de garantia por abertura, que inviabilizem a inspeção dos componentes a qualquer momento;	□	
16. **Garantia de 60 (sessenta) meses on-site**, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo. **Para as baterias, será admitido garantia mínima de 36 (trinta e seis) meses**. Nos meses que restarem para completar o prazo total de garantia, a **FORNECEDORA** se obriga a dispor de bateria para venda em caso de eventual necessidade, e a realizar o suporte e assistências técnica sem ônus para a **CONTRATANTE**.	□	

3. Conclusão

Após análise da documentação apresentada pela licitante **Positivo Tecnologia S.A.**, referente ao **Item 3 – MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"**, foram observados alguns pontos inconclusivos, marcados como ⚠**. Os pontos marcados com** □, são exigências que não foi possível comprovar sua aderência na segunda oportunidade de envio de documentação técnica.

Caso a concessão de nova oportunidade para envio de documentação não viole o Art. 42, §2º da Lei n.º 14.133/221, requeremos que também seja solicitado que o licitante, em sua proposta, declare expressamente que a garantia abrange acidentes, inclusive danos não intencionais, tais como QUEDA, TELA QUEBRADA, DERRAMAMENTO DE LÍQUIDOS, OSCILAÇÃO DE ENERGIA, não se limitando às ocorrências supracitadas, sendo o rol apresentado uma lista não exaustiva.

É o parecer.

Manaus, 10 de julho de 2025.

FRANCISCO ELVISLÂNIO PEREIRA
Agente de apoio - Manutenção/Informática

WALESKA GRACIEME ANDRADE MARQUES DE OLIVEIRA
Agente Técnico - Analista de Banco de Dados

Documento assinado eletronicamente por **Francisco Elvislânio Pereira**, **Agente de Apoio - Administrativo**, em 10/07/2025, às 14:06, conforme art. 1º, III, "b", da Lei 11.419/2006.

Documento assinado eletronicamente por **Waleska Gracieme Andrade Marques de Oliveira**, **Agente Técnico - Analista de Banco de Dados**, em 10/07/2025, às 14:06, conforme art. 1º, III, "b", da Lei 11.419/2006.

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POSITIVO
TECNOLOGIA

AO
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA GERAL DE JUSTIÇA

Ref.: PREGÃO ELETRÔNICO Nº 94010/2025-CPL/MP/PGJ SRP

DILIGÊNCIA – ITEM 3

Em resposta à Diligência solicitada no portal Comprasnet, no dia 11/07/2025, segue abaixo as respostas referentes às solicitações de diligências.

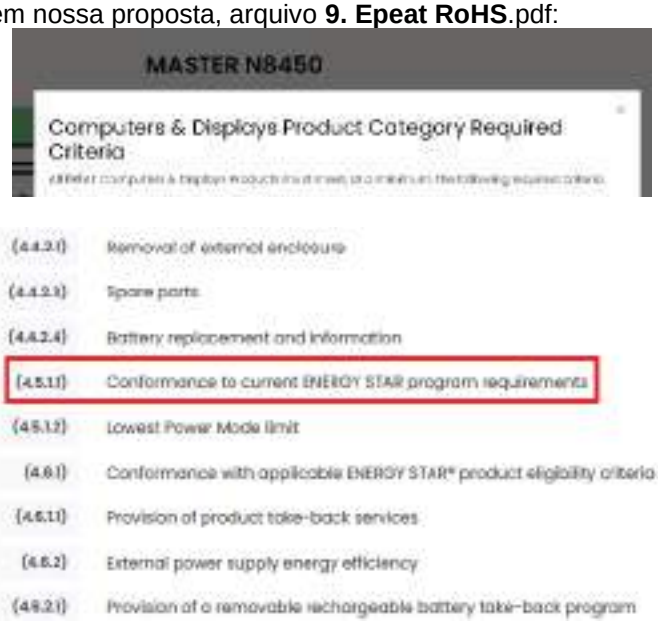
Diligência 1:

Texto do Edital:
1. PLACA PRINCIPAL (PLACA MÃE)
7. Deve ser **compatível** com Energy Star 7.0/7.1, ou tecnologias superiores; (grifos nossos)

Diligência: Não foi encontrado o certificado Energy Star para o item.

Resposta Diligência 1: Conforme já mencionado acima e previsto no Termo de Referência, o órgão requer que a placa-mãe seja compatível com o padrão Energy Star 7.0/7.1 ou versões superiores. É importante destacar que compatibilidade não se confunde com certificação. No presente edital, a **certificação** Energy Star foi exigida apenas para os monitores constantes em outros itens não participados por esta licitante. Para o item em questão (notebook), foi solicitada apenas a **compatibilidade** com o referido padrão. O Energy Star é um programa voluntário dos Estados Unidos, criado pela Environmental Protection Agency (EPA) e pelo Departamento de Energia dos EUA, destinado à promoção da eficiência energética em produtos como eletroeletrônicos, eletrodomésticos, equipamentos de iluminação, construções, entre outros. Ressalta-se que essa certificação não é adotada oficialmente no Brasil. Na documentação já apresentada, especificamente no arquivo "**9. Epeat RoHS.pdf**", constam informações que comprovam a compatibilidade não apenas da placa-mãe, mas de todo o equipamento Positivo Master N8450 com os requisitos do Energy Star, conforme ilustrado na figura abaixo. Por fim, cabe ressaltar que o EPEAT (Electronic Product Environmental Assessment Tool) é um sistema internacional de avaliação ambiental voltado a equipamentos eletrônicos. Para que um produto seja registrado no EPEAT, é obrigatório que ele atenda aos critérios estabelecidos pelo programa **Energy Star**, o que reforça a conformidade do equipamento apresentado com os requisitos de eficiência energética solicitados.

Print do EPEAT constante em nossa proposta, arquivo **9. Epeat RoHS**.pdf:



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Diligência 2:

Texto do Edital:
1. PLACA PRINCIPAL (PLACA MÃE)

16. Deve suportar a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/httpsboot.

Diligência: Não foi encontrado na documentação enviada o que assegure o suporte ao boot por http/https.

Resposta Diligência 2: A Positivo Tecnologia S.A., além de licitante, é também a **fabricante** dos equipamentos ofertados. No documento intitulado "**02 – Especificação Técnica – ITEM 3.pdf**", enviado juntamente com a proposta e devidamente assinado pela própria Positivo, constam todas as especificações técnicas do equipamento apresentado. A comprovação do atendimento ao item em questão se dá por meio desse arquivo, no qual a Positivo — na qualidade de **fabricante** e proponente — declara e assegura a conformidade do equipamento com os requisitos estabelecidos no edital.

14. Possui suporte à tecnologia de acesso remoto out-of-band embutida no hardware;
15. Possui controle da velocidade de rotação do cooler do processador de forma automática, de acordo com a variação de temperatura da CPU;
16. Suporta boot por pendrive ou disco conectado a uma porta USB 3.2;
17. Suporta a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/https boot.

Diligência 3:

Texto do Edital:
2. BIOS

12. Deve possuir opção para exportar/importar configurações. No caso de ferramenta externa fornecida para atender esse item, a mesma deve ser disponibilizada no web site de suporte do fabricante, em conjunto com outras ferramentas relacionadas e homologadas para o modelo do equipamento;

Diligência: Não foi possível verificar o atendimento deste requisito.

Resposta Diligência 3: A Positivo Tecnologia S.A., além de licitante, é também a **fabricante** dos equipamentos ofertados. No documento intitulado "**02 – Especificação Técnica – ITEM 3.pdf**", enviado juntamente com a proposta e devidamente assinado pela própria Positivo, constam todas as especificações técnicas do equipamento apresentado. A comprovação do atendimento ao item em questão se dá por meio desse arquivo, no qual a Positivo — na qualidade de **fabricante** e proponente — declara e assegura a conformidade do equipamento com os requisitos estabelecidos no edital.

11. Possui ferramenta que possibilita realizar a formatação definitiva dos dispositivos de armazenamento conectados ao equipamento, desenvolvida em acordo com o padrão de segurança NIST 800-88r1. Esta ferramenta é nativa do BIOS, é oficialmente homologada pelo fabricante do equipamento;
12. Possui opção para exportar/importar configurações;
13. Oferece a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela CONTRATANTE;

Diligência 4:

Texto do Edital:
4. MEMÓRIA RAM

1. Deverá possuir, no mínimo, 16 (dezesseis) Gb de memória RAM instalados, com capacidade de expansão mínima de 40(quarenta) Gb;

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Diligência: Impreciso. Declara em sua proposta que o laptop ofertado tem capacidade de expansão até 64Gb. Contudo, no Item Placa Mãe, subitem 2, declara que possui dois slots para memória RAM, permitindo instalação até 40Gb.

Resposta Diligência 4: O edital estabelece como requisito que o equipamento permita a instalação de **até 40 (quarenta) gigabytes de memória RAM**. Nesse sentido, informamos que a comprovação do atendimento a esse item consta no arquivo "**1. Equipamento.pdf**", conforme demonstrado abaixo:

Memória RAM	2x slots SO-DIMM DDR5 com suporte para até 64 GB a 4800/5600 MT/s. Com suporte ao modo dual-channel

A informação constante no documento **"02 – Especificação Técnica – ITEM 3.pdf"** refere-se ao **requisito mínimo exigido no edital**. Considerando que o edital exige suporte para até 40 GB, e que o equipamento ofertado possui **capacidade de até 64 GB**, **conclui-se que o item está plenamente atendido**, superando inclusive a exigência estabelecida.

Diligência 5:

Texto do Edital:
12. TELA INTEGRADA
5. Ângulo de visão mínimo de 85° horizontal e vertical;

Diligência: Não foi possível verificar na documentação enviada as informações contidas na proposta.

Resposta Diligência 5: O edital solicita, além do item informado acima, tecnologia da tela IPS. No arquivo "**1. Equipamento.pdf**" enviado com a proposta, há informações sobre a tela utilizada no notebook, conforme abaixo:

Tela	• LCD 14", 16:10, anti-reflexiva, Resolução Full HD+ (WUXGA) 1920 x 1200, LED, IPS, brilho 300 nits, contraste 800:1. • LCD 14", 16:10, anti-reflexiva, Resolução Full HD+ (WUXGA) 1920 x 1200, LED, IPS, brilho 350 nits, contraste 1500:1, com filtro de privacidade eletrônico integrado.

É importante destacar que um dos principais diferenciais da tecnologia IPS (In-Plane Switching) é a capacidade de proporcionar amplos ângulos de visão, **alcançando até 178° na horizontal e na vertical**, sem distorções significativas de cor ou contraste. Dessa forma, ao comprovarmos por meio da ficha técnica do equipamento que o mesmo adota a tecnologia de tela IPS, o requisito referente ao ângulo de visão exigido no edital está plenamente atendido, uma vez que essa característica é intrínseca à tecnologia utilizada.

A Positivo Tecnologia S.A., além de licitante, é também a **fabricante** dos equipamentos ofertados. No documento intitulado "**02 – Especificação Técnica – ITEM 3.pdf**", enviado juntamente com a proposta e devidamente assinado pela própria Positivo, constam todas as especificações técnicas do equipamento apresentado. A comprovação do atendimento ao item em questão **também** se dá por meio desse arquivo, no qual a Positivo — na qualidade de **fabricante** e proponente — declara e assegura a conformidade do equipamento com os requisitos estabelecidos no edital.

12. TELA INTEGRADA
1. É de tecnologia IPS (In-Plane Switching);
2. Tamanho de 14 polegadas widescreen;
3. Suporta 16 milhões de cores;
4. Resolução de 1920x1200@60Hz;
5. Ângulo de visão de 85° horizontal e vertical;
6. Possui brilho de 300 cd/m².

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Diligência 6:

Texto do Edital:
14. FORMATO DE MANUFATURA E FONTE DE ALIMENTAÇÃO

10. A fonte de alimentação deve possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);

Diligência: Não foi apresentado nenhum certificado/teste para comprovar a eficiência da fonte ofertada.

Resposta Diligência 6: A Positivo Tecnologia S.A., além de licitante, é também a **fabricante** dos equipamentos ofertados. No documento "**01 – Proposta PGJ AM**", enviado juntamente com a proposta, consta declaração formal que comprova o atendimento ao item em questão.
Nessa condição, a Positivo — na qualidade de fabricante e proponente — declara e assegura que o equipamento ofertado está em plena conformidade com os requisitos técnicos estabelecidos no edital.

DECLARAÇAO

A empresa **POSITIVO TECNOLOGIA S.A (Filial)**, pessoa jurídica de direito privado, estabelecida na Rua Ásia, s/n – Lote 05 – Quadra N – Bairro Iguape, na Cidade de Ilhéus, Estado da Bahia – CEP 45.658-464, inscrita sob o CNPJ n.º 81.243.735/0009-03, declara como fabricante dos equipamentos ofertados para o pregão em referência que:

- Os produtos ofertados serão industrializados, novos e entregues acondicionados adequadamente em suas embalagens originais lacradas, acompanhados de guias e manuais de utilização e de cabos e conectores, além de licenças dos softwares necessários à sua perfeita instalação e funcionamento;
- A licença do software dedicado terá cobertura equivalente ao período de garantia do equipamento (60 meses) e estará plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;
- Os equipamentos pertencem à linha corporativa, não sendo equipamentos destinados ao uso da linha doméstica;
- A fonte de alimentação modelo PI-ADAP090-A(02) possui eficiência superior a 85% com 50% da carga de trabalho e implementa PFC (Power Factor Correction) ativo;
- A fonte de alimentação modelo PI-ADAP090-A(02) é totalmente compatível e homologada para utilização no equipamento POSITIVO MASTER N8450.

É importante ressaltar que o edital em questão não exige apresentação de certificado, teste ou relatório técnico específico para comprovação do item mencionado. Contudo, caso a declaração formal apresentada pela licitante e fabricante Positivo não seja considerada suficiente para fins de comprovação, em sede de diligência, enviamos em anexo o relatório de testes que atesta o atendimento ao referido requisito técnico, conforme solicitado na diligência.

Diligência 7:

Texto do Edital:
18. OUTROS REQUISITOS

4. Informar marca e modelo dos componentes utilizados na solução e apresentar prospecto com as características técnicas do equipamento e da placa mãe, processador, memórias, interfaces de rede, fonte de alimentação e unidade de armazenamento, incluindo especificação de marca, modelo, e outros elementos que de forma inequívoca identifiquem e constatem as configurações, possíveis expansões e upgrades,

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POSITIVO
TECNOLOGIA

comprovando-os através de certificados, manuais técnicos, folders e demais literaturas técnicas editadas pelos fabricantes;

Diligência: Não foi encaminhado o catálogo da placa-mãe. Não foi encontrado o certificado energy star do laptop.

Resposta Diligência 7: Por padrão, os catálogos dos produtos da Positivo Tecnologia trazem todas as informações relevantes sobre a placa-mãe, portanto, suas funcionalidades já estão devidamente contempladas na ficha técnica do produto **"1. Equipamento.pdf**" e no documento "**02 – Especificação Técnica – ITEM 3.pdf**". Dessa forma, entende-se que a documentação apresentada é suficiente para a comprovação técnica do atendimento ao item, conforme exigências do edital, sobretudo considerando que os documentos foram elaborados, assinados e apresentados pela própria Positivo Tecnologia S.A., na qualidade de fabricante e licitante, o que confere veracidade e responsabilidade às informações prestadas.

Com relação ao certificado Energy Star, o mesmo já foi respondido através da resposta da **diligência 1.**

A Positivo Tecnologia permanece à inteira disposição para quaisquer informações ou providências, aproveitando o ensejo para reiterar votos de estima e elevado apreço.

Curitiba, 11 de julho de 2025.

Maria Helena Pereira
Gerente de Propostas e Projetos Instituições Públicas/Representante Legal

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Certificado de Conclusão

Identificação de envelope: 6DB9C900-3A2C-4D21-9A36-E3E99013FA9C
Status: Concluído
Assunto: Complete com o Docusign: 01 - Resposta Diligência - Item 3.docx
Empresa Responsável: Positivo Tecnologia
Envelope fonte:
Documentar páginas: 5
Assinaturas: 1
Remetente do envelope:
Certificar páginas: 1
Rubrica: 4
Hingrid Barbara Miguel
Assinatura guiada: Ativado
Rua João Bettega, 5200.
Selo com EnvelopeId (ID do envelope): Ativado
Curitiba, PR 81530000
Fuso horário: (UTC-03:00) Brasília
hingridm@positivo.com.br
Endereço IP: 189.2.233.18

Rastreamento de registros

Status: Original
Portador: Hingrid Barbara Miguel
Local: DocuSign
11 de julho de 2025 | 15:17
hingridm@positivo.com.br

Eventos do signatário	Assinatura	Registro de hora e data
MARIA HELENA PEREIRA mhpereira@positivo.com.br Positivo Tecnologia S.A. Nível de segurança: E-mail, Autenticação da conta (Nenhuma), Certificado Digital **Detalhes do provedor de assinatura:** Tipo de assinatura: ICP-Brasil Emissor da assinatura: AC Certisign RFB G5 **Termos de Assinatura e Registro Eletrônico:** Não oferecido através da Docusign	Signed by: MARIA HELENA PEREIRA 83968BDA4C4443B... Adoção de assinatura: Estilo pré-selecionado Usando endereço IP: 200.186.50.209	Enviado: 11 de julho de 2025 | 15:18 Visualizado: 11 de julho de 2025 | 15:19 Assinado: 11 de julho de 2025 | 15:20

Eventos do signatário presencial	Assinatura	Registro de hora e data

Eventos de entrega do editor	Status	Registro de hora e data

Evento de entrega do agente	Status	Registro de hora e data

Eventos de entrega intermediários	Status	Registro de hora e data

Eventos de entrega certificados	Status	Registro de hora e data

Eventos de cópia	Status	Registro de hora e data

Eventos com testemunhas	Assinatura	Registro de hora e data

Eventos do tabelião	Assinatura	Registro de hora e data

Eventos de resumo do envelope	Status	Carimbo de data/hora
Envelope enviado	Com hash/criptografado	11 de julho de 2025 | 15:18
Entrega certificada	Segurança verificada	11 de julho de 2025 | 15:19
Assinatura concluída	Segurança verificada	11 de julho de 2025 | 15:20
Concluído	Segurança verificada	11 de julho de 2025 | 15:20

Eventos de pagamento	Status	Carimbo de data/hora

ELDORADO
INSTITUTO DE PESQUISAS ELDORADO
LABORATÓRIO DE ENSAIOS E TESTES

CRL 0181

RELATÓRIO TÉCNICO

Ensaios de Eficiência Energética

LET-ENE-RE 2395-12490-03 – C [PSE] – 01.00 (Pt)

Modelo: PI-ADAP090-A(02)

06-Abr-2023



LOCAL DOS ENSAIOS



INSTITUTO DE PESQUISAS ELDORADO
Laboratório de Ensaios e Testes - LET
Av. Alan Turing, 275 – Cidade Universitária
Barão Geraldo – Campinas/SP – Brasil
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+55 (19) 3757-3000 / +55 (19) 99161-8100
laboratorio@eldorado.org.br
www.eldorado.org.br/laboratorios

CONSIDERAÇÕES

Os resultados deste relatório de ensaios são válidos exclusivamente para o objeto/item testado, não sendo extensivo a quaisquer lotes, mesmo que similares.

Este relatório apresenta resultados dos ensaios sem parecer conclusivo ou qualquer julgamento que possa influenciar a análise dos mesmos. Essa análise, declarando conformidade ou não aos requisitos aplicáveis, é de responsabilidade dos organismos de certificação, homologação ou aprovação de produtos/equipamentos.

Sugestões, Reclamações e Comentários
Por favor, enviar e-mail para: qualidade@eldorado.org.br

HISTÓRICO DE REVISÕES

Data	Versão	Alterações
06-Abr-2023	01.00	Emissão inicial

A última versão substitui e cancela todas as versões anteriores.

Victor Felipe Moraes Dos Santos
Responsável pela Elaboração

Marcos Pimentel Rezende
Responsável pela Emissão
Signatário Autorizado

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1 DOCUMENTO NORMATIVO

Norma de Requisito	Data Emissão
ENERGY STAR Program Requirements for Computers – Test Method	Rev. 8.0 (Apr-2020)

Norma de Método	Data Emissão
Generalized Test Protocol for Calculating the Energy Efficiency of Internal Ac-Dc and Dc-Dc Power Supplies	Abr-2012

2 DADOS DO SOLICITANTE

Solicitante	
Razão Social	Positivo Tecnologia S/A
Endereço	R. João Bettega, 5200 - Cidade Industrial de Curitiba - Curitiba/PR - CEP: 81.350-000
CNPJ	81.243.735/0001-48
Inscrição Estadual	10173024-73
Contato	Sr. Fernando Tavares dos Santos

3 INFORMAÇÕES GERAIS DO EQUIPAMENTO SOB ENSAIO (ESE)

Dados Gerais	
Classificação	Fonte Externa DC
Modelo	PI-ADAP090-A(02)
Comprimento do cabo DC	1,45 m
Chave ON/OFF presente no ESE	Não possui
Potência Evidenciada	Não evidenciada

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4 IDENTIFICAÇÃO DO EQUIPAMENTO SOB ENSAIO (ESE)

Recebimento	ID Único	Descrição	Modelo Evidenciado	Nº Série (ou similar)
15/03/2023	62611	Fonte de alimentação	PI-ADAP090-A(02)	Y1C14MVD004234
	62615	Cabo de alimentação	Não evidenciado	Não evidenciado

Tabela 1 - Identificação dos equipamentos sob ensaio

NOTA: O laboratório não se responsabiliza pelo teor das informações declaradas pelo solicitante.

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Figura 1 - Vista geral do ESE



Figura 2 - Vista geral do ESE



Figura 3 - Vista geral do ESE



Figura 4 - Vista geral do ESE



Figura 5 – Vista geral do ESE



Figura 6 – Vista geral do ESE

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5 LISTA DE ENSAIOS

Item Norma	Ensaio	Item Rel.
Na íntegra	Eficiência de Fonte de Alimentação	7.1

Tabela 2 - Lista dos ensaios realizados

6 PERÍODO DE ENSAIO E CONDIÇÕES AMBIENTAIS

Período de realização dos ensaios: 05/Abr/2023 até 06/Abr/2023

Temperatura observada: (21,3 ± 2,6) °C

Umidade relativa observada: (55,7 ± 10,3) %

Velocidade do vento: (0,0 ± 0,6) m/s

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7 RESULTADOS DOS ENSAIOS

7.1 Eficiência de Fonte de Alimentação

7.1.1 Requisito Normativo

ENERGY STAR External Power Supply Efficiency Test Method.

7.1.2 Método de ensaio

Este laboratório utilizou o método descrito no documento normativo “Test Method for Calculating the Energy Efficiency of Single-Voltage External Ac-Dc and Ac-Ac Power Supplies (August 11, 2004)”.



Figura 7 - Etiqueta do ESE



Figura 8 - Tamanho do ESE

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7.1.3 Resultado do ensaio

Item Ensaiado	62611
Tensão:	115 V_{AC}

Medidas										Calculado
Saída				Entrada						
Carga	IDC_{out}	VDC_{out}	PDC_{out}	VAC_{in}	P_{in}	$ITHD_{in}$	Fator de Potência	Freq.	Potência Consumida pelo ESE	Eficiência Média
[-]	[mA]	[V]	[W]	[V]	[W]	[%]	[W]	[Hz]	[W]	[%]
100%	4,7	18,8	89,3	114,6	98,4	9,4	1,0	60,0	9,19	91,73
75%	3,6	19,0	67,5	114,7	73,6	11,0	1,0	60,0	6,10	
50%	2,4	19,1	45,2	114,8	49,2	12,7	1,0	60,0	3,99	
25%	1,2	19,3	22,8	114,9	24,6	182,1	0,5	60,0	1,81	
0%	0,0	19,4	0,0	115,0	0,2	39,8	0,1	60,0	0,23	

Tabela 3 – Resultado do ensaio

Carga	Eficiência	IM	Fator k
[-]	[%]	[%]	[-]
100%	90,67	1,4	2,0
75%	91,71	1,1	2,0
50%	91,90	0,8	2,0
25%	92,65	0,6	2,0

Tabela 4 – Resultado do ensaio

Item Ensaiado	62611
Tensão:	230 V_{AC}

Medidas										Calculado
Saída				Entrada						
Carga	IDC_{out}	VDC_{out}	PDC_{out}	VAC_{in}	P_{in}	$ITHD_{in}$	Fator de Potência	Freq.	Potência Consumida pelo ESE	Eficiência Média
[-]	[mA]	[V]	[W]	[V]	[W]	[%]	[W]	[Hz]	[W]	[%]
100%	4,7	18,9	89,3	229,9	97,8	17,4	1,0	50,0	8,46	90,35
75%	3,6	19,0	67,6	230,0	75,2	20,8	1,0	50,0	7,64	
50%	2,4	19,2	45,4	230,1	50,8	25,5	0,9	50,0	5,39	
25%	1,2	19,3	22,8	230,2	25,1	220,2	0,4	50,0	2,31	
0%	0,0	19,4	0,0	230,2	0,3	14,6	0,0	50,0	0,28	

Tabela 5 – Resultado do ensaio

Carga	Eficiência	IM	Fator k
[-]	[%]	[%]	[-]
100%	91,35	1,1	2,0
75%	89,84	0,9	2,0
50%	89,38	0,8	2,0
25%	90,84	0,6	2,0

Tabela 6 – Resultado do ensaio

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8 INCERTEZA DE MEDIÇÃO

Os resultados dos ensaios quantitativos mencionados neste documento apresentam os devidos valores de incerteza expandida da medição e respectivo valor do fator de abrangência, o qual para uma distribuição t com os graus de liberdade efetivos calculado corresponde a uma probabilidade de abrangência de aproximadamente 95%. Devido ao fato das incertezas serem reavaliadas periodicamente, as mesmas podem sofrer alterações. A incerteza padrão da medição foi determinada de acordo com a publicação do EA-4/02.

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9 LISTA GERAL DE INSTRUMENTOS

A lista de instrumentos utilizada nos ensaios segue apresentada abaixo:

Equipamentos / Acessórios	Identificação
Fonte AC Programável	AC 1046
Medidor de Potência	008736
Fixture	008737
Fixture da Carga Eletrônica	AC 1047
Carga Eletrônica	AC 1045
Anemômetro	AC 1051
Termo-higrometro	AC 3509

Tabela 7 – Relação dos equipamentos e acessórios utilizados na execução dos ensaios

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MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

OFÍCIO Nº 264.2025.CPL.1671346.2025.001317

Manaus, *na data da assinatura.*

Ao Senhor

CARLOS ALEXANDRE DOS SANTOS NOGUEIRA

Chefe do Setor de Infraestrutura e Telecomunicação

Assunto: Análise de Propostas de Preços referente ao **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ SRP**.

Senhor Chefe,

Cumprimentando-o com o presente, informamos que tramita nesta Comissão Permanente de Licitação o Processo SEI n.º 2025.001317, referente ao **PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP,** cujo objeto é o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses*.

Isto posto, considerando as solicitações constantes dos **Ofícios Nº 234.2025.CPL. (doc. 1661731), 235.2025.CPL. (doc. 1661828) e 256.2025.CPL. (doc. 1667127)**, encaminhamos os autos em epígrafe a esse **Setor de Infraestrutura e Telecomunicação - SIET,** para **análise e manifestação** quanto aos documentos solicitados, em diligência, complementares à proposta de preço abaixo elencada:

1 . **POSITIVO TECNOLOGIA S/A (Filial)**, CNPJ (MF) n.º 81.243.735/0009-03, para o Item 3 (doc's. 1671523).

Atenciosamente,

Maurício Araújo Medeiros

Pregoeiro - PORTARIA 606/2025/SUBADM

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 14/07/2025, às 11:38, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1671346** e o código CRC **D0FE032B**.

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - CEP 69000-000 - Manaus - AM - www.mpam.mp.br

PARECER Nº 25.2025.SIET.1671649.2025.001317

PROCESSO DE COMPRA: 2025.001317 Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ SRP Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317
OBJETO: Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.

1. **Relatório**

Trata-se de pedido de compatibilização da segunda diligência realizada com a empresa **POSITIVO TECNOLOGIA S/A (FILIAL)**, que apresentou os novos documentos enviados para o **ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"**, na fase de disputas do Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ, documentos 1671523, recebido no dia 14/7/2025.

2. **Da Análise**

2.1 Produto ofertado

Item	Descrição	Quantidade	Produto Ofertado
1	**ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"** **Marca/Modelo de Referência:** Lenovo ThinkPad T14 GEN 5, Dell Latitude 5450.	300	L**ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"** Positivo Master N8450 , Intel® Core™ Ultra 5 135U, 14", RAM 16Gb, SSD M.2 256Gb, Windows 11 Pro (64 bits) Português BR, Absolute + Mouse SM-6620

2.2 Análise comparativa

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. PLACA PRINCIPAL (PLACA MÃE)		
1. A placa mãe deve ser construída pelo próprio fabricante do microcomputador ou produzida sob a especificação do mesmo, não sendo aceito placas de livre comercialização no mercado, nem em regime de OEM;		
2. Deve possuir, no mínimo, 1 (um) slot para memória RAM, "do tipo DDR-5 SODIMM", permitindo a instalação de até 40 (quarenta) Gigabytes, 8 (oito) soldadas diretamente na placa e até 32 (trinta e dois) instaladas no slot. Admite-se 2 slots com 1 módulo de memória cada, como configuração superior, em substituição aos módulos soldados na placa principal;		
3. Deve suportar tecnologia Dual Channel de utilização de memória RAM;		
4. Deve possuir 1 (um) Socket M.2 para SSD SATA ou NVMe;		
5. Deve possuir 1 (um) Socket M.2 Para Cartões Wi-Fi/Bluetooth;		
6. Deve possuir recursos DASH 1.0 (Desktop and mobile Architecture for System Hardware), ou tecnologia minimamente equivalente;		
7. Deve ser compatível com Energy Star 7.0/7.1, ou tecnologias superiores;		**Não foi possível verificar qual a versão do programa Energy Star que o equipamento é compatível.**

DESCRIÇÃO	PARECER	OBSERVAÇÕES
8. Deve possuir capacidade de desligamento do vídeo e do disco rígido após tempo determinado pelo usuário, religamento por acionamento de teclado ou mouse, bem como função de economia de energia para monitor, placa mãe e unidades de armazenamento internas;		
9. Deve possuir chip TPM (Trusted Platform Module), versão 2.0, ou superior, soldado à placa principal, e destinado ao armazenamento de senhas, certificados digitais e chaves criptográficas em conformidade com as especificações do Trusted Computing Group;		
10. Deve possuir suporte a virtualização por hardware;		
11. Deve possuir suporte a implementação de extensões de virtualização de I/O por hardware;		
12. Deve possuir suporte a aceleração de segurança AES no hardware;		
13. Deve possuir suporte à tecnologia de acesso remoto out-of-band embutida no hardware;		
14. Deve possuir controle da velocidade de rotação do cooler do processador de forma automática, de acordo com a variação de temperatura da CPU;		
15. Deve suportar boot por pendrive ou disco conectado a uma porta USB 3.1 ou 3.2;		
16. Deve suportar a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/https boot.		**Não foi encontrado na documentação enviada o que assegure o suporte ao boot por http/https.**
2. BIOS		
1. O BIOS deve ser desenvolvido pelo mesmo fabricante do equipamento ou customizado por ele;		
2. O fabricante do equipamento, deverá ser totalmente responsável pelo BIOS fornecido juntamente com a placa mãe e pela atualização do mesmo, devendo promover as alterações que se façam necessárias e corrigir problemas ou danos causados ao equipamento em razão desse BIOS ou de procedimentos de atualização deste, (que poderão ser acompanhados pela empresa caso haja necessidade), durante o período de garantia do equipamento;		
3. BIOS em português ou inglês, desenvolvido em conformidade com a especificação UEFI 2.5 ou superior (http://www.uefi.org) e capturáveis pela aplicação de inventário SCCM (System Center Configuration Manager);		
4. O fabricante deverá comprovar a compatibilidade com o padrão UEFI através do site http:// www.uefi.org/members, na categoria membros;		
5. Deve ser do tipo flash EPROM, atualizável por software, compatível com o padrão plug-and-play;		
6. Deve ser lançado a partir de 2016 e entregue na versão mais atual disponibilizada pelo fabricante;		
7. Deve ter suporte a ACPI, ou tecnologia superior;		
8. Deve ser desenvolvido de acordo com o padrão de segurança NIST 800-147 ou ISO/IEC 19678:2015, para garantir a integridade do BIOS;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
9. Deve possuir recursos de controle de permissão através de senhas, sendo uma para inicializar o computador e outra para acesso e alterações das configurações do BIOS;		
10. Deve possuir software embarcado no BIOS com funções de diagnóstico de problemas, e gerenciamento com as seguintes características: 1. Permitir o teste do equipamento, com independência do sistema operacional instalado, o software de diagnóstico deve ser capaz de ser executado (inicializado) a partir da UEFI (Unified /Extensible Firmware Interface) ou do Firmware do equipamento através do acionamento de tecla função (F1...F12); 2. O software de diagnóstico deverá ser capaz de informar, através de tela gráfica: O fabricante e modelo do equipamento, processador, memória RAM, firmware, e capacidade do disco rígido;		
11. Deve possuir ferramenta que possibilite realizar a formatação definitiva dos dispositivos de armazenamento conectados ao equipamento, desenvolvida em acordo com o padrão de segurança NIST 800-88 ou ISO/IEC 27040:2015. Caso esta ferramenta não seja nativa do BIOS, deverá ser oficialmente homologada pelo fabricante do equipamento;		
12. Deve possuir opção para exportar/importar configurações. No caso de ferramenta externa fornecida para atender esse item, a mesma deve ser disponibilizada no web site de suporte do fabricante, em conjunto com outras ferramentas relacionadas e homologadas para o modelo do equipamento;		**Não foi possível verificar o atendimento deste requisito.**
13. Deve oferecer a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela **CONTRATANTE**;		
14. Deve possuir campo não editável com o número de série do equipamento gravado em memória não volátil e campo editável que permita inserir identificação customizada (identidade patrimonial com pelo menos 10 caracteres). Serão aceitos BIOS com reprogramação via software desde que estes estejam devidamente licenciados para o equipamento e disponibilizados para download no web site de suporte do fabricante;		
15. Deverá permitir o gerenciamento remoto do microcomputador mesmo desligado, desde que energizado pela rede elétrica e conectado localmente à rede de dados, permitindo ligar e desligar o microcomputador remotamente, com controle de acesso, e com possibilidade de definir horários programados; 1. Deve permitir acesso remoto através da rede ao POST (procedimento de inicialização) e BIOS para leitura e gravação, mesmo com o equipamento desligado; 2. Deverá permitir acesso remoto ao sistema operacional e processo de inicialização do microcomputador através de interface gráfica, com controle remoto do mouse e teclado (KVM remoto), independente do suporte de aplicações locais ou estado do sistema operacional; 3. Possuir a capacidade de inventário remoto de Hardware mesmo com o equipamento desligado.		
3. PROCESSADOR		
1. Deverá possuir, 2 (dois) núcleos, no mínimo, e 12 (doze) threads de processamento com frequência de operação interna básica de, no mínimo, 1.6 GHz;		
2. Em caso de processadores com arquitetura de computação heterogênea (big.LITTLE), só serão contabilizados os cores voltados para performance, na contagem mínima de núcleos e ciclos de clock base (MHz);		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
3. Memória cache total de, no mínimo, 12MB;		
4. O processador ofertado deverá ser Intel Core Ultra 5, "de 1ª geração", ou AMD Ryzen 5 PRO, "serie 8000", admitindo-se famílias ou gerações mais novas;		
5. O processador deverá ser da última geração disponível utilizada pelo fabricante do equipamento, **com desempenho mínimo de 17.000 (dezessete mil) pontos**, considerando o uso pleno de todos os núcleos e sem a aplicação de configurações específicas para aumento ou modificação de desempenho, como "overclock", "undervoltage", "overvoltage" ou quaisquer outras que não estejam em conformidade com os padrões definidos pelo fabricante; 1. O desempenho será comprovado por intermédio de resultados de BenchMark, disponíveis em: http://www.cpubenchmark.net/cpu_list.php. 2. Será admitida uma margem de tolerância de 2% (dois por cento) do desempenho mínimo exigido.		
6. Deve possuir tecnologia de controle dinâmico de frequência do processador para núcleos individuais e ou múltiplos núcleos, podendo atingir até 4.4 GHz, no mínimo;		
7. Deve possuir controlador com suporte à memória RAM do tipo DDR5-5600 MT/s, ou superior;		
8. Deverá possuir tecnologia de fabricação de 7 nm (sete nanômetros) ou inferior;		
9. TDP(Thermal Design Power) mínimo de 12W, e máximo de 58W, declarado pelo fabricante;		
10. Deve possuir instruções do padrão AVX 2.0, ou superior;		
11. Deve possuir instruções do padrão SSE4.1/4.2, ou superior;		
12. Deve possuir instruções que implementem extensões de virtualização de hardware;		
13. Deve possuir instruções AES-NI embutidas;		
14. O proponente deverá declarar em sua proposta comercial o modelo do processador ofertado.		
4. MEMÓRIA RAM		
1. Deverá possuir, no mínimo, 16 (dezesseis) Gb de memória RAM instalados, com capacidade de expansão mínima de 40 (quarenta) Gb;		
2. Deverá ser do tipo DDR-5/LPDDR-5 SODIMM ou superior e possuir no mínimo, 5600 MT/s de velocidade de comunicação com o barramento principal;		
3. A implementação do total de memória RAM deve utilizar 1 (um) módulo, de 8 (oito) GB, e mais 8 (oito) GB soldada diretamente à placa principal, utilizando tecnologia dual channel; 1. Admite-se que ambos os módulos sejam do tipo SODIMM, e sejam removíveis como configuração superior a mencionada acima;		
4. O(s) módulo(s) removível(eis) deve(m) ser instalado(s) durante o processo de manufatura do computador, e homologado(s) como parte do equipamento, inclusive estando coberto(s) pela garantia e suporte como descrito no Termo de Referência.		
5. UNIDADE DE ARMAZENAMENTO		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. Deve possuir, no mínimo, 1 (uma) unidade padrão tipo Solid State Drive (SSD) interna instalada do tipo M.2, na capacidade mínima de 256 GB e velocidade mínima de gravação de 1.200MB/s;		
2. Deve utilizar interface tipo M.2 PCIe 4.0, com o protocolo NVMe, ou superior;		
3. Deve ser instalada durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência.		
6. CONECTIVIDADE		
1. Deverá possuir no mínimo 4 (quatro) portas USB; 1. Do total de portas, no mínimo 2 (duas) devem ser do tipo USB 3.2 tipo A; 2. No mínimo 1 (uma) deve ser do tipo USB 3.2 Tipo C ou Thunderbolt;		
2. Possuir, no mínimo, 1 (uma) porta de vídeo adicional, suportando a utilização de 1 (um) monitor auxiliar simultânea e independentemente da tela integrada;		
3. O tipo da porta auxiliar de vídeo supracitada deve ser HDMI 2.0 ou DisplayPort 1.2. Em caso de versões miniaturizadas destas, adaptadores revertendo para elas devem ser fornecidos sem custo adicional.		
7. INTERFACES DE REDE		
1. Deve possuir, no mínimo, 1 (uma) interface de rede RJ45 compatível com os padrões 10, 100 e 1000 Mbps, autosense, full-duplex e plug-and-play, configurável totalmente por software e com função Wake On Lan instalada e em funcionamento;		
2. A controladora ethernet, deverá ser do tipo "onboard", e suportar recurso WOL (Wake On LAN);		
3. Deve possuir, no mínimo, 1 (uma) interface de rede sem fios no padrão Wi-Fi 6 (802.11 B/G/N/AX), com velocidade de até 1.73Gbps, Tecnologia MU-MIMO, banda dupla em 2.4Ghz e 5Ghz, e suporte a Bluetooth 5.3 ou superior;		
4. As controladoras Wi-Fi e Bluetooth, deverão estar em um único cartão M.2, conectado em slot específico na placa mãe, que deve ser instalado durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência;		
5. A interface Wireless ofertada deve possuir, na data da entrega da proposta, homologação junto à **ANATEL** com certificado disponível publicamente no endereço eletrônico desta agência, conforme a Resolução n.º 242 de 30 de novembro de 2000.		
8. CONTROLADORA DE VÍDEO		
1. Deve possuir controlador 3D/2D com suporte a DirectX 12, ou superior;		
2. Deve suportar Pixel Shader 3.0, ou superior;		
3. Deve suportar OpenGL 4.5, ou superior;		
4. Deve suportar HDCP ou HDR;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
5. Deve suportar a resolução mínima de 1920 X 1080 @ 60 Hz;		
6. Deve possuir tecnologia de controle dinâmico de frequência, podendo atingir, no mínimo, 1.35GHz;		
7. Deve suportar, no mínimo, o uso de 3 (três) monitores simultânea e independentemente.		
9. CONTROLADORA DE SOM E MULTIMÍDIA		
1. O equipamento deve possuir uma controladora de som integrada, do tipo "onboard";		
2. Deve possuir, no mínimo, uma interface de som com 1 (um) conector combinado para fone de ouvido e microfone, de 3,5 mm;		
3. Deve possuir, no mínimo, 2 alto-falantes internos, com 2 Watt RMS de potência cada, compatíveis com a controladora de som;		
4. Deve incorporar microfone(s), com cancelamento de ruído, voltados para captar o som do usuário em frente ao computador.		
10. TECLADO		
1. Deve ser integrado e retroiluminado no idioma padrão, português (Brasil), ABNT-II;		
2. Deve possuir teclas multimídia, com no mínimo, aumentar e diminuir volume, além do mute; 1. Admite-se a utilização de teclas de função (F1...F12), para tais ações.		
11. DISPOSITIVOS APONTADORES		
1. Deve possuir um touchpad integrado, com dois botões, e área útil de 4 (quatro) pol², no mínimo; 1. Admite-se que os botões sejam integrados, como cliques diretos na parte inferior do touchpad;		
2. Deve suportar gestos de rolagem, ou possuir teclas, área ou dispositivo dedicado;		
3. Deve acompanhar um mouse adicional, da mesma cor e do mesmo fabricante do equipamento ofertado; 1. Deve ser óptico, com conexão USB, com 3 (três) botões e sistema de rolagem de página, com formato ergonômico e com design ambidestro, devendo possuir resolução mínima por hardware de 800 dpi.		
12. TELA INTEGRADA		
1. Deve ser de tecnologia IPS (In-Plane Switching) ou VA (Vertical Alignment);		
2. Tamanho de 14 polegadas widescreen, no mínimo;		
3. Deve suportar, no mínimo, 16 milhões de cores;		
4. Resolução mínima de 1920x1080@60Hz;		
5. Ângulo de visão mínimo de 85° horizontal e vertical;		
6. Deve possuir brilho mínimo de 300 cd/m².		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
13. WEBCAM		
1. O equipamento deve possuir uma webcam integrada, de 1.3 megapixels, com resolução de vídeo FHD, no mínimo, não sendo aceita solução externa;		
2. Deve possuir mecanismo de bloqueio por tampa, ou desativação mecânica, como solução de privacidade, também integrada ao equipamento.		
14. FORMATO DE MANUFATURA E FONTE DE ALIMENTAÇÃO		
1. O equipamento deve ser produzido no formato laptop.		
2. O peso total do equipamento sem a fonte, não deve exceder os 1.6 Kg (um quilo e seiscentos gramas);		
3. A dobradiça do equipamento, deve ser construída em metal, e com articulação de 180º;		
4. O material do gabinete deve ser de estrutura livre de BFR e outros materiais tóxicos e/ou antiecológicos;		
5. Deve possuir botão de liga/desliga e luz de indicação de computador ligado (power-on) em local visível e acessível do computador, quando ele estiver aberto;		
6. Deve possuir leitor biométrico integrado, em área acessível, quando o notebook estiver aberto;		
7. Deve oferecer a possibilidade de, se demandado, aplicar logo oficial da CONTRATANTE, com área de impressão mínima de 3,00 x 2,72 cm, através de sistema de gravação direta como aplicação em laser, não sendo admitido o uso de adesivagem, serigrafias ou adaptações semelhantes. A gravação deverá ser feita apenas na parte inferior do laptop, visando medidas de segurança;		
8. O computador deverá possuir fenda de encaixe padrão "Kensington" ou “Noble Wedge” para utilização de cabo de aço do mesmo tipo;		
9. Deve ser fornecido com fonte de carregamento/alimentação do mesmo fabricante e compatível com o equipamento, com potência suficiente para suportar todos os dispositivos internos em suas configurações máximas permitidas, além de possibilitar o pleno carregamento da bateria do equipamento;		
10. A fonte de alimentação deve possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);		
11. A fonte deve possuir tensão de entrada 110 e 220 Volts de forma automática;		
12. A fonte deve fornecer uma alimentação mínima de 65W para o equipamento;		
13. Os plugues de conexão à rede elétrica devem seguir o padrão NBR 14136:2002.		
15. BATERIA		
1. Deve ser integrada ao corpo do equipamento, (não destacável);		
2. Potência mínima de 39 wh;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
3. Deve possuir no mínimo 3 (três) células de carregamento; 1. Deve ser capaz de manter o equipamento funcionando ininterruptamente por no mínimo 11 (onze) horas, conforme o padrão de teste do aplicativo MobileMark 2018.		
16. SISTEMA OPERACIONAL E SOFTWARES COMPLEMENTARES		
1. Deve acompanhar o equipamento licença OEM do sistema operacional Microsoft Windows 11 Professional de 64 bits, ou versão mais recente, no idioma Português Brasil;		
2. O equipamento deve ser entregue com o Windows 11 Professional 64 bits, ou versão mais recente instalado;		
3. Cada equipamento deve incluir uma licença específica de software dedicado para: • Controle: Funções de bloqueio e desbloqueio remoto. • Inventário: Gestão detalhada de hardware e software do equipamento. • Rastreabilidade: Recursos de geolocalização integrados.		
4. O software de controle e monitoramento deve possuir a funcionalidade de persistência, garantindo a preservação do cliente do software e de suas funcionalidades, mesmo após a perda total de dados ou formatação do disco rígido, utilizando tecnologia de residência em firmware;		
5. A interface de controle e monitoramento dos equipamentos deve ser baseada em nuvem, sem a necessidade de licenças adicionais além daquelas atribuídas a cada equipamento;		
6. A licença do software dedicado deve ter cobertura mínima equivalente ao período de garantia do equipamento, de 60 (sessenta) meses, e deve estar plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;		
7. Os equipamentos poderão ser entregues com imagem de instalação do sistema operacional e softwares customizada e previamente fornecida pela CONTRATANTE, conforme especificado no Termo de Referência.		
17. COMPATIBILIDADE		
1. Deve ser apresentado o certificado de compatibilidade dos equipamentos com o sistema operacional Windows 11 x64 obtido junto à Microsoft. Deverá constar no Microsoft Hardware Compatibility List (HCL) para o sistema operacional exigido e ofertado. 1. A comprovação da compatibilidade será efetuada pela apresentação do documento Hardware Compatibility Test Report emitido especificamente para o modelo no sistema operacional ofertado, ou pela indicação no site da Microsoft;		
2. O equipamento deverá possuir certificado de homologação comprovando a compatibilidade do mesmo com, pelo menos, uma distribuição de Linux. A comprovação da compatibilidade será efetuada pela apresentação de documento emitido especificamente para o modelo ofertado;		
3. O equipamento, na configuração ofertada, deve possuir certificado de conformidade contra incidentes elétricos e de combustão dos materiais (IEC/EN 60950) e de imunidade eletromagnética (IEC/EN 61000), comprovado através de certificados ou do relatório de avaliação de conformidade nos moldes da portaria 170/2012 vigente do INMETRO, ou similar Internacional.		
18. OUTROS REQUISITOS		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. Todas as partes do computador devem ter coloração neutra em gradações de preto ou prata, mantendo o padrão e cor;		
2. Deverá acompanhar maleta, pasta, mochila ou similar, para transporte com segurança, de tamanho suficiente para acondicionar o equipamento e seus acessórios (fonte de alimentação e cabos), confeccionada em material resistente e impermeável;		
3. Equipamento deverá ser novo, partes e peças, de primeiro uso, que deverão ser acondicionados em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;		
4. Informar marca e modelo dos componentes utilizados na solução e apresentar prospecto com as características técnicas do equipamento e da placa mãe, processador, memórias, interfaces de rede, fonte de alimentação e unidade de armazenamento, incluindo especificação de marca, modelo, e outros elementos que de forma inequívoca identifiquem e constatem as configurações, possíveis expansões e upgrades, comprovando-os através de certificados, manuais técnicos, folders e demais literaturas técnicas editadas pelos fabricantes;		• **Não foi encaminhado o catálogo da placa-mãe.** • **Não foi encontrado o certificado energy star do laptop**
5. Todos os equipamentos deverão ser entregues idênticos, ou seja, todos os componentes externos e internos deverão ter os mesmos modelo e marca;		
6. O equipamento proposto deverá estar em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;		
7. Não serão aceitos produtos descontinuados por seus fabricantes, não devendo constar em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não poderão ter previsão de descontinuidade de fornecimento, suporte ou vida;		
8. O equipamento em pleno funcionamento deve atender à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que deverá acompanhar a proposta;		
9. Deverá ter compatibilidade eletromagnética e de radiofrequência IEC 61000 comprovado através de certificado ou relatório de avaliação de conformidade emitido por órgão credenciado pelo INMETRO ou internacional equivalente;		
10. Deverá ter compatibilidade com o padrão DMI 2.0 (Desktop Management Interface) ou mais recente da DMTF (Desktop Management Task Force), comprovado através de documentação expedida pelo fabricante do equipamento ou comprovação de que o fabricante do equipamento é membro do consórcio DMTF listado em uma das categorias BOARD ou LEADERSHIP;		
11. Deverá ter compatibilidade com a norma TPM Specification Version 2.0 especificadas pelo TCG (Trsted Computing Group), devendo o fabricante ser membro de uma das categorias listadas no site http://www.trustedcomputinggroup.org/about_tcg/tcg_members;		
12. Deverá ter compatibilidade com EPEAT na nova categoria Bronze, comprovada através de atestados ou certidões que mostrem que o equipamento é aderente ao padrão de eficiência energética EPEAT, emitido por instituto credenciado junto ao INMETRO ou equivalente internacional. 1. Será admitida como comprovação também, a indicação que o equipamento consta no site www.epeat.net na nova categoria Bronze;		
13. Não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS (Restriction of Certain Hazardous Substances);		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
14. Os equipamentos deverão pertencer à linha corporativa, não sendo aceitos equipamentos destinados ao uso da linha doméstica. 1. A comprovação deverá ser apresentada junto com a proposta;		
15. Não serão aceitos equipamentos que contenham lacres de violação de garantia por abertura, que inviabilizem a inspeção dos componentes a qualquer momento;		
16. **Garantia de 60 (sessenta) meses on-site**, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo. **Para as baterias, será admitido garantia mínima de 36 (trinta e seis) meses**. Nos meses que restarem para completar o prazo total de garantia, a **FORNECEDORA** se obriga a dispor de bateria para venda em caso de eventual necessidade, e a realizar o suporte e assistências técnica sem ônus para a **CONTRATANTE**.		

3. Conclusão

Não sendo possível constatar os pontos controversos, e não sendo atendido a solicitação para que o licitante, em sua proposta, declare expressamente que a garantia abrange acidentes, inclusive danos não intencionais, tais como QUEDA, TELA QUEBRADA, DERRAMAMENTO DE LÍQUIDOS, OSCILAÇÃO DE ENERGIA, não se limitando às ocorrências supracitadas, sendo o rol apresentado uma lista não exaustiva.

Caso o pregoeiro decida manter a oportunidade ao fornecedor, recomenda-se que seja solicitada amostra do produto ofertado.

É o parecer.

Manaus, 14 de julho de 2025.

FRANCISCO ELVISLÂNIO PEREIRA
Agente de apoio - Manutenção/Informática

WALESKA GRACIEME ANDRADE MARQUES DE OLIVEIRA
Agente Técnico - Analista de Banco de Dados

Documento assinado eletronicamente por **Francisco Elvislânio Pereira**, **Agente de Apoio - Administrativo**, em 14/07/2025, às 13:48, conforme art. 1º, III, "b", da Lei 11.419/2006.

Documento assinado eletronicamente por **Waleska Gracieme Andrade Marques de Oliveira**, **Agente Técnico - Analista de Banco de Dados**, em 14/07/2025, às 13:48, conforme art. 1º, III, "b", da Lei 11.419/2006.

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Sistema de Cadastramento Unificado de Fornecedores - SICAF

Certificado de Registro Cadastral - CRC

(Emissão conforme art. 17 da Instrução Normativa nº 03, de 26 abril de 2018)

CNPJ: **05.778.325/0005-47**

Razão Social: **E.R. SOLUCOES INFORMATICA LTDA**

Atividade Econômica Principal:

4651-6/01 - COMÉRCIO ATACADISTA DE EQUIPAMENTOS DE INFORMÁTICA

Endereço:

AVENIDA CEM, S/N - QUADRA01 MODULO 01 SALA 01 PISO 2 - TERMINAL INTERMODAL DA SERRA - 29.161-384 - Serra / Espírito Santo

Observações:

A veracidade das informações poderá ser verificada no endereço https://comprasnet.gov.br.

Este certificado não substitui os documentos exigidos em lei.

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1887

Sistema de Cadastramento Unificado de Fornecedores - SICAF

Declaração

Declaramos para os fins exigidos na legislação, conforme documentação registrada no SICAF, que a situação do fornecedor no momento é a seguinte:

Dados do Fornecedor

CNPJ:	**05.778.325/0005-47**	DUNS®:	**928090603**
Razão Social:	**E.R. SOLUCOES INFORMATICA LTDA**		
Nome Fantasia:			
Situação do Fornecedor:	**Credenciado**	Data de Vencimento do Cadastro:	**29/09/2025**
Natureza Jurídica:	**SOCIEDADE EMPRESÁRIA LIMITADA**		
MEI:	**Não**		
Porte da Empresa:	**Demais**		

Ocorrências e Impedimentos

Ocorrência:	**Nada Consta**
Impedimento de Licitar:	**Nada Consta**
Ocorrências Impeditivas indiretas:	**Nada Consta**
Vínculo com "Serviço Público":	**Nada Consta**

Níveis cadastrados:

Automática: a certidão foi obtida através de integração direta com o sistema emissor. Manual: a certidão foi inserida manualmente pelo fornecedor.

I - Credenciamento

II - Habilitação Juridica

III - Regularidade Fiscal e Trabalhista Federal

Receita Federal e PGFN	Validade:	**27/12/2025**	**Automática**
FGTS	Validade:	**03/08/2025**	**Automática**
Trabalhista **(http://www.tst.jus.br/certidao)**	Validade:	**07/01/2026**	**Automática**

IV - Regularidade Fiscal Estadual/Distrital e Municipal

Receita Estadual/Distrital	Validade:	**20/08/2025**
Receita Municipal	Validade:	**25/07/2025**

V - Qualificação Técnica

VI - Qualificação Econômico-Financeira

Validade: **30/06/2026**

CPF: 634.XXX.XXX-49 Nome: MAURICIO ARAUJO MEDEIROS

Ass: _____

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1888

PROCURAÇÃO

E.R. Soluções Informática Ltda, inscrita no CNPJ sob o nº 05.778.325/0001-13(MATRIZ) situada na cidade de Ribeirão Preto/SP e CNPJ sob o nº 05.778.325/0005-47 situada na cidade de Serra/ES, através de seus Representantes Legais Srs George Eduardo Saliby, portador do RG Nº 7.854.271-6/SSP –CPF 982.913.358-34 e André Luis Machado Pelicioni portador do RG Nº 18.658.107/SSP – CPF 248.785.548-78, DECLARAM pela presente que a **Srta. Julia Barbosa Avelar, brasileira, solteira, portadora da Cédula de Identidade n° 54.193.926-9 SSP/SP, cadastrada no CPF sob nº 318.101.328-51, residente e domiciliado na cidade de Ribeirão Preto na Rua João Vendruscolo, 3100, Jardim Florestan Fernandes, Cep 14079-328**, está autorizada por esta empresa a representá-la comercialmente para zelar dos seus interesses , inclusive com poderes de retirar editais, elaborar propostas de preços, assinar declarações, apresentar documentação para cadastro, retirar Certificados de Registro Cadastral, participar de sessões públicas de habilitação e julgamento da documentação e propostas, formular ofertas e lances verbais de preços nos pregões, assinar as respectivas atas, registrar ocorrências, formular impugnações, interpor recurso, renunciar o exercício de direito de recurso, transigir, requerer, assinar em licitações públicas, bem como assinar todos e quaisquer documentos, inclusive Contratos de Compra, indispensáveis ao bom e fiel cumprimento do presente mandato junto aos Órgãos FEDERAIS, ESTADUAIS, MUNICIPAIS E AUTARQUIAS E SOCIEDADES MISTAS.

A presente procuração é válida até 30/09/2025.

Ribeirão Preto, 30 de junho de 2025.

GEORGE EDUARDO SALIBY:98291335834
Assinado de forma digital por GEORGE EDUARDO SALIBY:98291335834
Dados: 2025.06.30 08:02:48 -03'00'

GEORGE EDUARDO SALIBY
Diretor Comercial
RG 7.854.271-6/SSP
CPF.982.913.358-34

ANDRE LUIS MACHADO PELICIONI:24878554878
Assinado de forma digital por ANDRE LUIS MACHADO PELICIONI:24878554878
Dados: 2025.06.30 08:03:39 -03'00'

ANDRE LUIS MACHADO PELICIONI
Diretor Administrativo.
RG 18.658.107-5/SSP
CPF 248.785.548-78

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1889


REPÚBLICA FEDERATIVA DO BRASIL

ESTADO DE SÃO PAULO

SECRETARIA DA SEGURANÇA PÚBLICA

8700-7

NÃO PLASTIFICAR

7A726A82

CARTEIRA DE IDENTIDADE

VÁLIDA EM TODO O TERRITÓRIO NACIONAL

54.193.926-9 2 via

DATA DE EXPEDIÇÃO 04/10/2018

JÚLIA BARBOSA AVELAR

FILIAÇÃO

JÚLIO CÉSAR RODRIGUES AVELAR

PATRICIA CECILIA BARBOSA

NATURALIDADE

RIBEIRÃO PRETO - SP

DATA DE NASCIMENTO

13/06/2000

DOC ORIGEM

RIBEIRÃO PRETO - SP CAMPOS ELÍSIOS CN:LV.A129/FLS:030/ Nº66553

CPF

318101328/51

ASSINATURA DO DIRETOR

SEGUNDO TABELIÃO DE NOTAS

Av. Prof. João Fiusa, 970 - Rib. Preto-SP

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RIB. PRETO SP 17 OUT. 2024

Paula Carolina Amarante Farinelli - Escrevente

Aldo Dias Borborema - Subst. Tabelião

Selos pagos por verba

VÁLIDO SOMENTE COM SELO DE AUTENTICIDADE

123877 AUTENTICAÇÃO

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SEGUNDO TABELIÃO DE NOTAS

Leandro Daniel Pereira

Escrevente

RIBEIRÃO PRETO - SP

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Oficial Delegado
15 MAIO 2025
Oficial de Registro Civil das Pessoas Naturais e de Interdições e Tutelas do 1º Subdistrito da Sede de Ribeirão Preto (SP)
Luiz Fernando Alajo Silva - Escrevente
Bel. Fábio de Freitas Alves Suriani - Escrevente
Os Pagos Somente Valor Selo

15ª ALTERAÇÃO E CONSOLIDAÇÃO DO CONTRATO SOCIAL

"E.R. SOLUÇÕES INFORMÁTICA LTDA"

CNPJ: 05.778.325/0001-13
NIRE (JUCESP): 35217771512

GEORGE EDUARDO SALIBY, brasileiro, separado judicialmente, natural de Ribeirão Preto/SP, empresário, portador da Cédula de Identidade RG nº 7.854.271-6 SSP/SP e do CPF(MF) nº 982.913.358-34, residente à Rua Florencio Rosario nº 225, Apto 162, Edifício Hydepark, Bosque das Juritis, CEP 14021-675, na cidade de Ribeirão Preto, Estado de São Paulo; e

ANDRÉ LUIS MACHADO PELICIONI, brasileiro, casado em regime de comunhão parcial de bens, natural de Ribeirão Preto/SP, empresário, portador da Cédula de Identidade RG nº 18.658.107 SSP/SP e do CPF nº 248.785.548-78, residente à Avenida Giuseppe Cilento nº 1811, Apto 302, Jardim Botânico, CEP 14021-650, na cidade de Ribeirão Preto, Estado de São Paulo.

Sócios componentes da sociedade empresária, limitada, que gira na praça de Ribeirão Preto, Estado de São Paulo, na Avenida Senador César Vergueiro nº 1.069, Salas 04 e 05, Jardim São Luis, CEP 14020-500, sob o nome empresarial **"E.R. SOLUÇÕES INFORMÁTICA LTDA"**, conforme Contrato Social registrado sob nº 35217771512 em 07/07/2003 na Junta Comercial do Estado de São Paulo, inscrita no CNPJ (MF) nº 05.778.325/0001-13, tem entre si, justo e contratado, proceder a presente alteração, de acordo com o que dispõe a cláusula e condição a seguir:

A) – DA ABERTURA DE FILIAL

Os sócios decidem constituir uma nova unidade no município de **Serra**, Estado do **Espirito Santo**, sito à **Avenida Cem s/nº, Módulo 01, Quadra 01, Piso 2, Sala 01, Terminal Intermodal da Serra, CEP 29161-384**. Em virtude da abertura desta filial a Cláusula Terceira do Contrato Social passa a vigorar da seguinte forma:

"III
DA SEDE SOCIAL E FILIAL

A Sociedade tem sua sede social na Avenida Senador César Vergueiro nº 1.069, Salas 04 e 05, Jardim São Luis, CEP 14020-500, nesta cidade de Ribeirão Preto, Estado de São Paulo.

§ 1º - A Sociedade tem sua filial instalada na Avenida Cem s/n, Módulo 01, Quadra 01, Piso 2, Sala 01, Terminal Intermodal da Serra, CEP 29161-384 no município de Serra, Estado do Espirito Santo.

§ 2º - A sociedade poderá abrir e fechar filiais em qualquer parte do território nacional, com ou sem capitais autônomos para os devidos fins mediante alteração contratual."

DA CONSOLIDAÇÃO DAS CLÁUSULAS CONTRATUAIS

Em virtude da alteração acima, os sócios resolvem consolidar num só instrumento todas as cláusulas contratuais.

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1891

AUTENTICAÇÃO: Esta cópia confere com o original, a mim apresentado, Oscar Paes de Almeida Filho OFICIAL Delegado
15 MAIO 2025
Oficial de Registro Civil das Pessoas Naturais e de Interdições e Tutelas do 1º Subdistrito da Sede do Ribeirão Preto - SP
Luiz Fernando Alaixo Silva - Escrevente
Rel. Fábio de Freitas Alves Siqueira - Escrevente
AUTENTICAÇÃO
AU00682AI0748571

CONTRATO SOCIAL
E.R. SOLUÇÕES INFORMÁTICA LTDA

I
DO NOME EMPRESARIAL E SEU USO

A sociedade é empresária, do tipo limitada, gira sob o nome empresarial de **E.R. SOLUÇÕES INFORMÁTICA LTDA**, podendo assinar pela mesma ambos os sócios, sempre em conjunto, porém, única e exclusivamente em negócios que digam respeito aos interesses da sociedade, ficando vedado o uso da empresa em fianças, avais ou abonos, quer em favor deles sócios, quer em favor de terceiros.

II
DO OBJETO SOCIAL

A sociedade tem como objetivo a exploração do ramo de: **Comércio Atacadista, Varejista e Importação de Computadores, Eletroeletrônicos, Produtos de Informática, Telecomunicações, Eletrodomésticos em Geral, Produtos Congêneres, Equipamentos para Refrigeração, Condicionamento e Purificação de Ar e Representação Comercial por conta Própria e de Terceiros, Agenciamento e Intermediação, Prestação de Serviços de Assessoria, Consultoria, Treinamento e Implementação de Infraestrutura em Tecnologia Empresarial, Serviços de Assistência e Suporte Técnico, Locação e Licença de Uso de Software.**

III
DA SEDE SOCIAL E FILIAL

A Sociedade tem sua sede social na **Avenida Senador César Vergueiro nº 1.069, Salas 04 e 05, Jardim São Luis, CEP 14020-500**, nesta cidade **de Ribeirão Preto,** Estado de **São Paulo.**

§ 1º - A Sociedade tem sua filial instalada na **Avenida Cem s/nº, Módulo 01, Quadra 01, Piso 2, Sala 01, Terminal Intermodal da Serra, CEP 29161-384** no município de **Serra,** Estado do **Espirito Santo.**

§ 2º - A sociedade poderá a qualquer momento abrir e fechar filiais em qualquer parte do território nacional, com ou sem capitais autônomos para os devidos fins, mediante alteração contratual."

IV
DO CAPITAL SOCIAL

A sociedade tem o capital social de R$ 1.000.000,00 (um milhão de reais), dividido em 1.000.000 (um milhão) de quotas no valor de R$ 1,00 (um real) cada uma, totalmente subscritas e integralizadas em moeda nacional, distribuídas entre os sócios conforme segue:

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1892

George Eduardo Saliby	- 50 %		
* Seu Capital na sociedade.....	500.000 qts	R$	500.000,00
André Luis Machado Pelicioni	- 50 %		
* Seu Capital na sociedade.....	500.000 qts	R$	500.000,00
Total do Capital Social	**1.000.000 qts**	**R$**	**1.000.000,00**

§ 1º - A responsabilidade de cada sócio é restrita ao valor de suas quotas, mas ambos respondem solidariamente pela integralização do capital social;

§ 2º - As quotas são indivisíveis e não poderão ser cedidas ou transferidas sem o consentimento do outro sócio, a quem fica assegurado, em igualdade de condições e preço, direito de preferência para a sua aquisição se postas à venda, formalizando, se realizado a cessão delas, a Alteração Contratual pertinente.

V
DA DURAÇÃO DA SOCIEDADE

A sociedade tem sua duração por tempo indeterminado, considerando-se o seu início em 23 de Julho de 2003.

VI
DA ADMINISTRAÇÃO

A administração da sociedade é exercida por ambos os sócios, sempre em conjunto, com poderes e atribuições de realizar todas as operações para a consecução de seu objeto social, representando a sociedade ativa e passivamente, judicial e extrajudicialmente.

§ Único – Somente os administradores ficam autorizados a usar o nome empresarial, vedado, no entanto, em atividades estranhas ao interesse social ou assumir obrigações, seja em favor de qualquer quotista ou de terceiros, bem como onerar ou alienar bens e imóveis da sociedade, sem a autorização dos sócios.

VII
DA RETIRADA "PRÓ-LABORE"

Ambos os sócios terão direito a uma retirada mensal a título de Pró-Labore, que é levada a débito da conta de "despesas gerais" da sociedade, cujos níveis são fixados de comum acordo entre os sócios, dentro dos limites estabelecidos pela legislação vigente.

AUTENTICAÇÃO
Oscar Paes de Almeida Filho
OFICIAL Delegado
15 MAIO 2025
Registro Civil das Pessoas Naturais e de Interdições e Tutelas da Sede do Subdistrito
Luiz Fernando Alcina Sutto Ferraz
Oficial Substituto

VIII
DO EXERCÍCIO SOCIAL, BALANÇO E LUCROS

O exercício social se encerra a 31 de dezembro de cada ano, data em que será levantado o balanço patrimonial da sociedade, para apuração de resultados, conforme disposições legais pertinentes. Os lucros ou prejuízos apurados serão distribuídos ou suportados pelos sócios, observando-se o disposto nos parágrafos seguintes:

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1893

§ 1º - A sociedade poderá levantar balanços mensais, trimestrais ou semestrais e distribuir lucros e bonificações em dinheiro, com base nos mesmos;

§ 2º - A critério dos sócios e no atendimento dos interesses da própria sociedade, o total ou parte dos lucros verificados poderão ser destinados a formação de reservas de lucros ou então, permanecerão como Lucros Acumulados para futura destinação;

§ 3º - Os sócios acordam que a distribuição dos lucros apurados em Balanço Patrimonial e Demonstrativos de Resultados poderão ser distribuídos aos sócios desproporcionalmente ao Capital Social, conforme Artigo 1007 da Lei 10.406 de 10/01/2002.

IX
DO FALECIMENTO

Dando-se o falecimento ou interdição de qualquer um dos sócios, a sociedade continuará suas atividades com os herdeiros e sucessores. Não sendo possível ou inexistindo interesse destes ou do sócio remanescente, o valor de seus haveres será apurado e liquidado com base na situação patrimonial da sociedade, à data da resolução, verificada em balanço especialmente levantado.
§ Único – O mesmo procedimento será adotado em outros casos em que a sociedade se resolva em relação a seu sócio.

X
DA DECLARAÇÃO DE DESIMPEDIMENTO

Os administradores declaram sob as penas da lei, de que não estão impedidos de exercerem a administração da sociedade, por lei especial, ou em virtude de condenação criminal ou por se encontrarem sob os efeitos dela, a pena que vede, ainda que temporariamente, o acesso a cargos públicos ou por crime falimentar, de prevaricação, peita ou suborno, concussão, peculato ou contra a economia popular, contra o sistema financeiro nacional, contra normas de defesa da concorrência, contra as relações de consumo, fé pública ou a propriedade (art. 1.011, § 1º, CC/2002).

XI
DAS DIVERGENCIAS SOCIAIS

As divergências que se verificarem entre os sócios, inclusive no caso de falecimento de um deles, entre seus herdeiros e os remanescentes, serão resolvidas mediante Juízo Arbitral, ficando eleito o Foro desta Comarca de Ribeirão Preto, Estado de São Paulo para dirimir quaisquer dúvidas.

E assim, por estarem justos e contratados, obrigam-se livremente, a cumprirem o presente instrumento de **ALTERAÇÃO DE CONTRATO SOCIAL**, lavrado em 03 vias de igual teor e para o mesmo fim, assinado pelos sócios, na presença de duas testemunhas.

Ribeirão Preto/SP, 20 de maio de 2025.

AUTENTICAÇÃO: Esta cópia confere com o original, a mim apresentado. Oscar Paes de Almeida Filho. OFICIAL Delegado. 15 MAIO 2025. Oficial de Registro Civil das Pessoas Naturais e de Interdições e Tutelas do 1º Subdistrito da Sede do Subdistrito. Luiz Fernando Arruda Silva - Escrevente Aut. Bel. Fábio de Freitas Alves Sturari - Escrevente Aut. Selos Pagos por verba Art. 40 Prov. CSM. AUB62A10748573

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1894

George Eduardo Saliby

André Luis Machado Pelicioni

Testemunhas :

1) _____
Fernando Carvalho de Souza
RG 24.222.663-2 SSP/SP
CPF(MF) 248.470.408-99

2) _____
Carla Carvalho de Souza Nalini
RG 26.620.443-0 SSP/SP
CPF(MF) 213.813.768-60

JUCESP
25 JUN. 2020
SECRETARIA DE DESENVOLVIMENTO
GISELE SIMIEMA CESCHIN
SECRETÁRIA GERAL
203.526/20-0
JUCESP

AUTENTICAÇÃO: Esta cópia c... é cópia ... original, a mim apresentad...
Oscar Paes de Almeida Fil...
OFICIAL Delegado
15 MAIO 2025
Oficial de Registro Civil das Pessoas ... e de Interdições e Tutelas do 1º ... de Sede de Ribeirão Preto
Luiz Fernando Aliaxo ... - Escrev. Aut.
Bel. Fabio de Freitas Alves Sturari - Escrev. Aut.
Selos Pagos por verba Valor sol. RS
AUB562A07748574

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1895



Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1896


SP
GEORGE EDUARDO SALIBY
082.913.398-34
25/04/1984
JORGE SALIBY
NILZA APARECIDA DI
ROMEO SALIBY
AB
01769982068
26/01/2027
12/09/1974
RIBEIRAO PRETO, SP
20/01/2022
SÃO PAULO
2352831205
PROIBIDO PLASTIFICAR
AUTENTICAÇÃO
AUTENTICAÇÃO: Esta cópia confere com o original, a mim apresentado.
Oscar Paes de Almeida Filh.
OFICIAL Delegado
15 MAIO 2025
Selos Pagos por verba Valor aut. R$
Luiz Fernando Aloixo Silva - Escrev. Aut.
Bel. Fabio de Freitas Alves Siqueira - Escrev. Aut.
AA08824107418577

REPÚBLICA FEDERATIVA DO BRASIL

CADASTRO NACIONAL DA PESSOA JURÍDICA

NÚMERO DE INSCRIÇÃO	COMPROVANTE DE INSCRIÇÃO E DE SITUAÇÃO CADASTRAL	DATA DE ABERTURA
05.778.325/0005-47 **FILIAL**		**25/06/2020**

NOME EMPRESARIAL
E.R. SOLUCOES INFORMATICA LTDA

TÍTULO DO ESTABELECIMENTO (NOME DE FANTASIA)	PORTE
********	**DEMAIS**

CÓDIGO E DESCRIÇÃO DA ATIVIDADE ECONÔMICA PRINCIPAL
46.51-6-01 - Comércio atacadista de equipamentos de informática

CÓDIGO E DESCRIÇÃO DAS ATIVIDADES ECONÔMICAS SECUNDÁRIAS
46.14-1-00 - Representantes comerciais e agentes do comércio de máquinas, equipamentos, embarcações e aeronaves
47.51-2-01 - Comércio varejista especializado de equipamentos e suprimentos de informática
62.02-3-00 - Desenvolvimento e licenciamento de programas de computador customizáveis
62.04-0-00 - Consultoria em tecnologia da informação
62.09-1-00 - Suporte técnico, manutenção e outros serviços em tecnologia da informação
77.33-1-00 - Aluguel de máquinas e equipamentos para escritórios

CÓDIGO E DESCRIÇÃO DA NATUREZA JURÍDICA
206-2 - Sociedade Empresária Limitada

LOGRADOURO	NÚMERO	COMPLEMENTO
AV CEM	**S/N**	**QUADRA01 MODULO 01 SALA 01 PISO 2**

CEP	BAIRRO/DISTRITO	MUNICÍPIO	UF
29.161-384	**TERMINAL INTERMODAL DA SERRA**	**SERRA**	**ES**

ENDEREÇO ELETRÔNICO	TELEFONE
GSALIBY@ERSOLUCOES.COM.BR	**(16) 3234-4433**

ENTE FEDERATIVO RESPONSÁVEL (EFR)
*****

SITUAÇÃO CADASTRAL	DATA DA SITUAÇÃO CADASTRAL
ATIVA	**25/06/2020**

MOTIVO DE SITUAÇÃO CADASTRAL

SITUAÇÃO ESPECIAL	DATA DA SITUAÇÃO ESPECIAL
********	********

Aprovado pela Instrução Normativa RFB nº 2.119, de 06 de dezembro de 2022.

Emitido no dia **13/05/2025** às **16:02:23** (data e hora de Brasília). Página: **1/1**

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1898

CERTIDÃO SIMPLIFICADA

Sistema Nacional de Registro de Empresas Mercantis - SINREM

Certificamos que as informações abaixo constam dos documentos arquivados nesta Junta Comercial e são vigentes na data da sua expedição.

Nome Empresarial: E.R. SOLUCOES INFORMATICA LTDA **NIRE (filial):** 32900794301 **Natureza Jurídica:** Sociedade Empresária Limitada	**Protocolo:** ESC2500217020

Filial(ais) nesta Unidade da Federação

1- NIRE: 32900794301 **CNPJ:** 05.778.325/0005-47
Endereço Completo
AVENIDA CEM, Nº S/N, QUADRA 01 MODULO 01;SALA 01 PISO 2; , TERMINAL INTERMODAL DA SERRA, Serra, ES, CEP:29161384

Último Arquivamento **Data** 25/06/2020 **Número** 32900794301 **Ato/eventos** 310 / 029 - ABERTURA DE FILIAL COM SEDE EM OUTRA UF	**Situação** ATIVA **Status** SEM STATUS

Esta certidão foi emitida automaticamente em 15/04/2025, às 10:11:37 (horário de Brasília).
Se impressa, verificar sua autenticidade no **https://www.simplifica.es.gov.br**, com o código **MFE2JJII**.

Paulo Cezar Juffo
Secretário-Geral

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1899

GOVERNO DO ESTADO DE SÃO PAULO
SECRETARIA DE DESENVOLVIMENTO ECONÔMICO
JUNTA COMERCIAL DO ESTADO DE SÃO PAULO

CERTIDÃO SIMPLIFICADA

CERTIFICAMOS QUE AS INFORMAÇÕES ABAIXO CONSTAM DOS DOCUMENTOS ARQUIVADOS NESTA JUNTA COMERCIAL E SÃO VIGENTES NA DATA DE SUA EXPEDIÇÃO.

SE HOUVER ARQUIVAMENTOS POSTERIORES, ESTA CERTIDÃO PERDERÁ SUA VALIDADE.

A AUTENTICIDADE DESTA CERTIDÃO E A EXISTÊNCIA DE ARQUIVAMENTOS POSTERIORES, SE HOUVER, PODERÃO SER CONSULTADAS NO SITE WWW.JUCESPONLINE.SP.GOV.BR, MEDIANTE O CÓDIGO DE AUTENTICIDADE INFORMADO AO FINAL DO DOCUMENTO.

EMPRESA

NIRE	REGISTRO	DATA DA CONSTITUIÇÃO	INÍCIO DAS ATIVIDADES	PRAZO DE DURAÇÃO
35217771512		07/07/2003	23/06/2003	

NOME COMERCIAL	TIPO JURÍDICO
E.R. SOLUCOES INFORMATICA LTDA	SOCIEDADE LIMITADA

C.N.P.J.	ENDEREÇO	NÚMERO	COMPLEMENTO
05.778.325/0001-13	AVENIDA SENADOR CESAR VERGUEIRO	1.069	SALAS 04 E 05

BAIRRO	MUNICÍPIO	UF	CEP	MOEDA	VALOR CAPITAL
JARDIM SAO LUIS	RIBEIRAO PRETO	SP	14020-500	R$	1.000.000,00

OBJETO SOCIAL

COMÉRCIO ATACADISTA DE EQUIPAMENTOS DE INFORMÁTICA
REPRESENTANTES COMERCIAIS E AGENTES DO COMÉRCIO DE MÁQUINAS, EQUIPAMENTOS, EMBARCAÇÕES E AERONAVES
CONSULTORIA EM TECNOLOGIA DA INFORMAÇÃO
DESENVOLVIMENTO E LICENCIAMENTO DE PROGRAMAS DE COMPUTADOR CUSTOMIZÁVEIS
SUPORTE TÉCNICO, MANUTENÇÃO E OUTROS SERVIÇOS EM TECNOLOGIA DA INFORMAÇÃO
EXISTEM OUTRAS ATIVIDADES

SÓCIO E ADMINISTRADOR

NOME
ANDRE LUIS MACHADO PELICIONI

ENDEREÇO	NÚMERO	COMPLEMENTO
AVENIDA GIUSEPPE CILENTO	1811	APTO 302

BAIRRO	MUNICÍPIO	UF	CEP
JARDIM BOTANICO	RIBEIRAO PRETO	SP	14021-650

CPF	CARGO	QUANTIDADE COTAS
248.785.548-78	SÓCIO E ADMINISTRADOR	500.000,00

SÓCIO E ADMINISTRADOR

NOME
GEORGE EDUARDO SALIBY

ENDEREÇO	NÚMERO	COMPLEMENTO
RUA FLORENCIO ROSARIO - EDIFICIO HYDEPAR	225	APTO 162

BAIRRO	MUNICÍPIO	UF	CEP	RG
BOSQUE DAS JURITIS	RIBEIRAO PRETO	SP	14021-675	78542716

CPF	CARGO	QUANTIDADE COTAS
982.913.358-34	SÓCIO E ADMINISTRADOR	500.000,00

FILIAIS

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1900

NIRE	CNPJ		
32999052752	05.778.325/0004-66		
ENDEREÇO	NÚMERO	COMPLEMENTO	
RUA ATALYDES MOREIRA DE SOUZA	95	SL C8 LT 3 Q2	
BAIRRO	MUNICÍPIO	UF	CEP
CIVIT I	SERRA	ES	29168-055

NIRE	CNPJ		
32900794301	05.778.325/0005-47		
ENDEREÇO	NÚMERO	COMPLEMENTO	
AVENIDA CEM	SN	M1 Q1 P2 S1	
BAIRRO	MUNICÍPIO	UF	CEP
TERMINAL INTERMODAL	SERRA	ES	29161-384

ÚLTIMO DOCUMENTO ARQUIVADO

DATA	NÚMERO
25/06/2020	203.526/20-0

ALTERAÇÃO DOS DADOS CADASTRAIS DE ANDRE LUIS MACHADO PELICIONI, NACIONALIDADE BRASILEIRA, RAÇA/COR: NÃO DECLARADA, CPF: 248.785.548-78, RESIDENTE À AVENIDA GIUSEPPE CILENTO, 1811, APTO 302, JARDIM BOTANICO, RIBEIRAO PRETO - SP, CEP 14021-650, NA SITUAÇÃO DE SÓCIO E ADMINISTRADOR, ASSINANDO PELA EMPRESA, COM VALOR DE PARTICIPAÇÃO NA SOCIEDADE DE $ 500.000,00.

REMANESCENTE GEORGE EDUARDO SALIBY, NACIONALIDADE BRASILEIRA, RAÇA/COR: NÃO DECLARADA., CPF: 982.913.358-34, RG/RNE: 7.854.271-6 - SP, RESIDENTE À RUA FLORENCIO ROSARIO - EDIFICIO HYDEPAR, 225, APTO 162, BOSQUE DAS JURITIS, RIBEIRAO PRETO - SP, CEP 14021-675, NA SITUAÇÃO DE SÓCIO E ADMINISTRADOR, ASSINANDO PELA EMPRESA, COM VALOR DE PARTICIPAÇÃO NA SOCIEDADE DE $ 500.000,00.

ABERTURA DE FILIAL NIRE 32900794301, CNPJ 05.778.325/0005-47, SITUADA À: AVENIDA CEM, SN, M1 Q1 P2 S1, TERMINAL INTERMODAL, SERRA - ES, CEP 29161-384, COM OBJETO DESTACADO DE COMÉRCIO ATACADISTA DE EQUIPAMENTOS DE INFORMÁTICA, REPRESENTANTES COMERCIAIS E AGENTES DO COMÉRCIO DE MÁQUINAS, EQUIPAMENTOS, EMBARCAÇÕES E AERONAVES, CONSULTORIA EM TECNOLOGIA DA INFORMAÇÃO, DESENVOLVIMENTO E LICENCIAMENTO DE PROGRAMAS DE COMPUTADOR CUSTOMIZÁVEIS E SUPORTE TÉCNICO, MANUTENÇÃO E OUTROS SERVIÇOS EM TECNOLOGIA DA INFORMAÇÃO. COM INÍCIO DAS ATIVIDADES: 20/05/2020.

CONSOLIDAÇÃO CONTRATUAL DA MATRIZ.

FIM DAS INFORMAÇÕES PARA NIRE: 35217771512
DATA DA ÚLTIMA ATUALIZAÇÃO DA BASE DE DADOS: 05/05/2025

JUCESP SÃO PAULO documento assinado digitalmente

Certidão Simplificada. Documento certificado por ALOIZIO EPIFANIO SOARES JUNIOR, Secretário Geral da Jucesp. A Junta Comercial do Estado de São Paulo, garante a autenticidade deste documento quando visualizado diretamente no portal www.jucesponline.sp.gov.br sob o número de autenticidade 265136990, segunda-feira, 5 de maio de 2025 às 13:44:27.

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1901

SINTEGRA/ICMS
Consulta Pública ao Cadastro
Estado do Espírito Santo

Cadastro atualizado até: 05/05/2025

IDENTIFICAÇÃO - PESSOA JURÍDICA

CNPJ:	05778325000547	**Inscrição Estadual:**	083.668.15-2
Razão Social:	E.R. SOLUCOES INFORMATICA LTDA		

ENDEREÇO

Logradouro:	AVENIDA CEM		
Número:	S/N	**Complemento:**	QUADRA 01 MODULO 01;SALA 01 PISO 2;
Bairro:	TERMINAL INTERMODAL DA SERRA		
Município:	SERRA	**UF:**	ES
CEP:	29161384	**Telefone:**	(27) 30192636

INFORMAÇÕES COMPLEMENTARES

Atividade Econômica:

COMERCIO ATACADISTA DE EQUIPAMENTOS DE INFORMATICA

COM VAREJ ESPECIALIZADO DE EQUIPAMENTOS E SUPRIMENTOS DE INFORMATICA.

REPRES COMERCIAIS E AG DO COM DE MAQUINAS, EQUIP, EMBARC E AERONAVES

DESENVOLVIMENTO E LICENCIAMENTO PROGRAMAS COMPUTADOR CUSTOMIZAVEIS

CONSULTORIA EM TECNOLOGIA DA INFORMACAO

SUPORTE TECNICO,MANUTENCAO E OUTROS SERVICOS EM TECNOLOGIA DA INFORMAC

Data de Inicio de Atividade:	10/07/2020
Situação Cadastral Vigente:	HABILITADO
Data desta Situação Cadastral:	10/07/2020
Regime de Apuração:	ORDINÁRIO
Devedor contumaz:	Não

A Inscrição Estadual (IE) com situação cadastral vigente **HABILITADO** indica que a empresa está **APTA** a realizar operações como contribuinte do ICMS.

Já a IE com situação cadastral **NÃO HABILITADA** indica que a empresa **NÃO** está **APTA** a realizar operações como contribuinte do ICMS, caso mantenha entre as suas atividades pelo menos um CNAE cuja inscrição estadual seja obrigatória. Caso a empresa não pertença a um CNAE cuja inscrição seja obrigatória e o CNPJ esteja ATIVO (consultar o site da Receita Federal do Brasil ? http://www.receita.fazenda.gov.br), a empresa poderá ser destinatária de mercadorias, bens e serviços **como CONSUMIDOR FINAL**. Neste caso, o número da Inscrição Estadual NÃO deverá constar em documentos que acobertem operações tributáveis pelo ICMS.

A lista dos CNAEs obrigados à Inscrição Estadual está disponível no endereço: ftp://ftp.sefaz.es.gov.br/CNAE-F/cnaes_obrigadas_a_inscricao.pdf

OBSERVAÇÃO: Os dados acima são baseados em informações fornecidas pelo contribuinte, estando sujeitos a posterior confirmação pelo Fisco.

Data da Consulta: 05/05/2025

VOLTAR

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Av. João Batista Parra . nº600 . Ed. Aureliano Hoffman . Enseada do Suá . Vitória-ES
CEP: 29050-375 . CNPJ: 27.080.571/0001-30

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1902

ESTADO DO ESPIRITO SANTO
SECRETARIA DE ESTADO
DA FAZENDA SUPERINTENDÊNCIA
DA RECEITA

INSCRIÇÃO ESTADUAL

Inscrição Estadual: 083668152

Número de Controle 130735

Protocolo REDESIM ESL2000134281

Nome Empresarial: E.R. SOLUCOES INFORMATICA LTDA

Nome Fantasia: E.R SOLUÇÕES

CNPJ: 05.778.325/0005-47

Atividade principal (CNAE): 4651-6/01 - Comércio atacadista de equipamentos de informática

Atividade secundária (CNAE): 6209-1/00 - Suporte técnico, manutenção e outros serviços em tecnologia da informação, 4614-1/00 - Representantes comerciais e agentes do comércio de máquinas, equipamentos, embarcações e aeronaves, 6202-3/00 - Desenvolvimento e licenciamento de programas de computador customizáveis, 4751-2/01 - Comércio varejista especializado de equipamentos e suprimentos de informática, 6204-0/00 - Consultoria em tecnologia da informação

Endereço do estabelecimento: AVENIDA CEM, S/N, QUADRA 01 MODULO 01;SALA 01 PISO 2;, TERMINAL INTERMODAL DA SERRA, CEP: 29161384

Muncípio: Serra

Este documento foi emitido em : **sexta, 10 de julho de 2020**
Se impresso, verificar sua autenticidade em www.simplifica.es.gov.br utilizando o código **XKEZBPL4**
DOCUMENTO EMITIDO ELETRONICAMENTE PELO SIMPLIFICA ESPÍRITO SANTO
Esse documento deverá permanecer exposto em local visível no estabelecimento empresarial

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1903

ESTADO DO
PREFEITURA MUNICIPAL DA SERRA
SECRETARIA MUNICIPAL DA FAZENDA

INSCRIÇÃO MUNICIPAL
Número 4709131

Nome da Empresa: E.R. SOLUCOES INFORMATICA LTDA

CNPJ: 05.778.325/0005-47

Atividade Principal(CNAE): 4651-6/01 - Comércio atacadista de equipamentos de informática

Atividade(s) Secundária(s) (CNAE): 6209-1/00 - Suporte técnico, manutenção e outros serviços em tecnologia da informação, 4614-1/00 - Representantes comerciais e agentes do comércio de máquinas, equipamentos, embarcações e aeronaves, 6202-3/00 - Desenvolvimento e licenciamento de programas de computador customizáveis, 4751-2/01 - Comércio varejista especializado de equipamentos e suprimentos de informática, 6204-0/00 - Consultoria em tecnologia da informação

Endereço: AVENIDA CEM, S/N, QUADRA 01 MODULO 01;SALA 01 PISO 2;, TERMINAL INTERMODAL DA SERRA

Município: Serra

CEP: 29161384

Local e data: Serra, quarta, 22 de julho de 2020

Secretaria Municipal da Fazenda

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1904

PREFEITURA MUNICIPAL DA SERRA

Secretaria Municipal de Finanças

Departamento de Administração Tributária

ALVARÁ DE LICENÇA PARA FUNCIONAMENTO 4229/2024

Data Abertura Empresa	N° Inscriçao Municipal	N° Processo Administrativo	Validade
	4709131	**54314**	**04/04/2027**

Contribuinte

Nome E.R. SOLUCOES INFORMATICA LTDA

CNPJ/CPF 05.778.325/0005-47

RG/Insc

Endereço

Logradouro AVENIDA CEM, 0 **Cep** 29161-384

Complemento S/N, QUADRA 01 MOD 01 SALA 01 PISO 2

Bairro TERMINAL INTERMODAL DA SERRA

Cidade SERRA **Estado** ES

Atividade Principal

4651-6/01 Comércio atacadista de equipamentos de informática

Observações

Atividades

4614-1/00	Representantes comerciais e agentes do comércio de máquinas, equipamentos, embarcações e aeronaves
4651-6/01	Comércio atacadista de equipamentos de informática
4751-2/01	Comércio verejista especializado de equipamentos e suprimento de informática
6202-3/00	Desenvolvimento e licenciamento de programas de computador customizáveis
6204-0/00	Consultoria em tecnologia da informação
6209-1/00	Suporte técnico, manutenção e outros serviços em tecnologia da informação
7733-1/00	Aluguel de máquinas e equipamentos para escritórios

Informações Complementares

1 - A validade deste alvará está condicionada ao cumprimento dos requisitos previstos no §2º do Art. 1º do Decreto nº 6877/2015 c/c Lei 4398/2015, bem como, à validade dos documentos apresentados no ato da solicitação.

2 - Independente do prazo de validade deste documento, o pagamento das Taxas de Poder de Polícia, dar-se-á anualmente.

3 - Este alvará perderá a validade, automaticamente, caso ocorra alteração na localização, atividades ou situação da inscrição municipal da empresa, devendo ser observado o disposto no art. 19 c/c art. 3º do Decreto 6877/2015.

Tanto a veracidade da informação quanto a manutenção da condição de não devedor poderá ser verificada na seguinte página da Internet: **https://tributacao.serra.es.gov.br:8080/tbserra**

Nro Autenticação 4229/2024

Gerado em: 10/07/2024 **Emitido em:** 10/07/2024

Autenticar documento em https://prefeiturasempapel.serra.es.gov.br/autenticidade
com o identificador 3100300035003000320031003A00540052004100, para verificar o documento assinado digitalmente conforme art. 4º, II da Lei 14.063/2020.

MINISTÉRIO DA FAZENDA
SECRETARIA DA RECEITA FEDERAL DO BRASIL
SISTEMA PÚBLICO DE ESCRITURAÇÃO DIGITAL – Sped **Versão: 10.3.2**

RECIBO DE ENTREGA DE ESCRITURAÇÃO CONTÁBIL DIGITAL

IDENTIFICAÇÃO DO TITULAR DA ESCRITURAÇÃO

NIRE	CNPJ	
35217771512	05.778.325/0001-13	
NOME EMPRESARIAL		
E.R. SOLUCOES INFORMATICA LTDA		

IDENTIFICAÇÃO DA ESCRITURAÇÃO

FORMA DA ESCRITURAÇÃO CONTÁBIL	PERÍODO DA ESCRITURAÇÃO
Livro Diário (Completo - sem escrituração Auxiliar)	01/01/2024 a 31/12/2024
NATUREZA DO LIVRO	**NÚMERO DO LIVRO**
LIVRO DIÁRIO COMPLETO	19
IDENTIFICAÇÃO DO ARQUIVO (HASH)	
DD.A2.AE.7B.E4.64.14.70.20.53.82.0C.7D.BF.26.D8.04.EB.97.A6	
ARQUIVOS SUBSTITUÍDOS (HASH)	

ESTE LIVRO FOI ASSINADO COM OS SEGUINTES CERTIFICADOS DIGITAIS:

QUALIFICAÇÃO DO SIGNATARIO	CPF/CNPJ	NOME	Nº SÉRIE DO CERTIFICADO	VALIDADE	RESPONSÁVEL LEGAL
Contador	24847040899	FERNANDO CARVALHO DE SOUZA:24847040899	608355935802658247 8	09/01/2025 a 09/01/2026	Não
Pessoa Jurídica (e-CNPJ ou e-PJ)	05778325000113	E R SOLUCOES INFORMATICA LTDA: 05778325000113	748030515766212020 9	04/02/2025 a 04/02/2026	Sim

NÚMERO DO RECIBO:

DD.A2.AE.7B.E4.64.14.70.20.53.82.0C.
7D.BF.26.D8.04.EB.97.A6-0

Escrituração recebida via Internet
pelo Agente Receptor SERPRO

em 24/04/2025 às 17:21:55

49.96.07.7B.3B.4B.1D.4F
75.BC.40.09.FC.02.DB.C0

Considera-se autenticado o livro contábil a que se refere este recibo, dispensando-se a autenticação de que trata o art. 39 da Lei nº 8.934/1994. Este recibo comprova a autenticação.

BASE LEGAL: Decreto nº 1.800/1996, com a alteração do Decreto nº 8.683/2016, e arts. 39, 39-A, 39-B da Lei nº 8.934/1994 com a alteração da Lei Complementar nº 1247/2014.

TERMOS DE ABERTURA E ENCERRAMENTO

Entidade:	E.R. SOLUCOES INFORMATICA LTDA		
Período da Escrituração:	01/01/2024 a 31/12/2024	CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	19		
Período Selecionado:	01 de janeiro de 2024 a 31 de dezembro de 2024		

TERMO DE ABERTURA

Nome Empresarial	E.R. SOLUCOES INFORMATICA LTDA
NIRE	35217771512
CNPJ	05.778.325/0001-13
Número de Ordem	19
Natureza do Livro	LIVRO DIÁRIO COMPLETO
Município	RIBEIRAO PRETO
Data do arquivamento dos atos constitutivos	07/07/2003
Data de arquivamento do ato de conversão de sociedade simples em sociedade empresária	
Data de encerramento do exercício social	31/12/2024
Quantidade total de linhas do arquivo digital	64348

TERMO DE ENCERRAMENTO

Nome Empresarial	E.R. SOLUCOES INFORMATICA LTDA
Natureza do Livro	LIVRO DIÁRIO COMPLETO
Número de ordem	19
Quantidade total de linhas do arquivo digital	64348
Data de inicio	01/01/2024
Data de término	31/12/2024

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número DD.A2.AE.7B.E4.64.14.70.20.53.82.0C.7D.BF.26.D8.04.EB.97.A6-0, nos termos do Decreto nº 8.683/2016.

Este relatório foi gerado pelo Sistema Público de Escrituração Digital – Sped

Versão 10.3.2 do Visualizador

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1907

BALANÇO PATRIMONIAL

Entidade:	E.R. SOLUCOES INFORMATICA LTDA
Período da Escrituração:	01/01/2024 a 31/12/2024
CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	19
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Descrição	Nota	Saldo Inicial	Saldo Final
A T I V O		R$ 14.156.029,30	R$ 22.029.223,42
ATIVO CIRCULANTE		R$ 9.661.004,36	R$ 16.611.272,65
DISPONIVEL		R$ 1.930,04	R$ 10.929,15
CAIXA GERAL		R$ 1.918,04	R$ 10.928,15
CAIXA		R$ 1.918,04	R$ 10.928,15
BANCOS - CONTAS CORRENTES		R$ 12,00	R$ 1,00
BANCO BRADESCO S/A		R$ 1,00	R$ 0,00
BANCO ITAU S/A		R$ 10,00	R$ 1,00
BANCO BRADESCO S/A - FILIAL		R$ 1,00	R$ 0,00
REALIZAVEL A CURTO PRAZO		R$ 9.659.074,32	R$ 16.600.343,50
DUPLICATAS A RECEBER		R$ 5.584.719,36	R$ 9.992.953,33
ADRIANO DA SILVA		R$ 1.539,90	R$ 0,00
AGIS EQUIPAMENTOS E SERVICOS DE INFORMATICA LTDA		R$ 0,00	R$ 699,49
ALEXANDRE BIANCHI BARICHELLO		R$ 0,00	R$ 1.138,88
ANY LIFE GESTAO PATRIMONIAL S.A.		R$ 6.226,67	R$ 0,00
ASE-IT SOLUCOES EM TECNOLOGIA LTDA		R$ 290.990,76	R$ 0,00
CAMARA MUNICIPAL DE BAURU		R$ 0,00	R$ 561.780,00
CASA CIVIL		R$ 1.003.000,00	R$ 0,00
COMANDO DA DECIMA REGIAO MILITAR		R$ 16.798,00	R$ 0,00
CONTROLADORIA E OUVIDORIA GERAL DO ESTADO		R$ 318.450,00	R$ 0,00
ELICA CRISTINA XAVIER		R$ 0,00	R$ 3.160,00
FUND DE APOIO AO ENSINO PESQ E ASSISTENCIA HCFMRP-USP		R$ 0,00	R$ 180.126,00
FUNDACAO DE APOIO AO INSTITUTO DE PESQUISAS TECNOLOGICAS FIP		R$ 0,00	R$ 359.500,00
FUNDACAO HOSPITAL SANTA LYDIA		R$ 88.069,73	R$ 71.833,75
FUNDACAO PARA O DESENVOLVIMENTO MEDICO E HOSPITALAR		R$ 2.834,00	R$ 3.161,00
FUNDACAO PARA O DESENVOLVIMENTO MEDICO E HOSPITALAR		R$ 2.793,40	R$ 2.793,40
FUNDACAO PARA O DESENVOLVIMENTO MEDICO E HOSPITALAR		R$ 63.997,90	R$ 3.904,50
FUNDACAO PARA O		R$ 3.106,40	R$ 3.869,40

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número DD.A2.AE.7B.E4.64.14.70.20.53.82.0C.7D.BF.26.D8.04.EB.97.A6-0, nos termos do Decreto nº 8.683/2016.

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Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1908

BALANÇO PATRIMONIAL

Entidade:	E.R. SOLUCOES INFORMATICA LTDA
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Período Selecionado:	01 de janeiro de 2024 a 31 de dezembro de 2024

Descrição	Nota	Saldo Inicial	Saldo Final
DESENVOLVIMENTO MEDICO E HOSPITALAR FAMESP			
FUNDACAO PARA O DESENVOLVIMENTO MEDICO E HOSPITALAR OSS		R$ 8.493,10	R$ 7.727,50
FUNDACAO PARA O DESENVOLVIMENTO MEDICO E HOSPITALAR OSS		R$ 2.491,30	R$ 2.108,50
FUNDACAO PARA O DESENVOLVIMENTO MEDICO E HOSPITALAR OSS		R$ 4.136,32	R$ 7.320,32
FUNDO DE MODERNIZACAO DO TRIBUNAL DE CONTAS DO ESTADO DE ROR		R$ 0,00	R$ 61.700,00
FUNDO MUNICIPAL DE CULTURA		R$ 94.400,00	R$ 0,00
FUNDO MUNICIPAL DE SAUDE DE MARABA		R$ 2.859,96	R$ 0,00
GAUDIUM FESTAS E EVENTOS LTDA		R$ 0,00	R$ 1.500,00
GOIAS TRIBUNAL DE CONTAS		R$ 171.000,00	R$ 0,00
INGRAM MICRO BRASIL LTDA		R$ 0,00	R$ 2.639,80
INSPECAO BRASIL SERVICOS OPERACOES PORTUARIAS LTDA		R$ 18.750,00	R$ 6.920,00
INSTITUTO FEDERAL DE EDUCACAO, CIENCIA E TECNOLOGIA DE SANTA		R$ 0,00	R$ 10.190,00
INSTITUTO FEDERAL DE EDUCACAO, CIENCIA E TECNOLOGIA DE SAO P		R$ 196.900,00	R$ 0,00
KNORR BREMSE SVCB LTDA.		R$ 372.509,75	R$ 0,00
KNORR-BREMSE SISTEMAS P/ VEICULOS FERROVIARIOS LTDA.		R$ 178.695,10	R$ 0,00
LENOVO TECNOLOGIA (BRASIL) LIMITADA		R$ 18.000,00	R$ 0,00
LENOVO TECNOLOGIA BRASIL LIMITADA		R$ 8.700,00	R$ 113.874,46
LOHAYNE SASSI SANTANA		R$ 0,00	R$ 900,00
MARCUSSI E DE LAZZARI ACADEMIA LTDA		R$ 0,00	R$ 11.380,00
MIRIAM PADUIM DE SOUZA RIBEIRO DA SILVA		R$ 0,00	R$ 300,00
MUNICIPIO DE HORTOLANDIA		R$ 72,86	R$ 0,00
MUNICIPIO DE MOGI-GUACU		R$ 248.214,00	R$ 248.214,00
MUNICIPIO DE PATROCINIO PAULISTA		R$ 27.660,00	R$ 0,00
MUNICIPIO DE POA		R$ 232.000,00	R$ 0,00
MUNICIPIO DE VINHEDO		R$ 92.400,00	R$ 0,00

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1909

BALANÇO PATRIMONIAL

Entidade:	E.R. SOLUCOES INFORMATICA LTDA
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CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	19
Período Selecionado:	01 de janeiro de 2024 a 31 de dezembro de 2024

Descrição	Nota	Saldo Inicial	Saldo Final
PACER ASSESSORIA ESPORTIVA LTDA ME		R$ 0,00	R$ 900,00
PACER NOVA ALIANCA ACADEMIA LTDA		R$ 9.000,00	R$ 0,00
PARA MINISTERIO PUBLICO		R$ 738.500,00	R$ 0,00
PREFEITURA MUNICIPAL DE FRANCA		R$ 108.749,88	R$ 0,00
PROCURADORIA GERAL DE JUSTICA DO ESTADO DO AMAZONAS		R$ 1.103.000,00	R$ 0,00
SANTA HELENA IND. DE ALIM. S/A		R$ 8.694,85	R$ 3.840,00
SERVICO AUTONOMO DE AGUA E ESGOTOS DE BEBEDOURO		R$ 39.000,00	R$ 0,00
SERVICO NACIONAL DE APRENDIZAGEM COMERCIAL		R$ 0,00	R$ 8.139.500,00
SERVICO NACIONAL DE APRENDIZAGEM COMERCIAL - SENAC		R$ 1.390,00	R$ 0,00
TD SYNNEX BRASIL LTDA		R$ 0,00	R$ 7.128,44
TRIBUNAL REGIONAL ELEITORAL DE ALAGOAS		R$ 5.600,00	R$ 0,00
ULTRA-SOM EQUIPAMENTOS MEDICOS EIRELI		R$ 504,00	R$ 0,00
UNIVERSIDADE ESTADUAL DE PONTA GROSSA		R$ 0,00	R$ 65.360,00
UZINAS CHIMICAS BRASILEIRAS S A		R$ 0,00	R$ 3.000,00
WINSPIRE SOL C/TECNOLOGIA INTELIGENTE LTDA		R$ 95.191,48	R$ 106.483,89
APLICACOES FINANCEIRAS DE RENDA FIXA		R$ 3.255.929,21	R$ 4.658.707,10
BANCO ITAU S/A - APLIC AUT MAIS		R$ 47.079,28	R$ 348.028,29
BANCO ITAU S/A - CDB - DI		R$ 1.059.494,76	R$ 2.864.585,64
BANCO BRADESCO S/A - INVEST FACIL		R$ 509,61	R$ 0,00
BANCO BRADESCO S/A - INVEST FACIL FILIAL		R$ 2.164,59	R$ 0,01
BANCO DO BRASIL CDB		R$ 2.096,63	R$ 649,77
BANCO ITAU S/A RF FICFI		R$ 0,00	R$ 368.507,30
RENDE FACIL B.BRASIL - MATRIZ		R$ 608.032,72	R$ 264.978,21
RENDE FACIL B.BRASIL - FILIAL		R$ 1.536.551,62	R$ 811.957,88
APLICACOES FINANCEIRAS DE RENDA VARIAVEL		R$ 21.760,00	R$ 21.760,00
APLICACOES EM ACOES		R$ 21.760,00	R$ 21.760,00
ADIANTAMENTOS A FORNECEDORES		R$ 21.917,75	R$ 9.053,41
ADIANTAMENTOS A FORNECEDORES		R$ 20.917,75	R$ 8.082,25

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1910

BALANÇO PATRIMONIAL

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Descrição	Nota	Saldo Inicial	Saldo Final
UNIKA LOGISTICA		R$ 1.000,00	R$ 971,16
EMPRESTIMOS		R$ 9.000,00	R$ 1.500,00
EMPRESTIMOS A EMPREGADOS		R$ 9.000,00	R$ 1.500,00
IMPOSTOS A RECUPERAR / COMPENSAR		R$ 150.027,43	R$ 30.748,98
ICMS A RECUPERAR		R$ 119.298,21	R$ 13,18
OUTROS CREDITOS A RECUPERAR		R$ 12,73	R$ 12,83
IRRF - PESSOA JURIDICA A RECUPERAR		R$ 0,00	R$ 6,48
PIS RETIDO A COMPENSAR		R$ 786,69	R$ 786,69
COFINS RETIDO A COMPENSAR		R$ 3.626,71	R$ 3.626,71
INSS A RECUPERAR		R$ 2.343,04	R$ 2.343,04
PIS - SALDO PED ELETR DE RESSARCIMENTO		R$ 7.092,15	R$ 7.092,15
IRPJ PERD/DCOMP RESSARCIMENTO		R$ 16.867,90	R$ 16.867,90
ESTOQUES DE MERCADORIAS PARA REVENDA		R$ 507.169,93	R$ 1.875.626,64
MERCADORIAS PARA REVENDA		R$ 374.509,22	R$ 80.012,79
MERCADORIAS PARA REVENDA - FILIAL		R$ 132.660,71	R$ 1.795.613,85
OUTRAS CONTAS REALIZAVEIS A CURTO PRAZO		R$ 9.994,04	R$ 9.994,04
CAUCAO		R$ 1.709,00	R$ 1.709,00
OUTROS CREDITOS A RECEBER		R$ 8.285,04	R$ 8.285,04
TRANSFERÊNCIA DE MERCADORIA		R$ 98.556,60	R$ 0,00
TRANSFERÊNCIA DE MERCADORIA		R$ 98.556,60	R$ 0,00
ATIVO NAO CIRCULANTE		R$ 4.495.024,94	R$ 5.417.950,77
ATIVO REALIZAVEL A LONGO PRAZO		R$ 0,00	R$ 0,00
COBRANCA EM EXECUCAO		R$ 79.127,64	R$ 62.000,00
CRISTHIAN EDUARDO INSFRAN DELGADO		R$ 3.900,00	R$ 0,00
PREFEITURA MUNICIPIO DE ITUPEVA		R$ 62.000,00	R$ 62.000,00
SILVIO MARÇAL ORLANDINI MATÃO		R$ 7.726,57	R$ 0,00
FUNDAÇÃO PARA O DESENV. MEDICO		R$ 1.054,30	R$ 0,00
FUNDAÇÃO DESENV MEDICO 46.230.439/0003-73		R$ 2.182,09	R$ 0,00
FUNDAÇÃO DESENV MEDICO 46.230.439/008-88		R$ 574,20	R$ 0,00

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1911

BALANÇO PATRIMONIAL

Entidade:	E.R. SOLUCOES INFORMATICA LTDA
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CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	19
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Descrição	Nota	Saldo Inicial	Saldo Final
FUNDAÇÃO DESENV MEDICO 46.230.439/0010-00		R$ 765,60	R$ 0,00
FUNDAÇÃO DESENV MEDICO 46.230.439/0013-45		R$ 828,38	R$ 0,00
FUNDAÇÃO DESENV MEDICO 46.230.439/0015-07		R$ 96,50	R$ 0,00
(-) (-)DEDUCOES DO REALIZAVEL A LONGO PRAZO		R$ (79.127,64)	R$ (62.000,00)
(-) (-) PERDAS NO RECEBIMENTO DE CREDITOS		R$ (79.127,64)	R$ (62.000,00)
IMOBILIZADO		R$ 4.473.574,94	R$ 5.396.500,77
COMPRAS P/ ATIVO IMOBILIZADO		R$ 8.706.612,73	R$ 10.643.550,77
MOVEIS E UTENSILIOS		R$ 24.278,01	R$ 24.278,01
MAQUINAS E EQUIPAMENTOS		R$ 210.599,90	R$ 201.387,58
DIREITO DE USO MONITOR - LEASING - 686465		R$ 183.005,03	R$ 183.005,03
EQUIPAMENTOS DE INFORMATICA		R$ 4.233,41	R$ 0,00
VEICULOS		R$ 0,00	R$ 456.817,61
DIREITO DE USO DESKTOP - LEASING - 686465		R$ 1.376.115,03	R$ 1.376.115,03
INSTALAÇOES		R$ 8.000,00	R$ 8.000,00
MAQUINAS E EQUIPAMENTOS		R$ 74.191,75	R$ 0,00
APARELHOS DE TELECOMUNICACOES		R$ 11.898,27	R$ 11.898,27
EQUIPAMENTO DE INFORMATICA		R$ 571.335,38	R$ 0,00
EQUIPAMENTOS DE INFORMATICA		R$ 5.733.379,02	R$ 8.382.049,24
VEICULOS		R$ 85.865,57	R$ 0,00
VEICULOS		R$ 423.711,36	R$ 0,00
(-) (-) DEPRECIACAO ACUMULADA		R$ (4.233.037,79)	R$ (5.247.050,00)
(-) (-) DEPRECIACAO DE MOVEIS E UTENSILIOS		R$ (3.439,99)	R$ (3.844,39)
(-) (-) DEPRECIACAO DE EQUIPAMENTO DE INFORMATICA		R$ (2.675.421,84)	R$ (4.281.296,55)
(-) (-) DEPRECIACAO DE VEICULOS		R$ (451.569,29)	R$ (105.204,73)
(-) (-) DEPRECIACAO DE EQUIPAMENTOS DE INFORMATICA		R$ (936,09)	R$ 0,00
(-) (-) DPR.ACUM: DIREITO DE USO MONITOR - LE		R$ (51.850,76)	R$ (88.451,72)
(-) (-) DPR.ACUM: DIREITO DE USO DESKTOP - LE		R$ (389.894,65)	R$ (665.117,65)
(-) (-) DPR.ACUM: INSTALAÇOES		R$ (8.000,00)	R$ (8.000,00)

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1912

BALANÇO PATRIMONIAL

Entidade:	E.R. SOLUCOES INFORMATICA LTDA
Período da Escrituração:	01/01/2024 a 31/12/2024
CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	19
Período Selecionado:	01 de janeiro de 2024 a 31 de dezembro de 2024

Descrição	Nota	Saldo Inicial	Saldo Final
(-) (-) DPR.ACUM:MAQUINAS E EQUIPAMENTOS		R$ (74.191,75)	R$ (87.547,12)
(-) (-) DPR.ACUM:APARELHOS DE TELECOMUNICACOES		R$ (6.398,04)	R$ (7.587,84)
(-) (-) DPR.ACUM:EQUIPAMENTOS DE INFORMATICA		R$ (571.335,38)	R$ 0,00
INTANGIVEL		R$ 21.450,00	R$ 21.450,00
BENS INTANGIVEIS		R$ 21.450,00	R$ 21.450,00
SOFTWARES E LICENCAS		R$ 21.450,00	R$ 21.450,00
P A S S I V O		R$ 14.156.029,30	R$ 22.029.223,42
PASSIVO CIRCULANTE		R$ 8.000.992,77	R$ 12.962.714,78
FORNECEDORES - EXIGIVEIS A CURTO PRAZO		R$ 4.803.842,92	R$ 9.729.510,90
FORNECEDORES		R$ 4.803.842,92	R$ 9.729.510,90
2 TABELIAO DE NOTAS DE RIBEIRAO PRETO		R$ 119,60	R$ 172,38
4CM TINTAS LTDA		R$ 0,00	R$ 3.558,00
AGIS EQUIP. E SERV INFORMATICA LTDA		R$ 3.007,54	R$ 0,00
AISLAN JOSE ROSA LEO DE SOUSA 96533935534		R$ 0,00	R$ 450,00
AMWSYS TECNOLOGIA LTDA		R$ 1.698,65	R$ 1.853,57
AUDAX BUSINESS SOLUTIONS INFORMATICA LTDA ME		R$ 665,10	R$ 665,10
BABA MATERIAIS P CONSTRUCAO LTDA		R$ 0,00	R$ 2.332,00
CABOS VIEIRA COMERCIO E ACESSORIOS SOCIEDADE UNIPESSOAL LTDA		R$ 0,00	R$ 1.820,00
CENTRO ELETRONICO E COMERCIAL SETRON LTDA - EPP		R$ 441,45	R$ 441,45
COMPANHIA PAULISTA DE FORCA E LUZ		R$ 1.247,54	R$ 346,04
CONNECT OFFICE MATERIAL DE ESCRITORIO E		R$ 0,00	R$ 3.822,90
DELL COMPUTADORES DO BRASIL LTDA		R$ 0,00	R$ 693.506,56
DELL COMPUTADORES DO BRASIL LTDA		R$ 4.270,31	R$ 36.687,94
DELL COMPUTADORES DO BRASIL LTDA		R$ 18.508,55	R$ 5.766.500,78
ESCRITORIO CONTABIL SOUZA S/S LTDA		R$ 6.056,00	R$ 6.018,00
FASSIM LIDER IMPORTACAO E EXPORTACAO LTDA		R$ 0,00	R$ 7.714,63

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1913

BALANÇO PATRIMONIAL

Entidade:	E.R. SOLUCOES INFORMATICA LTDA
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Descrição	Nota	Saldo Inicial	Saldo Final
FORNEL FERRAGENS E ACESSORIOS LTDA		R$ 0,00	R$ 350,00
FUSION CREATIVE STUDIO LTDA		R$ 0,00	R$ 1.480,00
GABRIELA DE FARIA BARCELLOS SALIBY 31039868827		R$ 0,00	R$ 7.237,05
INGRAM MICRO BRASIL LTDA		R$ 5.477,22	R$ 0,00
LENOVO TECNOLOGIA BRASIL LTDA		R$ 4.683.345,84	R$ 3.153.331,71
MARTINS MOREIRA TRANSPORTE E LOGISTICA EIRELI		R$ 1.502,76	R$ 0,00
MARTINS MOREIRA TRANSPORTE E LOGISTICA EIRELI		R$ 21.795,10	R$ 0,00
MAZER DISTRIBUIDORA LTDA		R$ 13.540,00	R$ 0,00
METALURGICA CATAGUAZES EIRELI		R$ 15.000,01	R$ 0,00
MJF MATERIAL PARA ESCRITORIO EIRELI		R$ 1.356,00	R$ 0,00
NUBE NUCLEO BRASILEIRO DE ESTAGIOS LTDA		R$ 105,01	R$ 0,00
PASSALACQUA TECH LTDA		R$ 435,31	R$ 0,00
SRC CONSULTORIA E INTERMEDIACOES LTDA		R$ 20.000,00	R$ 20.000,00
SUZANO S.A.		R$ 254,58	R$ 0,00
TAM LINHAS AEREAS S/A		R$ 3.617,40	R$ 0,00
VALERIA NEVES DOS SANTOS		R$ 1.100,00	R$ 1.200,00
VMF TRANSPORTE E LOGISTICA LTDA		R$ 0,00	R$ 20.022,79
ZENAK COMERCIO DE MATERIAIS PARA ESCRITORIO LTDA		R$ 298,95	R$ 0,00
EMPRESTIMOS E FINANCIAMENTOS CURTO PRAZO		R$ 519.706,69	R$ 1.080.659,14
EMPRESTIMOS E FINANCIAMENTOS BANCARIOS		R$ 519.706,69	R$ 1.080.659,14
BANCO DO BRASIL - CAPITAL DE GIRO		R$ 0,00	R$ 451.294,06
BC DE LACE LANDEN BRASIL S.A - LEASING- CP		R$ 679.694,88	R$ 396.488,68
BC DE LACE LANDEN BRASIL S.A - LEASING- CP/ CONTR. 794733		R$ 0,00	R$ 887.151,72
(-) (-) JUROS S/ FINANCIAMENTOS A APROPRIAR		R$ (159.988,19)	R$ (93.326,43)
(-) JUROS A APROPRIAR BB CAPITAL DE GIRO		R$ 0,00	R$ (145.738,59)
(-) JUROS BC DE LACE LANDEN BRASIL S.A - LEASING- CP/ CONTR. 794733		R$ 0,00	R$ (415.210,30)
OBRIGACOES TRABALHISTAS		R$ 1.138.371,55	R$ 615.389,38

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1914

BALANÇO PATRIMONIAL

Entidade:	E.R. SOLUCOES INFORMATICA LTDA
Período da Escrituração:	01/01/2024 a 31/12/2024
CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	19
Período Selecionado:	01 de janeiro de 2024 a 31 de dezembro de 2024

Descrição	Nota	Saldo Inicial	Saldo Final
FOLHA DE PAGAMENTO DE EMPREGADOS		R$ 311.222,47	R$ 136.769,83
SALARIOS A PAGAR		R$ 311.222,47	R$ 136.769,83
PROVISAO PARA OBRIGACOES TRABALHISTAS		R$ 415.365,94	R$ 296.034,09
PROVISAO INSS S/FERIAS		R$ 81.475,74	R$ 59.020,30
PROVISAO FGTS S/FERIAS		R$ 24.783,30	R$ 17.952,49
PROVISAO DE FERIAS		R$ 309.106,90	R$ 219.061,30
PRO-LABORE DE DIRIGENTES A PAGAR		R$ 6.903,98	R$ 7.176,61
PRO-LABORE A PAGAR		R$ 6.903,98	R$ 7.176,61
ENCARGOS SOCIAIS A PAGAR		R$ 404.879,16	R$ 175.408,85
INSS A RECOLHER		R$ 140.188,69	R$ 73.845,41
FGTS A RECOLHER		R$ 46.092,74	R$ 24.145,33
CONTRIBUICOES A SINDICATOS A RECOLHER		R$ 563,93	R$ 622,97
IRRF SOBRE FOLHA DE PAGAMENTO A RECOLHER		R$ 218.033,80	R$ 76.795,14
OBRIGACOES TRIBUTARIAS		R$ 192.261,13	R$ 417.416,89
IMPOSTOS RETIDOS A RECOLHER		R$ 3.273,47	R$ 7.354,49
IRRF A RECOLHER		R$ 454,73	R$ 539,09
PIS,COFINS E CSLL RETIDO		R$ 2.818,74	R$ 6.815,40
IMPOSTOS E CONTR S/RECEITAS A RECOLHER		R$ 188.987,66	R$ 410.062,40
ISS A PAGAR		R$ 1.159,12	R$ 42.084,11
COFINS A PAGAR		R$ 111.170,12	R$ 210.835,37
PIS A PAGAR		R$ 24.113,50	R$ 45.730,97
ICMS A PAGAR - SUBSTITUICAO TRIBUTARIA		R$ 1.104,06	R$ 1.104,06
ICMS A PAGAR - FILIAL		R$ 51.440,86	R$ 110.307,89
IMPOSTOS E CONTRIBUICOES SOBRE O LUCRO		R$ 710.867,96	R$ 411.009,50
PROVISAO PARA A CONTRIBUICAO SOCIAL		R$ 90.747,85	R$ 123.131,91
CONTRIBUICAO SOCIAL A RECOLHER		R$ 90.747,85	R$ 123.131,91
PROVISAO PARA O IMPOSTO DE RENDA		R$ 620.120,11	R$ 287.877,59
IRPJ A RECOLHER		R$ 620.120,11	R$ 287.877,59
RECEBIMENTOS ANTECIPADOS		R$ 635.942,52	R$ 708.728,97

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BALANÇO PATRIMONIAL

Entidade:	E.R. SOLUCOES INFORMATICA LTDA
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CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	19
Período Selecionado:	01 de janeiro de 2024 a 31 de dezembro de 2024

Descrição	Nota	Saldo Inicial	Saldo Final
ADIANTAMENTOS DE CLIENTES		R$ 635.942,52	R$ 708.728,97
ADIANTAMENTO DE CLIENTES		R$ 0,00	R$ 118.728,97
ADIANTAMENTO DE CLIENTES		R$ 942,52	R$ 0,00
ADTO CLIENTE - ASE-IT SOLUÇÕES EM TECN. LTDA		R$ 635.000,00	R$ 590.000,00
PASSIVO NAO CIRCULANTE		R$ 405.153,98	R$ 2.261.142,82
EMPRESTIMOS E FINANCIAMENTOS		R$ 405.153,98	R$ 2.261.142,82
EMPRESTIMOS E FINANCIAMENTOS BANCARIOS		R$ 303.162,24	R$ 2.261.142,82
(-) (-) JUROS A APROPRIAR LP		R$ (93.326,44)	R$ 0,00
BANCO DO BRASIL S/A		R$ 0,00	R$ 826.958,49
BC DE LAGE LANDEN BRASIL S.A-LEASING -LP		R$ 396.488,68	R$ 0,00
BC DE LACE LANDEN BRASIL S.A - LEASING- CP/ CONTR. 794733		R$ 0,00	R$ 1.774.303,44
(-) JUROS BC DE LACE LANDEN BRASIL S.A - LEASING- CP/ CONTR. 794733		R$ 0,00	R$ (207.605,15)
(-) JUROS BB CAPITAL DE GIRO		R$ 0,00	R$ (132.513,96)
EMPRESTIMOS DE PESSOAS LIGADAS		R$ 101.991,74	R$ 0,00
EMPR DE SOCIOS - ANDRE LUIS M. PELICIONI		R$ 101.991,74	R$ 0,00
P A T R I M O N I O L I Q U I D O		R$ 5.749.882,55	R$ 6.805.365,82
CAPITAL SOCIAL		R$ 1.107.581,77	R$ 1.216.000,00
CAPITAL SOCIAL DE DOMICILIADOS NO PAIS		R$ 1.107.581,77	R$ 1.216.000,00
CAPITAL		R$ 1.000.000,00	R$ 1.000.000,00
AFAC - ANDRE LUIS MACHADO PELICIONI		R$ 107.581,77	R$ 108.000,00
AFAC - GEORGE EDUARDO SALIBY		R$ 0,00	R$ 108.000,00
LUCROS ACUMULADOS		R$ 4.642.300,78	R$ 5.589.365,83
LUCROS ACUMULADOS E OU SALDO DISPOSIÇÃO		R$ 4.642.300,78	R$ 5.589.365,83
LUCROS ACUMULADOS		R$ 0,00	R$ 2.883.288,88
LUCRO DO EXERCICIO CORRENTE		R$ 4.642.300,78	R$ 2.706.076,95
(-)PREJUIZOS ACUMULADOS		R$ 0,00	R$ (0,01)
(-)PREJUIZOS ACUMULADOS		R$ 0,00	R$ (0,01)
(-) PREJUIZO DO EXERCICIO		R$ 0,00	R$ (0,01)

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DEMONSTRAÇÃO DE RESULTADO DO EXERCÍCIO

Entidade:	E.R. SOLUCOES INFORMATICA LTDA
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CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	19
Período Selecionado:	01 de janeiro de 2024 a 31 de dezembro de 2024

Descrição	Nota	Saldo anterior	Saldo atual
RECEITA BRUTA		R$ 56.903.215,70	R$ 42.195.011,63
REVENDA DE MERCADORIAS		R$ 51.454.053,73	R$ 34.912.247,88
SERVICOS PRESTADOS		R$ 1.177.222,95	R$ 3.045.219,18
RECEITAS COM LOCACOES		R$ 4.271.939,02	R$ 4.237.544,57
(-) DEDUÇÕES DA RECEITA BRUTA		R$ (9.086.097,42)	R$ (5.632.164,79)
(-) (-)DEVOLUCAO REVENDA MERCADORIAS		R$ (1.471.992,50)	R$ (82.780,00)
(-) (-)ICMS S/VENDAS/REVENDAS		R$ (635.077,62)	R$ (674.746,83)
(-) (-)PIS S/VENDAS/REVENDAS		R$ (816.016,41)	R$ (641.947,73)
(-) (-)COFINS S/VENDAS/REVENDAS		R$ (3.760.752,27)	R$ (2.958.933,90)
(-) (-)ISS S/SERVICOS PRESTADOS		R$ (23.544,46)	R$ (76.363,59)
(-) (-)ICMS - DIFAL		R$ (2.450.263,98)	R$ (1.174.559,49)
(-) (-)ICMS - SUBSTITUICAO TRIBUTARIA		R$ (12.150,18)	R$ (22.833,25)
ICMS SOBRE DEVOLUCAO DE VENDA		R$ 83.700,00	R$ 0,00
RECEITA LÍQUIDA		R$ 47.817.118,28	R$ 36.562.846,84
(-) CUSTOS DE MERCADORIAS, PRODUTOS E SERVIÇOS		R$ (30.348.429,84)	R$ (25.261.659,69)
(-) ESTOQUE INICIAL DE MERCADORIAS P/REVENDA		R$ (7.918.253,76)	R$ (3.095.317,57)
(-) MERCADORIAS PARA REVENDA		R$ (30.832.065,73)	R$ (26.669.214,35)
(-) CUSTOS DOS SERVIÇOS PRESTADOS		R$ (1.780.323,37)	R$ (1.884.433,10)
(-)PIS SOBRE COMPRAS		R$ 469.357,71	R$ 360.784,89
(-)COFINS SOBRE COMPRAS		R$ 2.161.890,13	R$ 1.661.797,37
(-) ICMS ST ANTECIPADO S/ COMPRAS		R$ (101.319,27)	R$ (99.051,21)
(-) ESTOQUE INICIAL DE MERCADORIAS P/REVENDA - FILIAL		R$ (5.097.610,96)	R$ (3.787.386,40)
(-)ESTOQUE FINAL DE MERCADORIAS P/REVENDA		R$ 7.519.623,74	R$ 2.800.821,14
(-)ESTOQUE FINAL DE MERCADORIAS P/REVENDA - FILIAL		R$ 5.230.271,67	R$ 5.450.339,54
LUCRO BRUTO OPERACIONAL		R$ 17.468.688,44	R$ 11.301.187,15
(-) DESPESAS FINANCEIRAS		R$ (195.560,46)	R$ (196.572,13)
(-) JUROS PAGOS		R$ (161.597,17)	R$ (177.997,82)
(-) DESCONTOS CONCEDIDOS		R$ (153,92)	R$ (11.280,66)
(-) DESPESAS BANCARIAS		R$ (8.592,43)	R$ (7.287,92)
(-) MULTAS DE MORA		R$ (1,80)	R$ (0,00)
(-) JUROS DE MORA		R$ (25.215,14)	R$ (5,73)

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número DD.A2.AE.7B.E4.64.14.70.20.53.82.0C.7D.BF.26.D8.04.EB.97.A6-0, nos termos do Decreto nº 8.683/2016.

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Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1917

DEMONSTRAÇÃO DE RESULTADO DO EXERCÍCIO

Entidade:	E.R. SOLUCOES INFORMATICA LTDA
Período da Escrituração:	01/01/2024 a 31/12/2024
CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	19
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Descrição	Nota	Saldo anterior	Saldo atual
(-) DESPESAS GERAIS		R$ (4.288.366,04)	R$ (4.443.419,00)
(-) ALUGUEIS		R$ (57.082,56)	R$ (57.082,56)
(-) AGUA E ESGOTO		R$ (2.203,63)	R$ (2.228,85)
(-) ANUNCIOS E PROPAGANDAS		R$ (31.886,34)	R$ (11.440,00)
(-) ASSOCIACOES DE CLASSE		R$ (2.500,00)	R$ (2.538,00)
(-) BENS NATUREZA PERMANENTE C/PEQ/VALOR		R$ (10.009,20)	R$ (3.589,49)
(-) BONIFICACOES		R$ (21.285,46)	R$ (120.807,77)
(-) COMBUSTIVEIS E LUBRIFICANTES		R$ (7.212,02)	R$ (6.822,79)
(-) CONSERV/REPAR/MANUTENCAO INSTALACOES		R$ (86.326,90)	R$ (81.302,75)
(-) CONSERV/REPAR/MANUTENCAO MAQUINAS EQUIP		R$ (293.222,08)	R$ (1.124.783,61)
(-) CONSERV/REPAR/MANUTENCAO VEICULOS		R$ (12.701,17)	R$ (24.873,10)
(-) DESPESAS POSTAIS/CORREIOS E TELEGRAFOS		R$ (12.882,86)	R$ (6.868,33)
(-) DESPESAS DE VIAGENS E ESTADIAS		R$ (106.685,63)	R$ (155.361,66)
(-) ENERGIA ELETRICA		R$ (23.312,28)	R$ (25.814,69)
(-) IMPRESSOS E MATERIAIS P/ESCRITORIO		R$ (20.612,37)	R$ (9.971,70)
(-) REFEICOES E LANCHES		R$ (45.892,71)	R$ (65.471,36)
(-) DESPESAS COM TELEFONE		R$ (28.334,79)	R$ (20.640,06)
(-) SERVICOS PRESTADOS		R$ (16.599,00)	R$ (1.301,24)
(-) DESPESAS C/REEMBOLSO		R$ (2.188,40)	R$ (2.400,00)
(-) LICENCA DE USO DE SOFTWARE		R$ (10.963,37)	R$ (97.267,60)
(-) DESPESAS COM FRETES E CARRETOS		R$ (884.107,43)	R$ (208.770,18)
(-) DESPESAS CARTORIOS		R$ (2.885,74)	R$ (2.460,79)
(-) SEGUROS		R$ (139.604,42)	R$ (80.493,16)
(-) MATERIAIS DE LIMPEZA		R$ (22.334,28)	R$ (0,00)
(-) HONORARIOS ADVOCATICIOS		R$ (0,00)	R$ (5.000,00)
(-) ASSISTENCIA TECNICA		R$ (0,00)	R$ (6.258,51)
(-) DESPESAS COM PROMOCOES E EVENTOS		R$ (69.412,79)	R$ (70.888,57)
(-) REFORMA E CONSERVACAO DE IMOVEIS		R$ (0,00)	R$ (1.301,31)
(-) HONORARIOS CONTABEIS		R$ (82.891,66)	R$ (97.884,00)
(-) DESPESAS COM LOCACAO		R$ (18.025,27)	R$ (28.389,94)

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Descrição	Nota	Saldo anterior	Saldo atual
(-) COMISSOES S/VENDAS		R$ (132.810,44)	R$ (148.631,06)
(-) DEPRECIACOES E AMORTIZACOES		R$ (1.413.247,47)	R$ (1.359.059,03)
(-) PERDAS COM INCOBRAVEIS		R$ (0,00)	R$ (2.859,96)
(-) DESPC/CONSULTORIA E ASSESSORIA		R$ (84.000,00)	R$ (100.500,00)
(-) DESPESAS C/SEGURANCA		R$ (5.281,28)	R$ (5.297,40)
(-) SERVICOS DE INFORMATICA		R$ (0,00)	R$ (6.440,35)
(-) PERDAS		R$ (179.680,78)	R$ (13.458,11)
(-) DESPESAS C/ESTACIONAMENTO		R$ (10.147,50)	R$ (11.782,50)
(-) DESPESAS COM LICITACOES		R$ (6.981,25)	R$ (10.060,59)
(-) DESPESAS C/PEDAGIO		R$ (9.195,32)	R$ (16.447,56)
(-) CONSERV/REPAR/MANUT MOVEIS E UTENSILI		R$ (200,59)	R$ (0,00)
(-) DESPESAS C/DESINSETIZACAO		R$ (696,00)	R$ (1.020,00)
(-) LOCACAO DE MAQUINAS E EQUIPAMENTOS		R$ (1.382,20)	R$ (1.578,50)
(-) SERV CADASTRO PROTECAO AO CREDITO		R$ (2.032,92)	R$ (2.433,48)
(-) CERTIFICADO DIGITAL		R$ (208,80)	R$ (377,00)
(-) DESPESAS COM ARMAZENAMENTO		R$ (96.298,67)	R$ (69.926,80)
(-) DESPESAS COM INTERNET		R$ (3.065,82)	R$ (4.724,14)
(-) DESPESAS COM CORRETAGEM		R$ (6.091,40)	R$ (2.500,00)
(-) SERVICOS PRESTADOS PJ		R$ (254.550,00)	R$ (274.014,08)
(-) DESPESAS C/ COBRANÇAS		R$ (71.333,24)	R$ (90.296,42)
(-) DESPESAS TRIBUTÁRIAS		R$ (219.902,89)	R$ (169.532,35)
(-) TAXA DE LICENCA P/INSTALACAO E FUNCIONAM		R$ (68,09)	R$ (0,00)
(-) IMPOSTOS E TAXAS DIVERSAS		R$ (142.458,45)	R$ (18.177,66)
(-) IOF		R$ (6.646,89)	R$ (53.416,49)
(-) IPTU		R$ (3.948,60)	R$ (4.377,60)
(-) MULTAS P/INFRACAO A LEGISLACAO		R$ (0,00)	R$ (13.625,02)
(-) MULTAS DE TRANSITO		R$ (3.678,75)	R$ (104,12)
(-) IPVA / DPVAT / LICENCIAMENTO VEICULOS		R$ (22.853,49)	R$ (14.021,97)
(-) GNRE - FUNDO ESP DE COMBATE A POBREZA		R$ (33.862,97)	R$ (17.473,41)
(-) ICMS-DIFERENCIAL DE ALIQUOTAS		R$ (4.549,65)	R$ (0,00)
(-) ICMS		R$ (1.836,00)	R$ (48.336,08)

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DEMONSTRAÇÃO DE RESULTADO DO EXERCÍCIO

Entidade:	E.R. SOLUCOES INFORMATICA LTDA
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Descrição	Nota	Saldo anterior	Saldo atual
(-) DESPESAS COM PESSOAL		R$ (5.422.852,95)	R$ (3.507.783,10)
(-) PRO-LABORE		R$ (105.857,88)	R$ (110.376,24)
(-) SALARIOS E ORDENADOS		R$ (1.667.510,42)	R$ (1.561.526,85)
(-) FERIAS		R$ (517.247,53)	R$ (307.381,40)
(-) FERIAS INDENIZADAS		R$ (0,00)	R$ (479,67)
(-) 13. SALARIO		R$ (254.379,39)	R$ (172.721,20)
(-) INSS		R$ (993.233,14)	R$ (596.300,33)
(-) FGTS		R$ (293.507,85)	R$ (190.434,27)
(-) VALE TRANSPORTE		R$ (2.332,00)	R$ (3.370,00)
(-) DESPESAS COM ESTAGIARIOS		R$ (1.934,10)	R$ (1.056,40)
(-) CONTRIBUICOES SINDICAIS		R$ (480,00)	R$ (600,00)
(-) VALE ALIMENTACAO		R$ (235.173,57)	R$ (276.946,29)
(-) DESPESAS COM UNIFORMES		R$ (0,00)	R$ (630,00)
(-) ASSISTENCIA MEDICA E ODONTOLOGICA		R$ (75.997,20)	R$ (97.625,69)
(-) DESPESAS COM TREINAMENTO DE PESSOAL		R$ (30.957,50)	R$ (39.663,88)
(-) COMISSÕES		R$ (670.206,22)	R$ (0,00)
(-) BENEFICIOS COM FUNCIONARIOS		R$ (2.097,90)	R$ (0,00)
(-) PREMIOS		R$ (571.938,25)	R$ (148.670,88)
RECEITAS FINANCEIRAS		R$ 514.525,41	R$ 217.433,31
JUROS E ATUALS/ IMPOSTOS A RECUPERAR		R$ 29,73	R$ 0,00
RENDIMENTOS DE APLICACOES		R$ 210.873,68	R$ 207.038,14
PROVENTOS RECEBIDOS DE AÇÕES		R$ 0,00	R$ 3.389,22
JUROS / MULTAS RECEBIDOS		R$ 974,36	R$ 81,15
DESCONTOS OBTIDOS		R$ 302.647,64	R$ 6.924,80
OUTRAS RECEITAS OPERACIONAIS		R$ 329.239,24	R$ 704.512,75
DIVIDENDOS DISTRIBUIDOS		R$ 4.412,80	R$ 0,00
BONIFICACOES RECEBIDAS		R$ 18.516,15	R$ 0,00
OUTRAS RECEITAS OPERACIONAIS		R$ 418,39	R$ 371,52
REVERSAO PROVFERIAS-13. SALC/ENCARGOS		R$ 118.844,82	R$ 178.324,66
INDENIZACOES		R$ 6.170,00	R$ 6.571,25
REEMBOLSO DE DESPESAS		R$ 649,59	R$ 4.075,99
RECUPERACOES DE DESPESAS		R$ 0,00	R$ 133.470,82

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DEMONSTRAÇÃO DE RESULTADO DO EXERCÍCIO

Entidade:	E.R. SOLUCOES INFORMATICA LTDA
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Descrição	Nota	Saldo anterior	Saldo atual
INCENTIVOS RECEBIDOS		R$ 180.227,49	R$ 381.698,51
RESULTADO OPERACIONAL		R$ 8.185.770,75	R$ 3.905.826,63
RECEITAS NÃO OPERACIONAIS		R$ 48.373,77	R$ 164.931,72
RECEITA ALIENACAO BENS DO IMOBILIZADO		R$ 48.373,77	R$ 164.931,72
RESULTADO ANTES DO IR E CSL		R$ 8.234.144,52	R$ 4.070.758,35
(-) PROVISÕES PARA IR E CSL		R$ (2.782.248,86)	R$ (1.364.681,41)
(-) PROVISAO PARA CONTRIBUICAO SOCIAL		R$ (742.830,58)	R$ (367.592,14)
(-) PROVISAO PARA IRPJ		R$ (2.039.418,28)	R$ (997.089,27)
RESULTADO DO EXERCÍCIO		R$ 5.451.895,66	R$ 2.706.076,94
LUCRO LÍQUIDO DO EXERCÍCIO		R$ 5.451.895,66	R$ 2.706.076,94

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1921

DEMONSTRAÇÃO DE LUCROS OU PREJUÍZOS ACUMULADOS

Entidade:	E.R. SOLUCOES INFORMATICA LTDA				
Período da Escrituração:	01/01/2024 a 31/12/2024	CNP	05.778.325/0001-13	Número de Ordem do Livro:	19
Período Selecionado:	01 de janeiro de 2024 a 31 de dezembro de 2024				

Histórico	Código de Aglutinação das Contas de Patrimônio Líquido
	LUCRO DO EXERCICIO CORRENTE (R$)
Saldo Anterior de Lucros Acumulados	4.642.300,78
Ajustes Credores de Períodos-base Anteriores	0,00
Reversão de Reservas	0,00
Outros Recursos	0,00
Lucro Líquido do Ano	2.706.076,94
(-)Saldo Anterior de Prejuízo Acumulados	0,00
(-)Ajustes Devedores de Períodos-base Anteriores	0,00
(-)Prejuízo Líquido do Ano	0,00
TOTAL	7.348.377,72
Transferências para Reservas	0,00
Dividendos ou Lucros Distribuídos, Pagos ou Creditados	(-)879.505,95
Dividendos ou Lucros Distribuídos, Pagos ou Creditados	(-)879.505,95
Parcela dos Lucros Incorporados ao Capital	0,00
Outras Destinações	0,00
TOTAL	(-)1.759.011,90
LUCROS OU PREJUÍZOS ACUMULADOS	5.589.365,82
Notas	

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número DD.A2.AE.7B.E4.64.14.70.20.53.82.0C.7D.BF.26.D8.04.EB.97.A6-0, nos termos do Decreto nº 8.683/2016.

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241)

SEI 2025.001317 / pg. 1922

COEFICIENTES DE ANÁLISES EM 31/12/2024

Coeficiente	Fórmula	Valor	Resultado
Índice de Liquidez Geral	Ativo Circulante + Realizável Longo Prazo	16.611.272,65 + 62.000,00	1,10
	Passivo Circulante + Passivo Não-Circulante	12.962.714,78 + 2.261.142,82	
Índice de Liquidez Corrente	Ativo Circulante	16.611.272,65	1,28
	Passivo Circulante	12.962.714,78	
Índice de Solvência Geral	Ativo	22.029.223,42	1,45
	Passivo Circulante + Passivo Não-Circulante	12.962.714,78 + 2.261.142,82	
Grau de Endividamento	Passivo Circulante + Passivo Não-Circulante	12.962.714,78 + 2.261.142,82	0,69
	Ativo	22.029.223,42	

GEORGE EDUARDO SALIBY:98291335834 Assinado de forma digital por GEORGE EDUARDO SALIBY:98291335834 Dados: 2025.04.28 09:47:59 -03'00'

GEORGE EDUARDO SALIBY

CPF: 982.913.358-34

ANDRE LUIS MACHADO PELICIONI:24878554878 Assinado de forma digital por ANDRE LUIS MACHADO PELICIONI:24878554878 Dados: 2025.04.28 09:47:32 -03'00'

ANDRE LUIS MACHADO PELICIONI

CPF: 248.785.548-78

FERNANDO CARVALHO DE SOUZA:24847040899 Assinado de forma digital por FERNANDO CARVALHO DE SOUZA:24847040899 Dados: 2025.04.25 16:55:24 -03'00'

FERNANDO CARVALHO DE SOUZA
Reg. no CRC - SP sob o No. 1SP208546/O-2
CPF: 248.470.408-99

MINISTÉRIO DA FAZENDA
SECRETARIA DA RECEITA FEDERAL DO BRASIL
SISTEMA PÚBLICO DE ESCRITURAÇÃO DIGITAL – Sped Versão: 10.2.0

RECIBO DE ENTREGA DE ESCRITURAÇÃO CONTÁBIL DIGITAL

IDENTIFICAÇÃO DO TITULAR DA ESCRITURAÇÃO

NIRE	CNPJ	
35217771512	05.778.325/0001-13	
NOME EMPRESARIAL		
E.R. SOLUCOES INFORMATICA LTDA		

IDENTIFICAÇÃO DA ESCRITURAÇÃO

FORMA DA ESCRITURAÇÃO CONTÁBIL	PERÍODO DA ESCRITURAÇÃO
Livro Diário (Completo - sem escrituração Auxiliar)	01/01/2023 a 31/12/2023
NATUREZA DO LIVRO	**NÚMERO DO LIVRO**
LIVRO DIÁRIO COMPLETO	18
IDENTIFICAÇÃO DO ARQUIVO (HASH)	
99.A8.BE.CC.BD.9F.8E.BE.61.E8.A7.CF.1C.20.66.24.FF.67.5F.AC	

ESTE LIVRO FOI ASSINADO COM OS SEGUINTES CERTIFICADOS DIGITAIS:

QUALIFICAÇÃO DO SIGNATARIO	CPF/CNPJ	NOME	Nº SÉRIE DO CERTIFICADO	VALIDADE	RESPONSÁVEL LEGAL
Contabilista	16776224820	AMAURI BARBOSA DE SOUZA:16776224820	357584438852048315	18/01/2024 a 17/01/2025	Não
Pessoa Jurídica (e-CNPJ ou e-PJ)	05778325000113	E R SOLUCOES INFORMATICA LTDA:05778325000113	891084501714144700 7	06/02/2024 a 05/02/2025	Sim

NÚMERO DO RECIBO:

99.A8.BE.CC.BD.9F.8E.BE.61.E8.A7.C
F.1C.20.66.24.FF.67.5F.AC-0

Escrituração recebida via Internet
pelo Agente Receptor SERPRO

em 30/04/2024 às 13:04:01

84.8A.CC.D0.47.9A.76.5F
2E.2E.3E.E6.38.3A.12.E9

Considera-se autenticado o livro contábil a que se refere este recibo, dispensando-se a autenticação de que trata o art. 39 da Lei nº 8.934/1994. Este recibo comprova a autenticação.

BASE LEGAL: Decreto nº 1.800/1996, com a alteração do Decreto nº 8.683/2016, e arts. 39, 39-A, 39-B da Lei nº 8.934/1994 com a alteração da Lei Complementar nº 1247/2014.

TERMOS DE ABERTURA E ENCERRAMENTO

Entidade:	E.R. SOLUCOES INFORMATICA LTDA		
Período da Escrituração:	01/01/2023 a 31/12/2023	CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	18		

TERMO DE ABERTURA

Nome Empresarial	E.R. SOLUCOES INFORMATICA LTDA
NIRE	35217771512
CNPJ	05.778.325/0001-13
Número de Ordem	18
Natureza do Livro	LIVRO DIÁRIO COMPLETO
Município	RIBEIRAO PRETO
Data do arquivamento dos atos constitutivos	07/07/2003
Data de arquivamento do ato de conversão de sociedade simples em sociedade empresária	
Data de encerramento do exercício social	31/12/2023
Quantidade total de linhas do arquivo digital	66074

TERMO DE ENCERRAMENTO

Nome Empresarial	E.R. SOLUCOES INFORMATICA LTDA
Natureza do Livro	LIVRO DIÁRIO COMPLETO
Número de ordem	18
Quantidade total de linhas do arquivo digital	66074
Data de inicio	01/01/2023
Data de término	31/12/2023

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número 99.A8.BE.CC.BD.9F.8E.BE.61.E8.A7.CF.1C.20.66.24.FF.67.5F.AC-0, nos termos do Decreto nº 8.683/2016.

Este relatório foi gerado pelo Sistema Público de Escrituração Digital – Sped

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1925

SITUAÇÃO DO ARQUIVO DA ESCRITURAÇÃO

Nome Empresarial:	E.R. SOLUCOES INFORMATICA LTDA			
CNPJ:	05.778.325/0001-13	Nire:	35217771512	Scp:
Período da Escrituração:	01/01/2023 a 31/12/2023			
Forma de Escrituração Contábil:	Livro Diário (Completo - sem escrituração Auxiliar)			
Natureza do Livro:	LIVRO DIÁRIO COMPLETO			
Identificação do arquivo(hash):	99.A8.BE.CC.BD.9F.8E.BE.61.E8.A7.CF.1C.20.66.24.FF.67.5F.AC-			

Consulta Realizada em: 30/04/2024 10:10:49

Resultado da Verificação

A escrituração visualizada é a mesma que se encontra na base de dados do SPED.

Situação Atual

Escrituração com NIRE AUTENTICADA

A escrituração encontra-se na base de dados do Sped e considera-se autenticada nos termos do Decreto nº 1.800/1996, com a alteração dada pelo Decreto nº 8.683/2016. O recibo de entrega constitui a comprovação da autenticação, nos termos do art. 39-B da Lei nº 8.934/1994, sendo dispensada qualquer outra autenticação (art.39-A da Lei nº 8.934/1994).

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1926

DEMONSTRAÇÃO DE RESULTADO DO EXERCÍCIO

Entidade:	E.R. SOLUCOES INFORMATICA LTDA		
Período da Escrituração:	01/01/2023 a 31/12/2023	CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	18		
Período Selecionado:	01 de Janeiro de 2023 a 31 de Dezembro de 2023		

Descrição	Nota	Saldo anterior	Saldo atual
RECEITA BRUTA		R$ 40.304.598,63	R$ 56.903.215,70
REVENDA DE MERCADORIAS		R$ 36.502.823,30	R$ 51.454.053,73
SERVICOS PRESTADOS		R$ 646.654,86	R$ 1.177.222,95
RECEITAS COM LOCACOES		R$ 3.155.120,47	R$ 4.271.939,02
(-) DEDUÇÕES DA RECEITA BRUTA		R$ (5.102.193,04)	R$ (9.086.097,42)
(-) (-)DEVOLUCAO REVENDA MERCADORIAS		R$ (737.010,00)	R$ (1.471.992,50)
(-) (-)ICMS S/VENDAS/REVENDAS		R$ (222.485,21)	R$ (635.077,62)
(-) (-)PIS S/VENDAS/REVENDAS		R$ (633.158,71)	R$ (816.016,41)
(-) (-)COFINS S/VENDAS/REVENDAS		R$ (2.917.683,57)	R$ (3.760.752,27)
(-) (-)ISS S/SERVICOS PRESTADOS		R$ (12.933,07)	R$ (23.544,46)
(-) (-)ICMS - DIFAL		R$ (578.922,48)	R$ (2.450.263,98)
(-) (-)ICMS - SUBSTITUICAO TRIBUTARIA		R$ (0,00)	R$ (12.150,18)
ICMS SOBRE DEVOLUCAO DE VENDA		R$ 0,00	R$ 83.700,00
RECEITA LÍQUIDA		R$ 35.202.405,59	R$ 47.817.118,28
(-) CUSTOS DE MERCADORIAS, PRODUTOS E SERVIÇOS		R$ (25.006.585,23)	R$ (30.348.429,84)
(-) ESTOQUE INICIAL DE MERCADORIAS P/REVENDA		R$ (453.108,69)	R$ (7.918.253,76)
(-) MERCADORIAS PARA REVENDA		R$ (23.028.965,00)	R$ (30.832.065,73)
(-) CUSTOS DOS SERVIÇOS PRESTADOS		R$ (2.297.650,78)	R$ (1.780.323,37)
(-)PIS SOBRE COMPRAS		R$ 0,00	R$ 469.357,71
(-)COFINS SOBRE COMPRAS		R$ 0,00	R$ 2.161.890,13
(-) ICMS ST ANTECIPADO S/ COMPRAS		R$ (0,00)	R$ (101.319,27)
(-) ESTOQUE INICIAL DE MERCADORIAS P/REVENDA - FILIAL		R$ (0,00)	R$ (5.097.610,96)
(-)ESTOQUE FINAL DE MERCADORIAS P/REVENDA		R$ 773.139,24	R$ 7.519.623,74
(-)ESTOQUE FINAL DE MERCADORIAS P/REVENDA - FILIAL		R$ 0,00	R$ 5.230.271,67
LUCRO BRUTO OPERACIONAL		R$ 10.195.820,36	R$ 17.468.688,44
(-) DESPESAS FINANCEIRAS		R$ (168.069,41)	R$ (195.560,46)
(-) JUROS PAGOS		R$ (73.221,51)	R$ (161.597,17)
(-) DESCONTOS CONCEDIDOS		R$ (289,72)	R$ (153,92)
(-) DESPESAS BANCARIAS		R$ (6.449,02)	R$ (8.592,43)
(-) DESPESAS C/COBRANCA		R$ (81.843,12)	R$ (0,00)
(-) TARIFA - CARTAO CREDITO		R$ (18,75)	R$ (0,00)
(-) MULTAS DE MORA		R$ (2.057,58)	R$ (1,80)
(-) JUROS DE MORA		R$ (4.189,71)	R$ (25.215,14)
(-) DESPESAS GERAIS		R$ (2.983.074,60)	R$ (4.288.366,04)

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1927

DEMONSTRAÇÃO DE RESULTADO DO EXERCÍCIO

Entidade:	E.R. SOLUCOES INFORMATICA LTDA		
Período da Escrituração:	01/01/2023 a 31/12/2023	CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	18		
Período Selecionado:	01 de Janeiro de 2023 a 31 de Dezembro de 2023		

Descrição	Nota	Saldo anterior	Saldo atual
(-) ALUGUEIS		R$ (57.082,56)	R$ (57.082,56)
(-) AGUA E ESGOTO		R$ (1.487,92)	R$ (2.203,63)
(-) ANUNCIOS E PROPAGANDAS		R$ (45.711,37)	R$ (31.886,34)
(-) ASSOCIACOES DE CLASSE		R$ (2.326,00)	R$ (2.500,00)
(-) BENS NATUREZA PERMANENTE C/PEQ/VALOR		R$ (3.895,74)	R$ (10.009,20)
(-) BONIFICACOES		R$ (4.421,85)	R$ (21.285,46)
(-) COMBUSTIVEIS E LUBRIFICANTES		R$ (9.886,53)	R$ (7.212,02)
(-) CONSERV/REPAR/MANUTENCAO INSTALACOES		R$ (403.468,47)	R$ (86.326,90)
(-) CONSERV/REPAR/MANUTENCAO MAQUINAS EQUIP		R$ (119.282,55)	R$ (293.222,08)
(-) CONSERV/REPAR/MANUTENCAO VEICULOS		R$ (20.702,59)	R$ (12.701,17)
(-) DESPESAS POSTAIS/CORREIOS E TELEGRAFOS		R$ (4.241,90)	R$ (12.882,86)
(-) DESPESAS DE VIAGENS E ESTADIAS		R$ (83.226,83)	R$ (106.685,63)
(-) ENERGIA ELETRICA		R$ (17.728,08)	R$ (23.312,28)
(-) IMPRESSOS E MATERIAIS P/ESCRITORIO		R$ (12.871,29)	R$ (20.612,37)
(-) MATERIAIS DE USO E CONSUMO		R$ (3.056,15)	R$ (0,00)
(-) REFEICOES E LANCHES		R$ (29.184,05)	R$ (45.892,71)
(-) DESPESAS COM TELEFONE		R$ (20.872,24)	R$ (28.334,79)
(-) SERVICOS PRESTADOS		R$ (240.000,00)	R$ (16.599,00)
(-) DESPESAS C/REEMBOLSO		R$ (0,00)	R$ (2.188,40)
(-) LICENCA DE USO DE SOFTWARE		R$ (15.821,16)	R$ (10.963,37)
(-) DESPESAS COM FRETES E CARRETOS		R$ (179.821,26)	R$ (884.107,43)
(-) DESPESAS CARTORIOS		R$ (2.568,40)	R$ (2.885,74)
(-) SEGUROS		R$ (131.058,80)	R$ (139.604,42)
(-) MATERIAIS DE LIMPEZA		R$ (2.740,90)	R$ (22.334,28)
(-) DESPESAS COM PROMOCOES E EVENTOS		R$ (18.231,50)	R$ (69.412,79)
(-) HONORARIOS CONTABEIS		R$ (67.225,24)	R$ (82.891,66)
(-) DESPESAS COM LOCACAO		R$ (19.090,37)	R$ (18.025,27)
(-) COMISSOES S/VENDAS		R$ (96.252,97)	R$ (132.810,44)
(-) DEPRECIACOES E AMORTIZACOES		R$ (936.728,87)	R$ (1.413.247,47)
(-) DESPC/CONSULTORIA E ASSESSORIA		R$ (87.000,00)	R$ (84.000,00)
(-) DESPESAS C/SEGURANCA		R$ (6.758,04)	R$ (5.281,28)
(-) DESPESAS C/LIMPEZA		R$ (30.242,17)	R$ (0,00)
(-) SERVICOS DE INFORMATICA		R$ (260,00)	R$ (0,00)

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1928

DEMONSTRAÇÃO DE RESULTADO DO EXERCÍCIO

Entidade:	E.R. SOLUCOES INFORMATICA LTDA		
Período da Escrituração:	01/01/2023 a 31/12/2023	CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	18		
Período Selecionado:	01 de Janeiro de 2023 a 31 de Dezembro de 2023		

Descrição	Nota	Saldo anterior	Saldo atual
(-) PERDAS		R$ (242.521,69)	R$ (179.680,78)
(-) DESPESAS C/ESTACIONAMENTO		R$ (8.917,50)	R$ (10.147,50)
(-) DESPESAS COM LICITACOES		R$ (4.705,84)	R$ (6.981,25)
(-) DESPESAS C/PEDAGIO		R$ (9.449,08)	R$ (9.195,32)
(-) CONSERV/REPAR/MANUT MOVEIS E UTENSILI		R$ (0,00)	R$ (200,59)
(-) DESPESAS C/DESINSETIZACAO		R$ (0,00)	R$ (696,00)
(-) LOCACAO DE MAQUINAS E EQUIPAMENTOS		R$ (0,00)	R$ (1.382,20)
(-) SERVICOS GRAFICOS		R$ (27,00)	R$ (0,00)
(-) SERV CADASTRO PROTECAO AO CREDITO		R$ (2.646,41)	R$ (2.032,92)
(-) CERTIFICADO DIGITAL		R$ (185,60)	R$ (208,80)
(-) DESPESAS COM ARMAZENAMENTO		R$ (41.375,68)	R$ (96.298,67)
(-) DESPESAS COM INTERNET		R$ (0,00)	R$ (3.065,82)
(-) DESPESAS COM CORRETAGEM		R$ (0,00)	R$ (6.091,40)
(-) SERVICOS PRESTADOS PJ		R$ (0,00)	R$ (254.550,00)
(-) DESPESAS C/ COBRANÇAS		R$ (0,00)	R$ (71.333,24)
(-) DESPESAS TRIBUTÁRIAS		R$ (229.182,57)	R$ (219.902,89)
(-) TAXA DE LICENCA P/INSTALACAO E FUNCIONAM		R$ (63,96)	R$ (68,09)
(-) IMPOSTOS E TAXAS DIVERSAS		R$ (1.409,95)	R$ (142.458,45)
(-) IOF		R$ (8.732,15)	R$ (6.646,89)
(-) IPTU		R$ (3.948,60)	R$ (3.948,60)
(-) MULTAS DE TRANSITO		R$ (735,38)	R$ (3.678,75)
(-) IPVA / DPVAT / LICENCIAMENTO VEICULOS		R$ (15.027,53)	R$ (22.853,49)
(-) GNRE - FUNDO ESP DE COMBATE A POBREZA		R$ (10.028,00)	R$ (33.862,97)
(-) ICMS-DIFERENCIAL DE ALIQUOTAS		R$ (189.237,00)	R$ (4.549,65)
(-) ICMS		R$ (0,00)	R$ (1.836,00)
(-) DESPESAS COM PESSOAL		R$ (3.613.256,42)	R$ (5.422.852,95)
(-) PRO-LABORE		R$ (99.590,64)	R$ (105.857,88)
(-) SALARIOS E ORDENADOS		R$ (1.949.482,40)	R$ (1.667.510,42)
(-) FERIAS		R$ (269.347,81)	R$ (517.247,53)
(-) 13. SALARIO		R$ (151.121,72)	R$ (254.379,39)
(-) INSS		R$ (650.400,22)	R$ (993.233,14)
(-) FGTS		R$ (207.556,75)	R$ (293.507,85)
(-) VALE TRANSPORTE		R$ (420,00)	R$ (2.332,00)
(-) DESPESAS COM ESTAGIARIOS		R$ (7.665,07)	R$ (1.934,10)

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1929

DEMONSTRAÇÃO DE RESULTADO DO EXERCÍCIO

Entidade:	E.R. SOLUCOES INFORMATICA LTDA		
Período da Escrituração:	01/01/2023 a 31/12/2023	CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	18		
Período Selecionado:	01 de Janeiro de 2023 a 31 de Dezembro de 2023		

Descrição	Nota	Saldo anterior	Saldo atual
(-) CONTRIBUICOES SINDICAIS		R$ (0,00)	R$ (480,00)
(-) VALE ALIMENTACAO		R$ (192.357,60)	R$ (235.173,57)
(-) ASSISTENCIA MEDICA E ODONTOLOGICA		R$ (57.292,31)	R$ (75.997,20)
(-) DESPESAS COM TREINAMENTO DE PESSOAL		R$ (20.606,15)	R$ (30.957,50)
(-) ATEST SAUDE OCUP/PCMSO/PPRA		R$ (4.268,90)	R$ (0,00)
(-) COMISSÕES		R$ (0,00)	R$ (670.206,22)
(-) BENEFICIOS COM FUNCIONARIOS		R$ (3.146,85)	R$ (2.097,90)
(-) PREMIOS		R$ (0,00)	R$ (571.938,25)
RECEITAS FINANCEIRAS		R$ 374.402,19	R$ 514.525,41
JUROS E ATUALS/ IMPOSTOS A RECUPERAR		R$ 344,67	R$ 29,73
RENDIMENTOS DE APLICACOES		R$ 123.724,29	R$ 210.873,68
PROVENTOS RECEBIDOS DE AÇÕES		R$ 2.512,87	R$ 0,00
JUROS / MULTAS RECEBIDOS		R$ 187,06	R$ 974,36
DESCONTOS OBTIDOS		R$ 247.633,30	R$ 302.647,64
OUTRAS RECEITAS OPERACIONAIS		R$ 810.931,46	R$ 329.239,24
DIVIDENDOS DISTRIBUIDOS		R$ 0,00	R$ 4.412,80
REVERSAO DE DESPESAS PERIODO ANTERIOR		R$ 209.996,58	R$ 0,00
BONIFICACOES RECEBIDAS		R$ 1.947,25	R$ 18.516,15
OUTRAS RECEITAS OPERACIONAIS		R$ 153.600,00	R$ 418,39
REVERSAO PROVFERIAS-13. SALC/ENCARGOS		R$ 133,95	R$ 118.844,82
INDENIZACOES		R$ 0,00	R$ 6.170,00
REEMBOLSO DE DESPESAS		R$ 0,00	R$ 649,59
RECUPERACOES DE DESPESAS		R$ 292.588,54	R$ 0,00
INCENTIVOS RECEBIDOS		R$ 152.665,14	R$ 180.227,49
RESULTADO OPERACIONAL		R$ 4.387.571,01	R$ 8.185.770,75
RECEITAS NÃO OPERACIONAIS		R$ 9.996,88	R$ 48.373,77
RECEITA ALIENACAO BENS DO IMOBILIZADO		R$ 9.996,88	R$ 48.373,77
RESULTADO ANTES DO IR E CSL		R$ 4.397.567,89	R$ 8.234.144,52
(-) PROVISÕES PARA IR E CSL		R$ (1.472.445,97)	R$ (2.782.248,86)
(-) PROVISAO PARA CONTRIBUICAO SOCIAL		R$ (396.118,05)	R$ (742.830,58)
(-) PROVISAO PARA IRPJ		R$ (1.076.327,92)	R$ (2.039.418,28)
RESULTADO DO EXERCÍCIO		R$ 2.925.121,92	R$ 5.451.895,66
LUCRO LÍQUIDO DO EXERCÍCIO		R$ 2.925.121,92	R$ 5.451.895,66

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BALANÇO PATRIMONIAL

Entidade:	E.R. SOLUCOES INFORMATICA LTDA
Período da Escrituração:	01/01/2023 a 31/12/2023
CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	18
Período Selecionado:	01 de Janeiro de 2023 a 31 de Dezembro de 2023

Descrição	Nota	Saldo Inicial	Saldo Final
A T I V O		R$ 17.413.730,03	R$ 14.156.029,30
ATIVO CIRCULANTE		R$ 11.600.907,47	R$ 9.661.004,36
DISPONIVEL		R$ 1.102,81	R$ 1.930,04
CAIXA GERAL		R$ 1.090,80	R$ 1.918,04
CAIXA		R$ 1.090,80	R$ 1.918,04
BANCOS - CONTAS CORRENTES		R$ 12,01	R$ 12,00
BANCO BRADESCO S/A		R$ 1,00	R$ 1,00
BANCO ITAU S/A		R$ 10,01	R$ 10,00
BANCO BRADESCO S/A - FILIAL		R$ 1,00	R$ 1,00
REALIZAVEL A CURTO PRAZO		R$ 11.599.804,66	R$ 9.659.074,32
DUPLICATAS A RECEBER		R$ 6.162.236,91	R$ 5.584.719,36
ADRIANO DA SILVA		R$ 0,00	R$ 1.539,90
ANY LIFE GESTAO PATRIMONIAL S.A.		R$ 0,00	R$ 6.226,67
ASE-IT SOLUCOES EM TECNOLOGIA LTDA		R$ 255.385,00	R$ 290.990,76
ASSOCIACAO DA SANTA CASA DE MISERICORDIA DE OURINHOS		R$ 6.156,00	R$ 0,00
CAMARA MUNICIPAL DE DIADEMA		R$ 37.493,81	R$ 0,00
CASA CIVIL		R$ 0,00	R$ 1.003.000,00
COMANDO DA DECIMA REGIAO MILITAR		R$ 0,00	R$ 16.798,00
CONTROLADORIA E OUVIDORIA GERAL DO ESTADO		R$ 0,00	R$ 318.450,00
COOPERATIVA DE CAFEICULTORES E AGROPECUARISTAS		R$ 3.266,00	R$ 0,00
EXPEDIA DO BRASIL AGENCIA DE VIAGENS E TURISMO LTDA		R$ 2.156.676,00	R$ 0,00
FUND DE APOIO AO ENSINO PESQ E ASSISTENCIA HCFMRP-USP		R$ 2.189,00	R$ 0,00
FUNDACAO HOSPITAL SANTA LYDIA		R$ 75.433,75	R$ 88.069,73
FUNDACAO PARA O DESENVOLVIMENTO MEDICO E HOSPITALAR		R$ 0,00	R$ 63.997,90
FUNDACAO PARA O DESENVOLVIMENTO MEDICO E HOSPITALAR		R$ 3.172,00	R$ 2.834,00
FUNDACAO PARA O DESENVOLVIMENTO MEDICO E HOSPITALAR		R$ 19.789,12	R$ 2.793,40
FUNDACAO PARA O DESENVOLVIMENTO MEDICO E HOSPITALAR FAMESP		R$ 1.464,00	R$ 3.106,40
FUNDACAO PARA O DESENVOLVIMENTO MEDICO E HOSPITALAR OSS		R$ 287,10	R$ 4.136,32

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Descrição	Nota	Saldo Inicial	Saldo Final
FUNDACAO PARA O DESENVOLVIMENTO MEDICO E HOSPITALAR OSS		R$ 2.517,30	R$ 2.491,30
FUNDACAO PARA O DESENVOLVIMENTO MEDICO E HOSPITALAR OSS		R$ 6.748,60	R$ 8.493,10
FUNDO MUNICIPAL DE CULTURA		R$ 0,00	R$ 94.400,00
FUNDO MUNICIPAL DE SAUDE DE MARABA		R$ 131.200,00	R$ 2.859,96
GAS DE ALAGOAS S/A ALGAS		R$ 224.198,10	R$ 0,00
GOIAS TRIBUNAL DE CONTAS		R$ 0,00	R$ 171.000,00
INSPECAO BRASIL SERVICOS OPERACOES PORTUARIAS LTDA		R$ 0,00	R$ 18.750,00
INSTITUTO DE PREVIDENCIA MUNICIPAL DE LENCOIS PAULISTA		R$ 17.511,54	R$ 0,00
INSTITUTO FEDERAL DE EDUCACAO, CIENCIA E TECNOLOGIA DE SAO P		R$ 0,00	R$ 196.900,00
JA SAUDE ANIMAL S.A.		R$ 4.899,00	R$ 0,00
JUSTICA FEDERAL DE PRIMEIRO GRAU EM SAO PAULO		R$ 389.980,00	R$ 0,00
KNORR BREMSE SVCB LTDA.		R$ 0,00	R$ 372.509,75
KNORR-BREMSE SISTEMAS P/ VEICULOS FERROVIARIOS LTDA.		R$ 0,00	R$ 178.695,10
LENOVO TECNOLOGIA (BRASIL) LIMITADA		R$ 0,00	R$ 18.000,00
LENOVO TECNOLOGIA BRASIL LIMITADA		R$ 0,00	R$ 8.700,00
MARCUSSI E DE LAZZARI ACADEMIA LTDA		R$ 1.780,00	R$ 0,00
MUNICIPIO DE AMERICANA		R$ 211.200,00	R$ 0,00
MUNICIPIO DE HORTOLANDIA		R$ 0,00	R$ 72,86
MUNICIPIO DE LENCOIS PAULISTA		R$ 198.632,71	R$ 0,00
MUNICIPIO DE MOGI-GUACU		R$ 82.738,00	R$ 248.214,00
MUNICIPIO DE PATROCINIO PAULISTA		R$ 0,00	R$ 27.660,00
MUNICIPIO DE POA		R$ 0,00	R$ 232.000,00
MUNICIPIO DE VARZEA PAULISTA		R$ 519.200,00	R$ 0,00
MUNICIPIO DE VINHEDO		R$ 287.300,00	R$ 92.400,00
PACER NOVA ALIANCA ACADEMIA LTDA		R$ 0,00	R$ 9.000,00
PALETRANS CARRETAS INDUSTRIAIS LTDA		R$ 300,24	R$ 0,00
PARA MINISTERIO PUBLICO		R$ 0,00	R$ 738.500,00
PAREXEL INTERNATIONAL PESQUISAS CLINICAS LTDA		R$ 2.300,00	R$ 0,00
PREFEITURA MUNICIPAL DE FRANCA		R$ 0,00	R$ 108.749,88
PROCURADORIA GERAL DE JUSTICA		R$ 0,00	R$ 1.103.000,00

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BALANÇO PATRIMONIAL

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Descrição	Nota	Saldo Inicial	Saldo Final
DO ESTADO DO AMAZONAS			
SANTA HELENA IND. DE ALIM. S/A		R$ 5.098,04	R$ 8.694,85
SERVICO AUTONOMO DE AGUA E ESGOTOS		R$ 15.960,00	R$ 0,00
SERVICO AUTONOMO DE AGUA E ESGOTOS DE BEBEDOURO		R$ 0,00	R$ 39.000,00
SERVICO NACIONAL DE APRENDIZAGEM COMERCIAL - SENAC		R$ 10.740,00	R$ 1.390,00
SERVICO NACIONAL DE APRENDIZAGEM INDUSTRIAL SENAI		R$ 258.500,00	R$ 0,00
SERVICO SOCIAL DA INDUSTRIA SESI		R$ 728.970,00	R$ 0,00
TRIBUNAL REGIONAL ELEITORAL DE ALAGOAS		R$ 404.800,00	R$ 5.600,00
ULTRA-SOM EQUIPAMENTOS MEDICOS EIRELI		R$ 0,00	R$ 504,00
ULTRA-SOM LOCACAO DE EQUIPAMENTOS MEDICOS LTDA		R$ 504,00	R$ 0,00
VALMONT INDUSTRIA E COMERCIO LTDA		R$ 656,12	R$ 0,00
WINSPIRE SOL C/TECNOLOGIA INTELIGENTE LTDA		R$ 95.191,48	R$ 95.191,48
APLICACOES FINANCEIRAS DE RENDA FIXA		R$ 4.322.945,82	R$ 3.255.929,21
BANCO ITAU S/A - APLIC AUT MAIS		R$ 85.283,16	R$ 47.079,28
BANCO ITAU S/A - CDB - DI		R$ 1.031.797,47	R$ 1.059.494,76
BANCO BRADESCO S/A - INVEST FACIL		R$ 990,63	R$ 509,61
BANCO BRADESCO S/A - INVEST FACIL FILIAL		R$ 4.550,28	R$ 2.164,59
BANCO DO BRASIL CDB		R$ 1.927,16	R$ 2.096,63
RENDE FACIL B.BRASIL - MATRIZ		R$ 1.121.628,67	R$ 608.032,72
RENDE FACIL B.BRASIL - FILIAL		R$ 2.076.768,45	R$ 1.536.551,62
APLICACOES FINANCEIRAS DE RENDA VARIAVEL		R$ 21.760,00	R$ 21.760,00
APLICACOES EM ACOES		R$ 21.760,00	R$ 21.760,00
ADIANTAMENTOS A FORNECEDORES		R$ 110.188,06	R$ 21.917,75
ADIANTAMENTOS A FORNECEDORES		R$ 109.188,06	R$ 20.917,75
ADIANTAMENTOS A FORNECEDORES		R$ 1.000,00	R$ 1.000,00
EMPRESTIMOS		R$ 0,00	R$ 9.000,00
EMPRESTIMOS A EMPREGADOS		R$ 0,00	R$ 9.000,00
IMPOSTOS A RECUPERAR / COMPENSAR		R$ 202.349,64	R$ 150.027,43
ICMS A RECUPERAR		R$ 188.012,75	R$ 119.298,21
CSLL/PIS/COFINS A RECUPERAR		R$ 215,57	R$ 0,00
OUTROS CREDITOS A RECUPERAR		R$ 12,73	R$ 12,73

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Descrição	Nota	Saldo Inicial	Saldo Final
PIS RETIDO A COMPENSAR		R$ 786,69	R$ 786,69
COFINS RETIDO A COMPENSAR		R$ 3.626,71	R$ 3.626,71
INSS A RECUPERAR		R$ 2.343,04	R$ 2.343,04
PIS - SALDO PED ELETR DE RESSARCIMENTO		R$ 7.092,15	R$ 7.092,15
ICMS A RECUPERAR FILIAL		R$ 260,00	R$ 0,00
IRPJ PERD/DCOMP RESSARCIMENTO		R$ 0,00	R$ 16.867,90
ESTOQUES DE MERCADORIAS PARA REVENDA		R$ 773.139,24	R$ 507.169,93
MERCADORIAS PARA REVENDA		R$ 773.139,24	R$ 374.509,22
MERCADORIAS PARA REVENDA - FILIAL		R$ 0,00	R$ 132.660,71
OUTRAS CONTAS REALIZAVEIS A CURTO PRAZO		R$ 7.184,99	R$ 9.994,04
CAUCAO		R$ 1.709,00	R$ 1.709,00
OUTROS CREDITOS A RECEBER		R$ 5.475,99	R$ 8.285,04
TRANSFERÊNCIA DE MERCADORIA		R$ 0,00	R$ 98.556,60
TRANSFERÊNCIA DE MERCADORIA		R$ 0,00	R$ 98.556,60
ATIVO NAO CIRCULANTE		R$ 5.812.822,56	R$ 4.495.024,94
ATIVO REALIZAVEL A LONGO PRAZO		R$ 0,00	R$ 0,00
COBRANCA EM EXECUCAO		R$ 79.127,64	R$ 79.127,64
CRISTHIAN EDUARDO INSFRAN DELGADO		R$ 3.900,00	R$ 3.900,00
PREFEITURA MUNICIPIO DE ITUPEVA		R$ 62.000,00	R$ 62.000,00
SILVIO MARÇAL ORLANDINI MATÃO		R$ 7.726,57	R$ 7.726,57
FUNDAÇÃO PARA O DESENV. MEDICO		R$ 1.054,30	R$ 1.054,30
FUNDAÇÃO DESENV MEDICO 46.230.439/0003-73		R$ 2.182,09	R$ 2.182,09
FUNDAÇÃO DESENV MEDICO 46.230.439/008-88		R$ 574,20	R$ 574,20
FUNDAÇÃO DESENV MEDICO 46.230.439/0010-00		R$ 765,60	R$ 765,60
FUNDAÇÃO DESENV MEDICO 46.230.439/0013-45		R$ 828,38	R$ 828,38
FUNDAÇÃO DESENV MEDICO 46.230.439/0015-07		R$ 96,50	R$ 96,50
(-) (-)DEDUCOES DO REALIZAVEL A LONGO PRAZO		R$ (79.127,64)	R$ (79.127,64)
(-) (-) PERDAS NO RECEBIMENTO DE CREDITOS		R$ (79.127,64)	R$ (79.127,64)
IMOBILIZADO		R$ 5.791.372,56	R$ 4.473.574,94
COMPRAS P/ ATIVO IMOBILIZADO		R$ 8.595.389,48	R$ 8.706.612,73
MOVEIS E UTENSILIOS		R$ 27.101,94	R$ 24.278,01

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BALANÇO PATRIMONIAL

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CNPJ:	05.778.325/0001-13
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Período Selecionado:	01 de Janeiro de 2023 a 31 de Dezembro de 2023

Descrição	Nota	Saldo Inicial	Saldo Final
MAQUINAS E EQUIPAMENTOS		R$ 3.003,31	R$ 210.599,90
DIREITO DE USO MONITOR - LEASING - 686465		R$ 183.005,03	R$ 183.005,03
EQUIPAMENTOS DE INFORMATICA		R$ 4.233,41	R$ 4.233,41
DIREITO DE USO DESKTOP - LEASING - 686465		R$ 1.376.115,03	R$ 1.376.115,03
INSTALAÇOES		R$ 8.000,00	R$ 8.000,00
MAQUINAS E EQUIPAMENTOS		R$ 74.191,75	R$ 74.191,75
APARELHOS DE TELECOMUNICACOES		R$ 11.898,27	R$ 11.898,27
EQUIPAMENTO DE INFORMATICA		R$ 580.509,68	R$ 571.335,38
EQUIPAMENTOS DE INFORMATICA		R$ 5.634.754,13	R$ 5.733.379,02
VEICULOS		R$ 85.865,57	R$ 85.865,57
VEICULOS		R$ 606.711,36	R$ 423.711,36
(-) (-) DEPRECIACAO ACUMULADA		R$ (2.804.016,92)	R$ (4.233.037,79)
(-) (-) DEPRECIACAO DE MOVEIS E UTENSILIOS		R$ (2.859,49)	R$ (3.439,99)
(-) (-) DEPRECIACAO DE EQUIPAMENTO DE INFORMATICA		R$ (1.566.074,02)	R$ (2.675.421,84)
(-) (-) DEPRECIACAO DE VEICULOS		R$ (437.252,29)	R$ (451.569,29)
(-) DEPRECIACAO DE EQUIPAMENTOS DE INFORMATICA		R$ 0,00	R$ (936,09)
(-) (-) DPR.ACUM: DIREITO DE USO MONITOR - LE		R$ (15.249,80)	R$ (51.850,76)
(-) (-) DPR.ACUM: DIREITO DE USO DESKTOP - LE		R$ (114.671,65)	R$ (389.894,65)
(-) (-) DPR.ACUM: INSTALAÇOES		R$ (8.000,00)	R$ (8.000,00)
(-) (-) DPR.ACUM:MAQUINAS E EQUIPAMENTOS		R$ (74.191,75)	R$ (74.191,75)
(-) (-) DPR.ACUM:APARELHOS DE TELECOMUNICACOES		R$ (5.208,24)	R$ (6.398,04)
(-) (-) DPR.ACUM:EQUIPAMENTOS DE INFORMATICA		R$ (580.509,68)	R$ (571.335,38)
INTANGIVEL		R$ 21.450,00	R$ 21.450,00
BENS INTANGIVEIS		R$ 21.450,00	R$ 21.450,00
SOFTWARES E LICENCAS		R$ 21.450,00	R$ 21.450,00
P A S S I V O		R$ 17.413.730,03	R$ 14.156.029,30
PASSIVO CIRCULANTE		R$ 10.290.492,38	R$ 8.000.992,77
FORNECEDORES - EXIGIVEIS A CURTO PRAZO		R$ 7.389.489,57	R$ 4.803.842,92
FORNECEDORES		R$ 7.389.489,57	R$ 4.803.842,92
2 TABELIAO DE NOTAS DE RIBEIRAO PRETO		R$ 0,00	R$ 119,60
A Z INFORMATICA LTDA		R$ 180,00	R$ 0,00

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Descrição	Nota	Saldo Inicial	Saldo Final
ABC ATACADO BRASILEIRO DA CONSTRUCAO S.A		R$ 6.191,16	R$ 0,00
AGIS EQUIP. E SERV INFORMATICA LTDA		R$ 101.669,24	R$ 3.007,54
AMWSYS TECNOLOGIA LTDA		R$ 1.698,65	R$ 1.698,65
ASE-IT SOLUCOES EM TECNOLOGIA LTDA		R$ 276,00	R$ 0,00
ATC FACILITIES EIRELI		R$ 2.408,50	R$ 0,00
ATR VEICULOS LTDA 00015256		R$ 2.462,00	R$ 0,00
AUDAX BUSINESS SOLUTIONS INFORMATICA LTDA ME		R$ 663,96	R$ 665,10
BRASPRESS TRANSPORTES URGENTES LTDA		R$ 1.986,84	R$ 0,00
BRASPRESS TRANSPORTES URGENTES LTDA		R$ 464,41	R$ 0,00
CAFE UTAM S/A		R$ 600,40	R$ 0,00
CASA DO VIDRACEIRO IND E COM EIRELI		R$ 1.416,65	R$ 0,00
CDC BRASIL DISTRIBUIDORA LTDA.		R$ 17.801,16	R$ 0,00
CENTRO ELETRONICO E COMERCIAL SETRON LTDA - EPP		R$ 425,33	R$ 441,45
CIRILO CABOS IMPORTACAO E EXPORTACAO		R$ 4.588,15	R$ 0,00
CLARO S/A		R$ 5.578,35	R$ 0,00
CLARO S.A		R$ 110,04	R$ 0,00
COMPANHIA PAULISTA DE FORCA E LUZ		R$ 1.365,96	R$ 1.247,54
CONNECT OFFICE MATERIAL DE ESCRITORIO E		R$ 4.500,00	R$ 0,00
DELL COMPUTADORES DO BRASIL LTDA		R$ 0,00	R$ 18.508,55
DELL COMPUTADORES DO BRASIL LTDA		R$ 0,00	R$ 4.270,31
DELL COMPUTADORES DO BRASIL LTDA		R$ 5.630,72	R$ 0,00
EDGAR RODRIGUES MATTAR JUNIOR 1607363380		R$ 3.000,00	R$ 0,00
ELETRICA BRASILIA RP EIRELI		R$ 582,00	R$ 0,00
ESCRITORIO CONTABIL SOUZA S/S LTDA		R$ 3.927,03	R$ 6.056,00
EVERTON JULIANO DE SOUZA 36699328875		R$ 1.415,34	R$ 0,00
FASSIM LIDER IMPORTACAO E EXPORTACAO LTD		R$ 2.413,33	R$ 0,00
GABRIELA DE FARIA BARCELLOS SALIBY MARTI		R$ 6.219,84	R$ 0,00
GUILHERME DIAS DOS SANTOS BRASIL 4925664		R$ 291,55	R$ 0,00
IBM BRASIL-INDUSTRIA MAQUINAS E SERVICOS LIMITADA		R$ 111,92	R$ 0,00

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INGRAM MICRO BRASIL LTDA		R$ 0,00	R$ 5.477,22
J. GRESPI MARINA EIRELI		R$ 820,00	R$ 0,00
JAMEF TRANSPORTES EIRELI - VIX		R$ 7.257,33	R$ 0,00
JR PRADO DISTRIBUIDORA LTDA		R$ 62,00	R$ 0,00
JV VISTORIA PREVIA LTDA		R$ 250,00	R$ 0,00
KARIMEX COMPONENTES ELETRONICOS LTD		R$ 102.900,17	R$ 0,00
LENOVO TECNOLOGIA BRASIL LTDA		R$ 7.026.449,82	R$ 4.683.345,84
LEXMARK INTERNATIONAL DO BRASIL LTDA		R$ 266,90	R$ 0,00
LIMPEL RIBER MATERIAIS DE LIMPEZA LTDA -		R$ 107,70	R$ 0,00
MARTINS MOREIRA TRANSPORTE E LOGISTICA EIRELI		R$ 0,00	R$ 1.502,76
MARTINS MOREIRA TRANSPORTE E LOGISTICA EIRELI		R$ 0,00	R$ 21.795,10
MAZER DISTRIBUIDORA LTDA		R$ 26.281,52	R$ 13.540,00
METALURGICA CATAGUAZES EIRELI		R$ 0,00	R$ 15.000,01
MJF MATERIAL PARA ESCRITORIO EIRELI		R$ 0,00	R$ 1.356,00
Movvi Logistica LTDA		R$ 6.690,88	R$ 0,00
NELSON MACHADO NETO MARKETING DIRETO		R$ 2.000,00	R$ 0,00
NUBE NUCLEO BRASILEIRO DE ESTAGIOS LTDA		R$ 0,00	R$ 105,01
PASSALACQUA TECH LTDA		R$ 0,00	R$ 435,31
PEDRAO PVC MATERIAIS PARA CONSTRUCAO LTD		R$ 74,28	R$ 0,00
RODRIGO CESAR ALVES DOS SANTOS 369677948		R$ 480,00	R$ 0,00
ROJAS & ROJAS COMERCIO DE APARELHOS		R$ 1.700,00	R$ 0,00
SCANSOURCE BRASIL DISTRIBUIDORA DE TECNO		R$ 6.115,00	R$ 0,00
SERASA S.A.		R$ 665,00	R$ 0,00
SETRON SEGURANCA ELETRONICA LTDA		R$ 570,60	R$ 0,00
SRC CONSULTORIA E INTERMEDIACOES LTDA		R$ 20.000,00	R$ 20.000,00
SUZANO S.A.		R$ 0,00	R$ 254,58
SUZANO S.A.		R$ 241,24	R$ 0,00
TAM LINHAS AEREAS S/A		R$ 3.617,40	R$ 3.617,40
VALERIA NEVES DOS SANTOS		R$ 0,00	R$ 1.100,00
VALERIA NEVES DOS SANTOS		R$ 1.000,00	R$ 0,00

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1937

BALANÇO PATRIMONIAL

Entidade:	E.R. SOLUCOES INFORMATICA LTDA
Período da Escrituração:	01/01/2023 a 31/12/2023
CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	18
Período Selecionado:	01 de Janeiro de 2023 a 31 de Dezembro de 2023

Descrição	Nota	Saldo Inicial	Saldo Final
VICTONER COMERCIO EIRELI		R$ 3.775,00	R$ 0,00
ZENAK COMERCIO DE MATERIAIS PARA ESCRITO		R$ 186,20	R$ 0,00
ZENAK COMERCIO DE MATERIAIS PARA ESCRITORIO LTDA		R$ 0,00	R$ 298,95
EMPRESTIMOS E FINANCIAMENTOS CURTO PRAZO		R$ 1.372.833,00	R$ 519.706,69
AYMORÉ CREDITOS FINANC E INVEST S.A.		R$ 58.126,31	R$ 0,00
EMPRESTIMOS E FINANCIAMENTOS BANCARIOS		R$ 1.314.706,69	R$ 519.706,69
ASE-IT SOLUÇÕES EM TECNOLOGIA LTDA		R$ 795.000,00	R$ 0,00
BC DE LACE LANDEN BRASIL S.A - LEASING- CP		R$ 679.694,88	R$ 679.694,88
(-) (-) JUROS S/ FINANCIAMENTOS A APROPRIAR		R$ (159.988,19)	R$ (159.988,19)
OBRIGACOES TRABALHISTAS		R$ 710.637,50	R$ 1.138.371,55
FOLHA DE PAGAMENTO DE EMPREGADOS		R$ 69.051,50	R$ 311.222,47
SALARIOS A PAGAR		R$ 69.045,58	R$ 311.222,47
FERIAS A PAGAR		R$ 5,92	R$ 0,00
PROVISAO PARA OBRIGACOES TRABALHISTAS		R$ 227.776,87	R$ 415.365,94
PROVISAO INSS S/FERIAS		R$ 44.605,60	R$ 81.475,74
PROVISAO FGTS S/FERIAS		R$ 13.568,24	R$ 24.783,30
PROVISAO DE FERIAS		R$ 169.603,03	R$ 309.106,90
PRO-LABORE DE DIRIGENTES A PAGAR		R$ 6.521,08	R$ 6.903,98
PRO-LABORE A PAGAR		R$ 5.442,40	R$ 6.903,98
PRO-LABORE A PAGAR		R$ 1.078,68	R$ 0,00
ENCARGOS SOCIAIS A PAGAR		R$ 407.288,05	R$ 404.879,16
INSS A RECOLHER		R$ 140.942,65	R$ 140.188,69
FGTS A RECOLHER		R$ 38.439,13	R$ 46.092,74
CONTRIBUICOES A SINDICATOS A RECOLHER		R$ 495,06	R$ 563,93
IRRF SOBRE FOLHA DE PAGAMENTO A RECOLHER		R$ 227.411,21	R$ 218.033,80
OBRIGACOES TRIBUTARIAS		R$ 100.517,43	R$ 192.261,13
IMPOSTOS RETIDOS A RECOLHER		R$ 34.858,82	R$ 3.273,47
IRRF A RECOLHER		R$ 167,92	R$ 454,73
PIS,COFINS E CSLL RETIDO		R$ 34.393,23	R$ 2.818,74
INSS RETIDO A RECOLHER		R$ 297,67	R$ 0,00
IMPOSTOS E CONTR S/RECEITAS A RECOLHER		R$ 65.658,61	R$ 188.987,66

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1938

BALANÇO PATRIMONIAL

Entidade:	E.R. SOLUCOES INFORMATICA LTDA
Período da Escrituração:	01/01/2023 a 31/12/2023
CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	18
Período Selecionado:	01 de Janeiro de 2023 a 31 de Dezembro de 2023

Descrição	Nota	Saldo Inicial	Saldo Final
ISS A PAGAR		R$ 1.341,36	R$ 1.159,12
COFINS A PAGAR		R$ 35.394,28	R$ 111.170,12
PIS A PAGAR		R$ 7.720,08	R$ 24.113,50
ICMS A PAGAR - SUBSTITUICAO TRIBUTARIA		R$ 1.104,06	R$ 1.104,06
ICMS A PAGAR - FILIAL		R$ 20.098,83	R$ 51.440,86
IMPOSTOS E CONTRIBUICOES SOBRE O LUCRO		R$ 609.402,98	R$ 710.867,96
PROVISAO PARA A CONTRIBUICAO SOCIAL		R$ 97.350,51	R$ 90.747,85
CONTRIBUICAO SOCIAL A RECOLHER		R$ 97.350,51	R$ 90.747,85
PROVISAO PARA O IMPOSTO DE RENDA		R$ 512.052,47	R$ 620.120,11
IRPJ A RECOLHER		R$ 512.052,47	R$ 620.120,11
RECEBIMENTOS ANTECIPADOS		R$ 107.611,90	R$ 635.942,52
ADIANTAMENTOS DE CLIENTES		R$ 107.611,90	R$ 635.942,52
ADIANTAMENTO DE CLIENTES		R$ 107.611,90	R$ 942,52
ADTO CLIENTE - ASE-IT SOLUÇÕES EM TECN. LTDA		R$ 0,00	R$ 635.000,00
PASSIVO NAO CIRCULANTE		R$ 989.069,15	R$ 405.153,98
EMPRESTIMOS E FINANCIAMENTOS		R$ 924.328,92	R$ 405.153,98
EMPRESTIMOS E FINANCIAMENTOS BANCARIOS		R$ 822.868,92	R$ 303.162,24
(-) (-) JUROS A APROPRIAR LP		R$ (253.314,64)	R$ (93.326,44)
BC DE LAGE LANDEN BRASIL S.A-LEASING -LP		R$ 1.076.183,56	R$ 396.488,68
EMPRESTIMOS DE PESSOAS LIGADAS		R$ 101.460,00	R$ 101.991,74
EMPR DE SOCIOS - ANDRE LUIS M. PELICIONI		R$ 101.460,00	R$ 101.991,74
OUTRAS OBRIGACOES EXIGIVEIS LONGO PRAZO		R$ 64.740,23	R$ 0,00
CONTAS A PAGAR A LONGO PRAZO		R$ 64.740,23	R$ 0,00
AINF ICMS PROC.Nº 372020510000043 -09/19		R$ 64.740,23	R$ 0,00
P A T R I M O N I O L I Q U I D O		R$ 6.134.168,50	R$ 5.749.882,55
CAPITAL SOCIAL		R$ 1.107.581,77	R$ 1.107.581,77
CAPITAL SOCIAL DE DOMICILIADOS NO PAIS		R$ 1.107.581,77	R$ 1.107.581,77
CAPITAL		R$ 1.000.000,00	R$ 1.000.000,00
AFAC - ANDRE LUIS MACHADO PELICIONI		R$ 107.581,77	R$ 107.581,77
LUCROS ACUMULADOS		R$ 0,00	R$ 4.642.300,78
LUCROS ACUMULADOS E OU SALDO DISPOSIÇÃO		R$ 0,00	R$ 4.642.300,78

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1939

BALANÇO PATRIMONIAL

Entidade:	E.R. SOLUCOES INFORMATICA LTDA		
Período da Escrituração:	01/01/2023 a 31/12/2023	CNPJ:	05.778.325/0001-13
Número de Ordem do Livro:	18		
Período Selecionado:	01 de Janeiro de 2023 a 31 de Dezembro de 2023		

Descrição	Nota	Saldo Inicial	Saldo Final
LUCRO DO EXERCICIO CORRENTE		R$ 0,00	R$ 4.642.300,78
RESULTADOS DO EXERCICIO		R$ 5.026.586,73	R$ 0,00
RESULTADOS DO EXERCICIO		R$ 5.026.586,73	R$ 0,00
RESULTADOS DO EXERCICIO		R$ 5.026.586,73	R$ 0,00

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1940

DEMONSTRAÇÃO DE LUCROS OU PREJUÍZOS ACUMULADOS

Entidade:	E.R. SOLUCOES INFORMATICA LTDA				
Período da Escrituração:	01/01/2023 a 31/12/2023	CNP	05.778.325/0001-13	Número de Ordem do Livro:	18
Período Selecionado:	01 de Janeiro de 2023 a 31 de Dezembro de 2023				

Histórico	Código de Aglutinação das Contas de Patrimônio Líquido
	LUCRO DO EXERCICIO CORRENTE (R$)
Saldo Anterior de Lucros Acumulados	5.026.586,73
Ajustes Credores de Períodos-base Anteriores	0,00
Reversão de Reservas	0,00
Outros Recursos	0,00
Lucro Líquido do Ano	5.451.895,66
(-)Saldo Anterior de Prejuízo Acumulados	0,00
(-)Ajustes Devedores de Períodos-base Anteriores	0,00
(-)Prejuízo Líquido do Ano	0,00
TOTAL	10.478.482,39
Transferências para Reservas	0,00
Dividendos ou Lucros Distribuídos, Pagos ou Creditados	(-)2.935.695,80
Dividendos ou Lucros Distribuídos, Pagos ou Creditados	(-)2.900.485,81
Parcela dos Lucros Incorporados ao Capital	0,00
Outras Destinações	0,00
TOTAL	5.836.181,61
LUCROS OU PREJUÍZOS ACUMULADOS	4.642.300,78
Notas	

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número 99.A8.BE.CC.BD.9F.8E.BE.61.E8.A7.CF.1C.20.66.24.FF.67.5F.AC-0, nos termos do Decreto nº 8.683/2016.

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241)

SEI 2025.001317 / pg. 1941

E.R Soluções Informática Ltda

CNPJ: 05.778.325/0001-13

Av. Senador Cesar Vergueiro, 1069 Sala 04 e 05

Jardim São Luís, Ribeirão Preto/SP - CEP: 14020-500

ÍNDICES ECONÔMICO-FINANCEIROS REFERENTES AO EXERCICIO DE 2023

LIQUIDEZ GERAL

$$LG = \frac{\text{ATIVO CIRCULANTE + ATIVO REALIZÁVEL A LONGO PRAZO}}{\text{PASSIVO CIRCULANTE + PASSIVO NÃO CIRCULANTE}}$$

$$LG = \frac{9.661.004,36}{8.406.146,75} \qquad \textbf{LG = 1,15}$$

SOLVÊNCIA GERAL

$$SG = \frac{\text{ATIVO TOTAL}}{\text{PASSIVO CIRCULANTE + PASSIVO NÃO CIRCULANTE}}$$

$$SG = \frac{14.156.029,30}{8.406.146,75} \qquad \textbf{SG = 1,68}$$

LIQUIDEZ CORRENTE

$$LC = \frac{\text{ATIVO CIRCULANTE}}{\text{PASSIVO CIRCULANTE}}$$

$$LC = \frac{9.661.004,36}{8.000.992,77} \qquad \textbf{LC = 1,21}$$

Ribeirão Preto/SP, 31 de Dezembro de 2023

GEORGE EDUARDO SALIBY:98291335834 — Assinado de forma digital por GEORGE EDUARDO SALIBY:98291335834 Dados: 2024.04.30 14:46:25 -03'00'

George Eduardo Saliby
Sócio Gerente
CPF: 982.913.358-34

ANDRE LUIS MACHADO PELICIONI:24878554878 — Assinado de forma digital por ANDRE LUIS MACHADO PELICIONI:24878554878 Dados: 2024.04.30 14:45:47 -03'00'

André Luis Machado Pelicioni
Sócio Gerente
CPF: 248.785.548-78

FERNANDO CARVALHO DE SOUZA:24847040899 — Assinado de forma digital por FERNANDO CARVALHO DE SOUZA:24847040899 Dados: 2024.04.16 09:42:35 -03'00'

Fernando Carvalho de Souza
Contador
CRC 1SP208546/O-7

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1942

AV. SEN. CESAR VERGUEIRO, 1069
JARDIM SÃO LUIZ, RIBEIRÃO PRETO, SP
+55 16 3234-4433
contato@ersolucoes.com.br
www.ersolucoes.com.br

ER SOLUÇÕES

Lenovo Partner Engage Program VAR

Lenovo

Empresa: **E.R. SOLUCOES INFORMATICA LTDA**
Inscrição: 05.778.325/0001-13
Endereço: AVENIDA SENADOR CESAR VERGUEIRO, 1069, SALAS 4 E 5, JARDIM SAO LUIZ, RIBEIRAO PRETO/SP, CEP 14020-500
Período: 01/01/2020 - 31/12/2023

Página: 0001
Número livro: 0000

COEFICIENTES DE ANÁLISES EM 31/12/2023

Coeficiente	Fórmula	Valor	Resultado
Índice de Liquidez Geral	Ativo Circulante + Realizável Longo Prazo	9.661.004,36 + 79.127,64	1,16
	Passivo Circulante + Passivo Não-Circulante	8.000.992,77 + 405.153,98	
Índice de Liquidez Corrente	Ativo Circulante	9.661.004,36	1,21
	Passivo Circulante	8.000.992,77	
Índice de Solvência Geral	Ativo	14.156.029,30	1,68
	Passivo Circulante + Passivo Não-Circulante	8.000.992,77 + 405.153,98	
Grau de Endividamento	Passivo Circulante + Passivo Não-Circulante	8.000.992,77 + 405.153,98	0,59
	Ativo	14.156.029,30	

GEORGE EDUARDO SALIBY:98291335834
Assinado de forma digital por GEORGE EDUARDO SALIBY:98291335834
Dados: 2024.09.02 17:19:01 -03'00'

GEORGE EDUARDO SALIBY

CPF: 982.913.358-34

ANDRE LUIS MACHADO PELICIONI:24878554878
Assinado de forma digital por ANDRE LUIS MACHADO PELICIONI:24878554878
Dados: 2024.09.02 17:19:18 -03'00'

ANDRE LUIS MACHADO PELICIONI

CPF: 248.785.548-78

FERNANDO CARVALHO DE SOUZA:24847040899
Assinado de forma digital por FERNANDO CARVALHO DE SOUZA:24847040899
Dados: 2024.09.02 17:00:33 -03'00'

FERNANDO CARVALHO DE SOUZA
Reg. no CRC - SP sob o No. 1SP208546/O-2
CPF: 248.470.408-99

CONSELHO REGIONAL DE CONTABILIDADE DO ESTADO DE SÃO PAULO

CERTIDÃO DE HABILITAÇÃO PROFISSIONAL
Nº 2025/050233

O CONSELHO REGIONAL DE CONTABILIDADE DO ESTADO DE SÃO PAULO certifica que o(a) profissional identificado(a) no presente documento encontra-se habilitado para o exercício da profissão contábil.

IDENTIFICAÇÃO DO REGISTRO

NOME .....:	AMAURI BARBOSA DE SOUZA
NOME SOCIAL :	
REGISTRO .....:	1SP056587/O-9
CATEGORIA ...:	TÉCNICO EM CONTABILIDADE
CPF .....:	167.762.248-20

A falsificação deste documento constitui-se em crime previsto no Código Penal Brasileiro, sujeitando o autor à respectiva ação penal.

Emissão: São Paulo, 05/05/2025 às 13:40:59

Válido até: 03/08/2025

Código de Controle: 3873.9559.9622.1783

Para verificar a autenticidade deste documento, consulte o site do CRCSP.

CONSELHO REGIONAL DE CONTABILIDADE DO ESTADO DE SÃO PAULO

CERTIDÃO DE HABILITAÇÃO PROFISSIONAL
Nº 2025/050235

O CONSELHO REGIONAL DE CONTABILIDADE DO ESTADO DE SÃO PAULO certifica que o(a) profissional identificado(a) no presente documento encontra-se habilitado para o exercício da profissão contábil.

IDENTIFICAÇÃO DO REGISTRO

NOME .....:	FERNANDO CARVALHO DE SOUZA
NOME SOCIAL :	
REGISTRO .....:	1SP208546/O-2
CATEGORIA ...:	CONTADOR
CPF .....:	248.470.408-99

A falsificação deste documento constitui-se em crime previsto no Código Penal Brasileiro, sujeitando o autor à respectiva ação penal.

Emissão: São Paulo, 05/05/2025 às 13:42:13

Válido até: 03/08/2025

Código de Controle: 2141.9559.9621.1482

Para verificar a autenticidade deste documento, consulte o site do CRCSP.

MINISTÉRIO DA FAZENDA
Secretaria da Receita Federal do Brasil
Procuradoria-Geral da Fazenda Nacional

CERTIDÃO NEGATIVA DE DÉBITOS RELATIVOS AOS TRIBUTOS FEDERAIS E À DÍVIDA ATIVA DA UNIÃO

Nome: E.R. SOLUCOES INFORMATICA LTDA
CNPJ: 05.778.325/0001-13

Ressalvado o direito de a Fazenda Nacional cobrar e inscrever quaisquer dívidas de responsabilidade do sujeito passivo acima identificado que vierem a ser apuradas, é certificado que não constam pendências em seu nome, relativas a créditos tributários administrados pela Secretaria da Receita Federal do Brasil (RFB) e a inscrições em Dívida Ativa da União (DAU) junto à Procuradoria-Geral da Fazenda Nacional (PGFN).

Esta certidão é válida para o estabelecimento matriz e suas filiais e, no caso de ente federativo, para todos os órgãos e fundos públicos da administração direta a ele vinculados. Refere-se à situação do sujeito passivo no âmbito da RFB e da PGFN e abrange inclusive as contribuições sociais previstas nas alíneas 'a' a 'd' do parágrafo único do art. 11 da Lei nº 8.212, de 24 de julho de 1991.

A aceitação desta certidão está condicionada à verificação de sua autenticidade na Internet, nos endereços <http://rfb.gov.br> ou <http://www.pgfn.gov.br>.

Certidão emitida gratuitamente com base na Portaria Conjunta RFB/PGFN nº 1.751, de 2/10/2014.
Emitida às 15:59:16 do dia 05/02/2025 <hora e data de Brasília>.
Válida até 04/08/2025.
Código de controle da certidão: **053E.7277.7E0D.B5A1**
Qualquer rasura ou emenda invalidará este documento.

ESTADO DO ESPÍRITO SANTO
SECRETARIA DE ESTADO DA FAZENDA

Certidão Negativa de Débitos para com a Fazenda Pública Estadual - MOD. 2

Certidão Nº 20250000746554

Identificação do Requerente: CNPJ N° 05.778.325/0005-47

Certificamos que, até a presente data, não existe débito contra o portador do Cadastro de Pessoa Jurídica acima especificado, ficando ressalvada à Fazenda Pública Estadual o direito de cobrar quaisquer dívidas que venham a ser apuradas.

Certidão emitida via Sistema Eletrônico de Processamento de Dados, nos termos do Regulamento do ICMS/ES, aprovado pelo Decreto nº 1.090-R, de 25 de outubro de 2002.

Certidão emitida em **22/05/2025**, válida até **20/08/2025**.

A autenticidade deste documento poderá ser confirmada via internet por meio do endereço **www.sefaz.es.gov.br** ou em qualquer Agência da Receita Estadual.

Vitória, 22/05/2025.

Autenticação eletrônica: **0005.663D.29A0.826A**

PREFEITURA MUNICIPAL DA SERRA
Secretaria Municipal da Fazenda

CEP: 29176-439 - RUA MAESTRO ANTONIO CICERO, N° 111 CACAROCA Serra ES

Certidão Negativa de Débitos

N° da Certidão: 12005133/2025 **Data Geração:25/05/2025** **Data Validade:25/07/2025**

CERTIFICAMOS, que não constam em nome do sujeito passivo identificado, nesta data, débitos com a Fazenda Pública Municipal, ressalvando o direito do município de cobrar quaisquer débitos que vierem a ser conhecidos e apurados após a expedição.

Essa certidão com base no art. 178 da Lei 3833, de 29 de dezembro de 2011, Código Tributário Municipal (CTM).

Identificação

Ccm **4709131** **InscrMunicipal 4709131 Situação: Ativo**
Razão Social **E.R. SOLUCOES INFORMATICA LTDA**
CNPJ / CPF **05.778.325/0005-47**
Inscrição Estadual/RG
Endereço **29161-384 - AVENIDA CEM, 0 S/N, QUADRA 01 MOD 01 SALA 01 PISO 2**
Bairro **TERMINAL INTERMODAL DA SERRA** **Cidade SERRA** **Estado ES**

Serra, Domingo, 25 de Maio de 2025
N° da Certidão: 12005133/2025
Inscrição: 4709131

Tanto a veracidade da informação quanto a manutenção da condição de não devedor poderá ser verificada na seguinte página da Internet:
http://www.serra.es.gov.br/

ATENÇÃO: Qualquer rasura ou emenda **INVALIDARÁ** este documento.

Voltar Imprimir

CAIXA ECONÔMICA FEDERAL

Certificado de Regularidade do FGTS - CRF

Inscrição: 05.778.325/0005-47

Razão Social: ER SOLUCOES INFORMATICA LTDA

Endereço: AV CEM QUADRA 01 MODULO 01 SALA 01 PISO 2 / TERM INTERM DA SERR / SERRA / ES / 29161-384

A Caixa Econômica Federal, no uso da atribuição que lhe confere o Art. 7, da Lei 8.036, de 11 de maio de 1990, certifica que, nesta data, a empresa acima identificada encontra-se em situação regular perante o Fundo de Garantia do Tempo de Servico - FGTS.

O presente Certificado não servirá de prova contra cobrança de quaisquer débitos referentes a contribuições e/ou encargos devidos, decorrentes das obrigações com o FGTS.

Validade:16/06/2025 a 15/07/2025

Certificação Número: 2025061604561247943648

Informação obtida em 23/06/2025 09:20:19

A utilização deste Certificado para os fins previstos em Lei esta condicionada a verificação de autenticidade no site da Caixa: **www.caixa.gov.br**

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1949

PODER JUDICIÁRIO
JUSTIÇA DO TRABALHO

CERTIDÃO NEGATIVA DE DÉBITOS TRABALHISTAS

Nome: E.R. SOLUCOES INFORMATICA LTDA (MATRIZ E FILIAIS)
CNPJ: 05.778.325/0005-47
Certidão nº: 20035610/2025
Expedição: 08/04/2025, às 16:01:53
Validade: 05/10/2025 - 180 (cento e oitenta) dias, contados da data de sua expedição.

Certifica-se que **E.R. SOLUCOES INFORMATICA LTDA (MATRIZ E FILIAIS),** inscrito(a) no CNPJ sob o nº **05.778.325/0005-47, NÃO CONSTA** como inadimplente no Banco Nacional de Devedores Trabalhistas.
Certidão emitida com base nos arts. 642-A e 883-A da Consolidação das Leis do Trabalho, acrescentados pelas Leis ns.º 12.440/2011 e 13.467/2017, e no Ato 01/2022 da CGJT, de 21 de janeiro de 2022.
Os dados constantes desta Certidão são de responsabilidade dos Tribunais do Trabalho.
No caso de pessoa jurídica, a Certidão atesta a empresa em relação a todos os seus estabelecimentos, agências ou filiais.
A aceitação desta certidão condiciona-se à verificação de sua autenticidade no portal do Tribunal Superior do Trabalho na Internet (http://www.tst.jus.br).
Certidão emitida gratuitamente.

INFORMAÇÃO IMPORTANTE
Do Banco Nacional de Devedores Trabalhistas constam os dados necessários à identificação das pessoas naturais e jurídicas inadimplentes perante a Justiça do Trabalho quanto às obrigações estabelecidas em sentença condenatória transitada em julgado ou em acordos judiciais trabalhistas, inclusive no concernente aos recolhimentos previdenciários, a honorários, a custas, a emolumentos ou a recolhimentos determinados em lei; ou decorrentes de execução de acordos firmados perante o Ministério Público do Trabalho, Comissão de Conciliação Prévia ou demais títulos que, por disposição legal, contiver força executiva.

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1950

PODER JUDICIÁRIO

TRIBUNAL DE JUSTIÇA DO ESTADO DE SÃO PAULO

CERTIDÃO ESTADUAL DE DISTRIBUIÇÕES CÍVEIS

CERTIDÃO Nº: 1850094 **FOLHA: 1/1**

A autenticidade desta certidão poderá ser confirmada pela internet no site do Tribunal de Justiça.

A Diretoria de Serviço Técnico de Informações Cíveis do(a) Comarca de São Paulo - Capital, no uso de suas atribuições legais,

CERTIFICA E DÁ FÉ que, pesquisando os registros de distribuições de **PEDIDOS DE FALÊNCIA, CONCORDATAS, RECUPERAÇÕES JUDICIAIS E EXTRAJUDICIAIS**, anteriores a 05/06/2025, verificou **NADA CONSTAR** como réu/requerido/interessado em nome de: **********

E.R. SOLUCOES INFORMATICA LTDA, CNPJ: 05.778.325/0001-13, conforme indicação constante do pedido de certidão.**********

Esta certidão não aponta ordinariamente os processos em que a pessoa cujo nome foi pesquisado figura como autor (a). São apontados os feitos com situação em tramitação já cadastrados no sistema informatizado referentes a todas as Comarcas/Foros Regionais e Distritais do Estado de São Paulo.

A data de informatização de cada Comarca/Foro pode ser verificada no Comunicado SPI nº 22/2019.

Esta certidão considera os feitos distribuídos na 1ª Instância, mesmo que estejam em Grau de Recurso.

Não existe conexão com qualquer outra base de dados de instituição pública ou com a Receita Federal que verifique a identidade do NOME/RAZÃO SOCIAL com o CPF/CNPJ. A conferência dos dados pessoais fornecidos pelo pesquisado é de responsabilidade exclusiva do destinatário da certidão.

A certidão em nome de pessoa jurídica considera os processos referentes à matriz e às filiais e poderá apontar feitos de homônimos não qualificados com tipos empresariais diferentes do nome indicado na certidão (EIRELI, S/C, S/S, EPP, ME, MEI, LTDA).

Não é necessária a complementação com a certidão do sistema eproc.

Esta certidão só tem validade mediante assinatura digital.

Esta certidão é sem custas.

São Paulo, 6 de junho de 2025.

PEDIDO N°: ***0087126230***

PODER JUDICIÁRIO
TRIBUNAL DE JUSTIÇA DO ESTADO DO ESPÍRITO SANTO
R. Des. Homero Mafra, 60 Enseada do Suá, Vitória - ES | CEP: 29.050-275 | Tel: (27) 3334-2000.

CERTIDÃO NEGATIVA DE PRIMEIRA INSTÂNCIA
NATUREZA DE RECUPERAÇÃO JUDICIAL E EXTRAJUDICIAL (FALÊNCIA E CONCORDATA)

Dados da Certidão

Razão Social: E.R SOLUCOES INFORMATICA LTDA

CNPJ:	05.778.325/0005-47		
Data de Expedição:	09/06/2025 14:22:56	**Validade:**	30 DIAS
N° da Certidão:	**** 2024699426 ****		
-- ENDEREÇO --			
Município:	*- NÃO INFORMADO -*	**Bairro:**	*- NÃO INFORMADO -*
Logradouro:	*- NÃO INFORMADO -*	**Número:**	*- NÃO INFORMADO -*
Complemento:	*- NÃO INFORMADO -*	**CEP:**	*- NÃO INFORMADO -*
-- CONTATO --			
Email:	*- NÃO INFORMADO -*	**Telefone Fixo:**	*- NÃO INFORMADO -*
		Telefone Celular:	*- NÃO INFORMADO -*

CERTIFICA que, consultando a base de dados do Sistema de Gerenciamento de Processos do Poder Judiciário do Estado do Espírito Santo (E-Jud, SIEP, PROJUDI e PJe) até a presente data e hora, **NADA CONSTA** contra o solicitante .

Observações

a. Certidão expedida gratuitamente através da Internet;
b. Os dados do(a) solicitante acima informados são de sua responsabilidade, devendo a titularidade ser conferida pelo interessado e/ou destinatário;
c. O prazo de validade desta certidão é de 30 (trinta) dias, contados da data da expedição, conforme disposto no art. 467 do Código de Normas da Corregedoria Geral da Justiça. Após essa data será necessária a emissão de uma nova certidão;
d. A autenticidade desta certidão poderá ser confirmada na página do Tribunal de Justiça do Estado do Espírito Santo - www.tjes.jus.br -, utilizando o número da certidão acima identificado;
e. Em relação as comarcas da entrância especial (Vitória/Vila Velha/Cariacica/Serra/Viana), as ações de: execução fiscal estadual, falência e recuperação judicial, e auditoria militar, tramitam, apenas, no juízo de Vitória;
f. As ações de natureza cível abrangem inclusive aquelas que tramitam nas varas de Órfãos e Sucessões (Tutela, Curatela, Interdição,...), Juizado Especial Cível, Juizado Especial da Fazenda Pública, Execução Fiscal e Execução Patrimonial (observado o item **e**);
g. As ações de natureza criminal abrangem, dentre outras: as de auditoria militar e de juizados especiais criminais;
h. As matérias atinentes as varas de família e infância e juventude são objeto de certidão específica;
i. A base de dados do sistema de gerenciamento processual (1ª INSTÂNCIA: eJUD, SIEP, PROJUDI, PJe-1G; 2ª INSTÂNCIA: Sistema de Segunda Instância, PJe-2G) contém o registro de todos os processos distribuídos no Judiciário do Estado do Espírito Santo, com exceção do SEEU;
j. A certidão negativa referente ao Sistema Eletrônico de Execução Unificado – SEEU deverá ser requerida ao Cartório do Ofício de Distribuidor da Comarca, conforme Ato Normativo Conjunto n°. 009/2021.

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1952

TRIBUNAL DE CONTAS DA UNIÃO

Consulta Consolidada de Pessoa Jurídica

Este relatório tem por objetivo apresentar os resultados consolidados de consultas eletrônicas realizadas diretamente nos bancos de dados dos respectivos cadastros. A responsabilidade pela veracidade do resultado da consulta é do Órgão gestor de cada cadastro consultado. A informação relativa à razão social da Pessoa Jurídica é extraída do Cadastro Nacional da Pessoa Jurídica, mantido pela Receita Federal do Brasil.

Consulta realizada em: 09/06/2025 14:31:10

Informações da Pessoa Jurídica:

Razão Social: **E.R. SOLUCOES INFORMATICA LTDA**
CNPJ: **05.778.325/0005-47**

Resultados da Consulta Eletrônica:

Órgão Gestor: **TCU**
Cadastro: **Licitantes Inidôneos**
Resultado da consulta: **Nada Consta**

Para acessar a certidão original no portal do órgão gestor, clique AQUI.

Órgão Gestor: **CNJ**
Cadastro: **CNIA - Cadastro Nacional de Condenações Cíveis por Ato de Improbidade Administrativa e Inelegibilidade**
Resultado da consulta: **Nada Consta**

Para acessar a certidão original no portal do órgão gestor, clique AQUI.

Órgão Gestor: **Portal da Transparência**
Cadastro: **Cadastro Nacional de Empresas Inidôneas e Suspensas**
Resultado da consulta: **Nada Consta**

Para acessar a certidão original no portal do órgão gestor, clique AQUI.

Órgão Gestor: **Portal da Transparência**
Cadastro: **CNEP - Cadastro Nacional de Empresas Punidas**
Resultado da consulta: **Nada Consta**

Para acessar a certidão original no portal do órgão gestor, clique AQUI.

Obs: A consulta consolidada de pessoa jurídica visa atender aos princípios de simplificação e racionalização de serviços públicos digitais. Fundamento legal: Lei nº 12.965, de 23 de abril de 2014, Lei nº 13.460, de 26 de junho de 2017, Lei nº 13.726, de 8 de outubro de 2018, Decreto nº 8.638 de 15, de janeiro de 2016.

CONTROLADORIA-GERAL DA UNIÃO

Certidão Negativa Correcional - Entes Privados (ePAD, CGU-PJ, CEIS, CNEP e CEPIM)

Consultado: **E.R. SOLUCOES INFORMATICA LTDA**

CPF/CNPJ: **05.778.325/0005-47**

Certifica-se que, em consulta aos sistemas ePAD e CGU-PJ e aos cadastros CEIS, CNEP e CEPIM, mantidos pela Corregedoria-Geral da União, **NÃO CONSTAM** registros de penalidades vigentes ou de procedimentos acusatórios em andamento, relativos ao CPF/CNPJ consultado.

Destaca-se que, nos termos da legislação vigente, os referidos cadastros consolidam informações prestadas pelos entes públicos, de todos os Poderes e esferas de governo.

Os Sistemas ePAD e CGU-PJ consolidam os dados sobre o andamento dos processos administrativos de responsabilização de entes privados no Poder Executivo Federal.

O Cadastro Nacional de Empresas Inidôneas e Suspensas (CEIS) apresenta a relação de empresas e pessoas físicas que sofreram sanções que implicaram a restrição de participar de licitações ou de celebrar contratos com a Administração Pública.

O Cadastro Nacional de Empresas Punidas (CNEP) apresenta a relação de empresas que sofreram quaisquer das punições previstas na Lei nº 12.846/2013 (Lei Anticorrupção).

O Cadastro de Entidades Privadas sem Fins Lucrativos Impedidas (CEPIM) apresenta a relação de entidades privadas sem fins lucrativos que estão impedidas de celebrar novos convênios, contratos de repasse ou termos de parceria com a Administração Pública Federal, em função de irregularidades não resolvidas em convênios, contratos de repasse ou termos de parceria firmados anteriormente.

Certidão emitida às 14:25:42 do dia 09/06/2025 , com validade até o dia 09/07/2025.

Link para consulta da verificação da certidão https://certidoes.cgu.gov.br/

Código de controle da certidão: 5sLQ0Ub1XKZiTRnc5DT9

Qualquer rasura ou emenda invalidará este documento.

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1954

GOVERNO DO ESTADO DO ESPÍRITO SANTO
CORPO DE BOMBEIROS MILITAR
DECLARAÇÃO DE DISPENSA
DO ALVARÁ DE LICENÇA DO CORPO DE BOMBEIROS

O Corpo de Bombeiros Militar do Estado do Espírito Santo declara que o imóvel descrito abaixo para a respectiva atividade empresarial está dispensado do Alvará de Licença do Corpo de Bombeiros, considerando as informações prestadas pelo empreendedor.

CNPJ: 05.778.325/0005-47 N.° 696693

Razão Social/Nome Fantasia

613820 - E.R SOLUÇÕES INFORMATICA LTDA / E.R SOLUÇÕES

Nome do Empreendedor

VALERIA NEVES DOS SANTOS

Finalidade	Protocolo	Projeto Aprovado
Renovação	27357/2022	-

Endereço

AVENIDA CEM, S/N, ,TERMINAL INTERMODAL DA SERRA, SERRA-ES- 29161384

Descrição da Ocupação

D-1 - REP. PUBLICA, LOCAL PRESTAÇÃO SERVIÇO PROF. E CONDUÇÃO DE NEGÓCIOS

ÁREA TOTAL CONSTRUÍDA.: 20,00.

Observação

1. Este alvará foi concedido em conformidade com as normas de Prevenção Contra Incêndio e Pânico Vigentes e declarações prestada pôr VALERIA NEVES DOS SANTOS, sendo as informações prestadas de sua inteira responsabilidade, sob pena de incorrer no cometimento de crime de Falsidade Ideológica, previsto no Art. 299, do CP, e no Art. 312, do CPM, e anulação deste documento, sem prejuízo de demais sanções advindas. 2. A edificação poderá ser vistoriada para fins de fiscalização pelo CBMES a qualquer tempo e, caso seja confirmada situação de exigência de medidas de segurança contra incêndio e pânico, a Corporação tomará as medidas previstas na legislação, que incluem notificação, multa, apreensão de materiais e equipamentos, cassação desta Declaração de Dispensa e interdição da edificação.

Data de Emissão	Data de Validade
04/04/2022	04/04/2027

É responsabilidade do proprietário e administrador da edificação a manutenção dos equipamentos de proteção contra incêndio e pânico.

N.º de Autenticação 17ff5717c

A aceitação desta Declaração está condicionada à verificação de sua autenticidade na internet no site http://siat.cb.es.gov.br

Este documento deverá ficar em local visível para fim de fiscalização.

Prefeitura Municipal de Indaiatuba

ATESTADO DE CAPACIDADE TÉCNICA

Atestamos para os devidos fins e efeitos, em vista das manifestações favoráveis exarada pela Secretaria Municipal de Esportes, no Processo Administrativo nº 4200/22, que a empresa **E.R SOLUÇÕES INFORMÁTICA LTDA**, estabelecida na Cidade de Ribeirão Preto/SP, na Av. Senador César Vergueiro, nº 1069, Jd. São Luiz, CEP 14.020-500, telefone (16) 3234-4433, E-mail:contato@ersolucoes.com.br, devidamente cadastrada no CNPJ nº 05.778.325/0001-13, nos forneceu os itens abaixo, conforme especificações e do prazo acordado, a saber:

Objeto: Aquisição de microcomputador, notebook, projetor e servidor tipo rack, para atender a demanda da Rede Municipal de Ensino, com prazo de entrega em até 60 (sessenta) dias.

Pregão Presencial nº 48/2021 Edital nº 121/2021.

Item	Quant.	Unid.	Descrição
001 P	400	Unidade	Microcomputador; All In One Com Processador De Ultima Geracao, 06 (Seis) Nucleos Frequencia (Clock Base) De 2,3ghz; Memoria De 08gb; Ssd 256gb; Monitor De 23"; Garantia De 60 Meses Microcomputador; All In One Com Processador De Ultima Geracao, 06 (Seis) Nucleos E Frequencia (Clock Base) De 2,3ghz , 12mb Cache Pontuacao Minima De 10.600 Pontos No Cpu Averege; Memoria Ram Sdram- Padrao Ddr4(2666 Mhz); De 08 Gb; Armazenamento 01 (Uma) Unidade De Estado Solido M2 De 256gb; Teclado Usb, Idioma Portugues/Brasil; Tela De 23"; Resolucao Grafica De 1920x1080 Ips; Mouse De Padrao Optico, Usb, C/Botao De Scroll, Resolucao Minima 1000 Dpi; Placa De Rede Padrao Gbe (Ethernet Lan Gigabit Ethernet); 10/100/1000 Mbps; Controladora De Rede Wireless; Gabinete Integrado Com O Monitor; Softwares Ms Windows 10 Professional; **Garantia 60 Meses** Atendimento On Site; Manuais, Drivers Conforme Descritivo Anexo. - **Marca: Lenovo - Modelo: Tc Tiny In One 23.8" Tio 24 Gen 4**
002 P	400	Unidade	Microcomputador; Mini Desktop Com Processador De Ultima Geracao, 06 (Seis) Nucleos E Frequencia (Clock Base) De 2,3ghz , 12mb Cache Pontuacao Minima De 10.600 Pontos No Cpu Averege; Memoria Ram Sdram- Padrao Ddr4(2666 Mhz); De 08 Gb; Aramazenamento 01 (Uma) Unidade De Estado Solido M2 De 256gb; Controladora De Video, Dual Port, Vga, Interface Pci E-M2; Teclado Usb, Idioma Portugues/Brasil; Mouse De Padrao Optico, Usb, C/Botao De Scroll, Resolucao Minima 1000 Dpi; Placa De Rede Padrao Gbe (Ethernet Lan Gigabit Ethernet); 10/100/1000 Mbps; Controladora De Rede Wireless; Gabinete Mini Desktop; Softwares Ms Windows 10 Professional E Ms Office Home And Business 2019; **Garantia 60 Meses** Atendimento On Site; Manuais, Drivers Conforme Descritivo Anexo. - **Marca: Lenovo - Modelo: Thinkcentre M70q Tiny**

Declaramos que até a presente data não existem ocorrências que desabonem o fornecimento e que todas as normas contratuais no âmbito técnico e administrativo foram atendidas.

AUTENTICAÇÃO
AUTENTICAÇÃO: Este cópia confere com o original, a mim apresentado. Dou fé.
Oscar Paes de Almeida Filho
OFICIAL Delegado
27 FEV. 2024
Oficial de Registro Civil das Pessoas Naturais e de Interdições e Tutelas do 1º Subdistrito da Sede de Ribeirão Preto - SP
Luiz Fernando Alcaide Silva - Escrevente
Gustavo Pereira dos Santos - Escrevente
Selos Pagos por verba Valor R$
12.467
AUTENTICAÇÃO
AU08624067006B2

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1956

Por ser expressão da verdade, firmo o presente atestado, composto em 02 (duas) laudas e em 02 (duas) vias, impresso somente no anverso.

Indaiatuba, 06 de abril de 2022.

LUIZ HENRIQUE FURLAN
Secretário Municipal de Administração

AUTENTICAÇÃO
AUTENTICAÇÃO: Este cópia confere com o original, a mim apresentado. Dou fé.
Oscar Paes de Almeida Filho
OFICIAL Delegado
27 FEV. 2024
Oficial de Registro Civil das Pessoas Naturais e de Interdições e Tutelas do 1º Subdistrito da Sede de Ribeirão Preto (SP)
Luiz Fernando Alcaço Silva - Escrev.
Gustavo Pereira dos Santos - Escrev.
Selos Pagos por verba Valor final R$
Válido somente com o selo de autenticidade
12.467
AUTENTICAÇÃO
AU0862AI0670093

LA.

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1957

PREFEITURA MUNICIPAL DE LENÇÓIS PAULISTA
Praça das Palmeiras, 55 – Fone (14) 3269-7000
CEP 18682-900 – Lençóis Paulista – SP
CNPJ: 46.200.846/0001-76
www.lencoispaulista.sp.gov.br

Atestado de Capacidade Técnica

Atestamos, para os devidos fins, que a empresa **ER SOLUÇÕES INFORMÁTICA LTDA**, portadora do CNPJ nº 05.778.325/0001-13, sediada na Av. Senador Cesar Vergueiro nº 1069 – Bairro Jardim São Luz, na cidade de Ribeirão Preto, estado de São Paulo forneceu equipamentos de informática à Prefeitura Municipal de Lençóis Paulista, CNPJ nº 46.200.846/0001-76, estabelecida a Praça das Palmeiras, nº 55, bairro Centro, na cidade de Lençóis Paulista, Estado de São Paulo.

Atestamos, ainda que os equipamentos, bem como os Serviços de Garantia foram cumpridos de acordo com o que foi solicitado no nosso pedido, dentro dos prazos previstos, através das notas fiscais nº 12452/12453/12456/12455/12457/12458/12454/12459/12460/12472/12482/12483/12488/12490/12492/12500/12501/12476/12498/12497/12484/12507/12485/12486/12493/12504/12506/12496/12503/12502/12494/12505/12495/12499/12487/12489/12491, não tendo até a presente data, nada que desabone sua idoneidade técnica e comercial.

Qtd	Descrição
545	TRAVA DE SEGURANÇA
545	LENOVO DESKTOP M75Q RYZEN 3 PRO 5350/8GB/SSD 256GB/WIFI/W10PRO
554	LENOVO MONITOR LCD THINKVISION 21.5 POL T22I-20
545	CABO HDMI
545	LENOVO TC SUPORTE CLAMP II NANO/TINY CLAMP II
532	ESTABILIZADOR APC 500W CUBIC MONO

Informamos ainda que os equipamentos, bem como, os serviços de garantia foram cumpridos de acordo com o que foi solicitado e os equipamentos entregues dentro dos prazos previstos, não tendo nada que desabone sua idoneidade técnica e comercialmente, até a presente data.

Lençóis Paulista, 12 de dezembro de 2022.

Atenciosamente.

Eder Paccola Santa Bárbara
Secretário de Tecnologia da Informação

AUTENTICAÇÃO
AUTENTICAÇÃO: Este selo confere com o original, a mim apresentado. Dou fé.
Oscar Paes de Almeida Filho
OFICIAL Delegado
27 FEV. 2023
Oficial de Registro Civil das Pessoas Naturais e de Interdições e Tutelas do 1º Subdistrito da Sede de Ribeirão Preto (SP)
Luiz Fernando Alexio Silva - Escrevente
Gustavo Pereira dos Santos - Escrevente
Selos Pagos por verba Patrocínio
AUTENTICAÇÃO 121467
AU0862AI0079084

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1958

ATESTADO DE CAPACIDADE TÉCNICA

O Serviço Nacional de Aprendizagem Comercial–Departamento Regional no Pará, localizado na Avenida Assis de Vasconcelos, 359 – 2º, 3º e 4º andares do Edifício Orlando Lobato–Bairro: Reduto–Belém/PA, CNPJ 03.646.961/0001-66, em resposta ao Ofício nº 329/2019, atesta para dos devidos fins de direito que a empresa **E. R. SOLUCOES INFORMATICA LTDA**, inscrita no **CNPJ 05.778.325/0001-13**, com sede na Avenida César Vergueiro, nº 1069 - Bairro: Jardim São Luiz – Ribeirão Preto/SP – CEP 14.020-500, forneceu para esta Instituição, **Equipamentos de Informática,** conforme relação abaixo, e nada tendo que desabone sua conduta comercial nos Pedidos de Compra nº 8716 e 8717/19, resultantes da **Concorrência Senac nº 012/2019.**

Item	Descrição	Marca/Modelo:	Quantidade
1	NOTEBOOK T480, QUE ACOMPANHA MALETA MENSAGEIRO e MOUSE WIRELLESS DANFE'S nº 11.101 e 11.102	LENOVO / THINKPAD; DANKA; THINKPAD	075
2	DESKTOP TC M920s, QUE ACOMPANHA MONITOR LCD 21,5; TECLADO USB SMARTCARD e MOUSE DANFE'S 11.111 e 11.112	LENOVO/ TC M920s; THINKVISION; SMARTCARD.	212

Documentos Anexos:

Pedidos de Compras MXM nº **8716** e **8717**

Notas Fiscais nº **11.101**, **11.102**, **11.111** e **11.112**.

AUTENTICAÇÃO
AUTENTICAÇÃO: Esta cópia confere com o original, a mim apresentado. Dou fé.
Oscar Paes de Almeida Filho
OFICIAL Delegado
27 FEV. 2024
Oficial de Registro Civil das Pessoas Naturais e de Interdições e Tutelas do 1º Subdistrito da Sede de Ribeirão Preto (SP)
Luiz Fernando Alexio Silva - Escrevente
Gustavo Pereira dos Santos - Escrevente
Selos Pagos por verba Valor art. 45
121405 AUTENTICAÇÃO

Belém/PA, 29 de janeiro de 2020.

JÚNIOR LUIZ DA SILVA AZEVEDO
Gerente de Suprimentos do SENAC/DR.PA
E-mail: junior.luiz@pa.senac.br
Fone: (91) 4009-6889

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1959

TRIBUNAL REGIONAL ELEITORAL DE ALAGOAS

ATESTADO DE CAPACIDADE TÉCNICA Nº 18/2023 - TRE-AL/PRE/DG/SAD/COMAP/SEIC

Em atenção ao requerimento formulado pela empresa E. R. Soluções Informática Ltda, inscrita no CNPJ n.º 05.778.325/0005-47, tendo em vista prestação de serviço constante do Processo Administrativo SEI nº 0004955-38.2021.6.02.8000 e atesto da unidade demandante acerca do cumprimento das respectivas obrigações contratuais, presente no Processo Administrativo SEI nº 0004214-27.2023.6.02.8000, ATESTA-SE que a empresa requerente forneceu e/ou prestou os serviços a seguir de forma satisfatória, sem qualquer registro de aplicação de sanção administrativa em desfavor da requerente, no que se refere à execução do contrato, consoante anotação da unidade competente.

E.R Soluções Informática Ltda CNPJ nº 05.778.325/0005-47			
Nota de Empenho	Nota Fiscal	Descrição do Produto	Quantidade
555/2022	Nº. 000.000.055 Série 001	Kit Web Conferência (Web Cam Usb Full HD 1080P, Caixas de Som 3W Usb P2, Headset H390). Marca: Logitech.	65
555/2022 605/2022 210/2023 221/2023	Nº. 000.000.063 Série 001 Nº. 000.000.079 Série 001 Nº. 000.000.156 Série 001 Nº. 000.000.157 Série 001	Microcomputador Tipo 1 com 02 Monitores. Marca: Lenovo. Modelo: ThinkCentre M75Q.	207 Desktops M75Q. 414 Monitores LCD 23.8 POL.

Outrossim, informamos que este documento foi assinado eletronicamente, com fundamento no art. 1º, III, b, da Lei nº 11.419/2006. Para informações adicionais, contatar a Seção de Instrução de Contratações, por meio dos telefones (82) 2122-7711, (82) 2122-7712 ou pelo endereço eletrônico seic@tre-al.jus.br.

Documento assinado eletronicamente por **ANA PAULA GOMES SILVA**, **Técnico Judiciário**, em 30/05/2023, às 13:22, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no site http://sei.tre-al.jus.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1302174** e o código CRC **618FE044**.

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1960

GOVERNO DE SERGIPE
SECRETARIA DE ESTADO DA EDUCAÇÃO
SERVIÇO DE MATERIAL E PATRIMÔNIO/SEMAP

ATESTADO DE CAPACIDADE TÉCNICA

Aracaju (Se), 21 de janeiro de 2015.

Declaramos para os devidos fins de prova junto aos Órgãos Públicos, que a Empresa **E.R.Soluções Informática Ltda,** sediada na **Rua Paschoal Bardaro Nº 355 Jardim Iraja, na cidade de Ribeirão Preto, estado de São Paulo**, inscrita no **CNPJ nº 05.778.325/0001-13,** forneceu os produtos, abaixo relacionados para esse Órgão.

Declaramos ainda que os compromissos assumidos foram cumpridos satisfatoriamente, não constando em nossos registros, até a presente data, nada que desabone sua conduta.

RELAÇÃO DOS MATERIAIS

ITEM	UNID	QTD.	DESCRIÇÃO DO MATERIAL	Nº. DO EMPENHO	NOTA FISCAL
01	Unid	1.000	- Microcomputador LenovoThinkCentre M83. - Monitor Lenovo LED 18,5". - Teclado Lenovo USB. - Mouse Lenovo USB.	5497/2014	8142 / 8146 /8227 / 8251 / 8329 / 8402 / 8313 / 8330

Atenciosamente,

José Heribaldo Alves Martucelli
Diretor do SEMAP/DAF/SEED

AUTENTICADO
Cartório Papa de Almeida Filho
OFICIAL Delegado
12 SET. 2023
Oficial de Registro Civil das Pessoas Naturais e de Interdições e Tutelas do 1º Subdistrito da Sede de Ribeirão Preto (SP)
Fernando Alexio Silveira Stiev
Fabio de Freitas Alves Starab-Escrev.
121467 AUTENTICADO AU00682A0622312

Rua Gutemberg Chagas , 169, Bairro D.I.A Aracaju (SE)
TEL: (79) 3194-3325? FAX: (79) 3194-3327
www.Seed.se.gov.br

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o original, a que me reportarei. Dou
Oscar Fares de Almeida Neto
OFICIAL Delegado
12 SET. 2023
Oficial de Registro Civil das Pessoas Naturais
e de Interdições e Tutelas do 1º Subdistrito
da Sede de Ribeirão Preto (SP)
Luiz Fernando Afonso Silva
Sel. Fabio de Freitas Alves Silveira
Selo Pagos por verba Vinculada
121467
AUTENTICADO
AU0002AI0622314

PODER JUDICIÁRIO
TRIBUNAL REGIONAL ELEITORAL DO MARANHÃO
DIRETORIA-GERAL

ATESTADO DE CAPACIDADE TÉCNICA

Atestamos para os devidos fins que a Empresa **E.R. Soluções Informática Ltda**, portadora do CNPJ nº 05.778.325/0001-13, sediada na Rua Paschoal Bardaro n.º 355, Jardim Iraja, na cidade de Ribeirão Preto, estado de São Paulo, forneceu a este Tribunal, os materiais abaixo especificados:

400 unidades de MONITOR 18,5" LED LS1921 da marca LENOVO;

400 unidades de MICROCOMPUTADOR M92p da marca LENOVO;

400 unidades de Mouse da marca LENOVO; e

400 unidades de Teclado Português com Smartcard da marca LENOVO.

Atestamos ainda, que os materiais foram entregues de acordo com a Nota de Empenho 2012NE1938, por meio dos DANFEs n.ºs 5570 e 5582, emitidos respectivamente em 21/3/2013 e 25/3/2013, não havendo até a presente data qualquer fato que desabone a sua idoneidade técnica e comercial.

São Luís, 13 de novembro de 2014.

SAMIRA TERESA DUAILIBE MURAD
DIRETORA-GERAL SUBSTITUTA

Samira Murad
Diretora-Geral Substituta

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1962

INSTITUTO ÁGUA E TERRA

PARANÁ
GOVERNO DO ESTADO
SECRETARIA DO DESENVOLVIMENTO SUSTENTÁVEL E DO TURISMO

ATESTADO DE CAPACIDADE TÉCNICA

Atestamos para fins de comprovação de Capacidade Técnica, que a empresa ***E.R Soluções***, inscrita no CNPJ nº 05.778.325/0001-13 com sede na Avenida Senador Cesar Vergueiro – Ribeirão Preto/São Paulo, foi contratada pelo **Instituto Água E Terra, inscrito no CNPJ sob nº 68.596.162/0001-78,** para fornecimento **de** Estação de Tratamento Desktop Aquisição de equipamentos estações de trabalho tipo WORKSTATION com 32,0 GB de memória RAM - HD, SSD de 240 GB + HD 2 x 01 TB Monitor de 27 sistema Operacional Microsoft Windows 10, incluindo serviços de garantia e suporte técnico no site por 60 meses

Os equipamentos foram entregue e aceitos de acordo com o Contrato, cumprindo plenamente o cronograma e os prazos estabelecidos, sendo que o desempenho foi por nós considerado de boa qualidade.

Pregão Eletrônico nº 08/2019 – Lote nº 02

Contrato nº 21/2020

Quantidade: 45 unidades

Valor Global: R$ 776.499,75

Curitiba, 02 de Junho de 2020

Dahir Elias Fadel Junior
Gerente Administrativo
Instituto Água e Terra

AUTENTICAÇÃO
AUTENTICAÇÃO: Esta cópia confere com o original, a mim apresentado. Dou fé.
Oscar Paes de Almeida Filho
OFICIAL Delegado
03 JUN. 2020
Oficial de Registro Civil das Pessoas Naturais e de Interdições e Tutelas de 1º Subdistrito da Sede de Ribeirão Preto (SP)
Luiz Fernando Alexio Silva - Est.

Selos Pagos por verba Viver sem PIS

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1963

ATESTADO DE CAPACIDADE TÉCNICA

Atestamos para os devidos fins que a Empresa **E. R. Soluções Informática Ltda**, portadora do CNPJ nº 05.778.325/0001-13, sediada na Rua Paschoal Bardaro Nº 355 Jardim Iraja, na cidade de Ribeirão Preto, estado de São Paulo, forneceu a este órgão, os materiais abaixo discriminados:

- 500 unid Notebook LenovoThinkpad Edge E430
- 500 unid Maleta para Notebook.

Atestamos, ainda que os materiais foram entregues de acordo como solicitado em nossa nota de empenho, dentro dos prazos previstos, através das notas fiscais nº s006262, não tendo até a presente data, nada que desabone sua idoneidade técnica e comercial.

Por ser a expressão da verdade, firmamos o presente.

Jaboatão dos Guararapes, 29 de Janeiro de 2014.

John Kennedy Jerônimo dos Santos
Gerente de Apoio Logístico

AUTENTICAÇÃO
AUTENTICAÇÃO: Esta cópia confere com o original, a mim apresentado. Dou fé.
Oscar Paes de Almeida Filho
OFICIAL Delegado
03 JUN. 2020
Oficial de Registro Civil das Pessoas Naturais e de Interdições e Tutelas do 1º Subdistrito da Sede de Ribeirão Preto (SP)
Selo: Fernando Afonso Silva - Escrevente
Selo: 121407 AUTENTICAÇÃO AU086ZAIO104780

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1964

ATESTADO DE CAPACIDADE TÉCNICA

O SENAC/TO Serviço Nacional de Aprendizagem Comercial – Administração Regional no Estado do Tocantins - portador do CNPJ 03.711.932/0001-30, atesta para os devidos fins que a Empresa **E.R.SOLUCÕES INFORMATICA LTDA**, portadora do CNPJ nº 05.778.325/0001-13, sediada na Avenida Senador Cesar Vergueiro Nº 1069 – Jardim São Luis, na cidade de Ribeirão Preto, estado de São Paulo, forneceu a esse órgão os seguintes equipamentos:

- **125 unidades LENOVO DESKTOP TC M720s;**
- **125 unidades LENOVO MONITOR Lcd 21,5 THINK VISION;**
- **125 unidades LENOVO TECLADO USB e**
- **125 unidades LENOVO MOUSE USB.**

Atestamos, ainda que as mercadorias foram entregues de acordo com o que foi solicitado no Contrato Senac/TO/DR Nº 07/2019, através da nota fiscal nº 11.143 com garantia de 60 Meses On-Site do fabricante, dentro dos prazos previstos, não tendo até a presente data, nada que desabone sua idoneidade técnica e comercial.

Por ser a expressão da verdade, firmamos o presente.

Palmas/TO, 25 de novembro de 2019.

Antônio Xavier de Barros Júnior
Coordenador de Compras e Licitações

Antônio Xavier de Barros Junior
Coord. de Compras e Licitações
SENAC-TO

AUTENTICAÇÃO
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Oscar Paes de Almeida Filho
OFICIAL Delegado
17 SET. 2020
Oficial de Registro Civil das Pessoas Naturais e de Interdições e Tutelas da Comarca da Sede/de Ribeirão Preto/SP
Elisabeth Paes de Almeida Ribeiro - Oficiala
Luiz Fernando Aleixo Silva - Escrevente
Selos Pagos por verba Valor sujeito
AUTENTICAÇÃO
AU00662AI0168745

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1965

ATESTADO DE CAPACIDADE TÉCNICA

O Serviço Nacional de Aprendizagem Comercial–Departamento Regional no Pará, localizado na Avenida Assis de Vasconcelos, 359 – 2º, 3º e 4º andares do Edifício Orlando Lobato–Bairro: Reduto–Belém/PA, CNPJ 03.646.961/0001-66, em resposta ao Ofício nº 329/2019, atesta para dos devidos fins de direito que a empresa **E. R. SOLUCOES INFORMATICA LTDA**, inscrita no **CNPJ 05.778.325/0001-13**, com sede na Avenida César Vergueiro, nº 1069 - Bairro: Jardim São Luiz – Ribeirão Preto/SP – CEP 14.020-500, forneceu para esta Instituição, **Equipamentos de Informática,** conforme relação abaixo, e nada tendo que desabone sua conduta comercial nos Pedidos de Compra nº 8716 e 8717/19, resultantes da **Concorrência Senac nº 012/2019**.

Item	Descrição	Marca/Modelo:	Quantidade
1	NOTEBOOK T480, QUE ACOMPANHA MALETA MENSAGEIRO e MOUSE WIRELLESS DANFE'S nº 11.101 e 11.102	LENOVO / THINKPAD; DANKA; THINKPAD.	075
2	DESKTOP TC M920s, QUE ACOMPANHA MONITOR LCD 21,5; TECLADO USB SMARTCARD e MOUSE DANFE'S 11.111 e 11.112	LENOVO/ TC M920s; THINKVISION; SMARTCARD.	212

Documentos Anexos:

Pedidos de Compras **MXM nº 8716 e 8717**

Notas Fiscais nº **11.101**, **11.102**, **11.111** e **11.112**.

Belém/PA, 29 de janeiro de 2020.

JÚNIOR LUIZ DA SILVA AZEVEDO
Gerente de Suprimentos do SENAC/DR.PA
E-mail: junior.luiz@pa.senac.br
Fone: (91) 4009-6889

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Oscar Paes de Almeida Filho
OFICIAL Delegado
20 AGO. 2020
Oficial de Registro Civil das Pessoas Naturais e de Interdições e Tutelas da 1ª Subdistrito da Sede de Ribeirão Preto (SP)
Elisabeth Paes de Almeida Ribeiro-Oficial Substituto
Luiz Fernando Aleixo Silva-Escrev. Autorizado
Selos Pagos por verba/Lei Estadual nº 11.331/02 - Valido somente com a apresentação do original
AUTENTICADO 121487 AU00624A0138074

Habilitação ER SOLUÇÕES INFOR. LTDA. CNPJ 05.778.325/0005-47 (1676241) SEI 2025.001317 / pg. 1966

TRIBUNAL DE CONTAS DA UNIÃO

Consulta Consolidada de Pessoa Jurídica

Este relatório tem por objetivo apresentar os resultados consolidados de consultas eletrônicas realizadas diretamente nos bancos de dados dos respectivos cadastros. A responsabilidade pela veracidade do resultado da consulta é do Órgão gestor de cada cadastro consultado. A informação relativa à razão social da Pessoa Jurídica é extraída do Cadastro Nacional da Pessoa Jurídica, mantido pela Receita Federal do Brasil.

Consulta realizada em: 14/07/2025 11:25:19

Informações da Pessoa Jurídica:

Razão Social: **E.R. SOLUCOES INFORMATICA LTDA**
CNPJ: **05.778.325/0005-47**

Resultados da Consulta Eletrônica:

Órgão Gestor: **TCU**
Cadastro: **Licitantes Inidôneos**
Resultado da consulta: **Nada Consta**

Para acessar a certidão original no portal do órgão gestor, clique AQUI.

Órgão Gestor: **CNJ**
Cadastro: **CNIA - Cadastro Nacional de Condenações Cíveis por Ato de Improbidade Administrativa e Inelegibilidade**
Resultado da consulta: **Nada Consta**

Para acessar a certidão original no portal do órgão gestor, clique AQUI.

Órgão Gestor: **Portal da Transparência**
Cadastro: **Cadastro Nacional de Empresas Inidôneas e Suspensas**
Resultado da consulta: **Nada Consta**

Para acessar a certidão original no portal do órgão gestor, clique AQUI.

Órgão Gestor: **Portal da Transparência**
Cadastro: **CNEP - Cadastro Nacional de Empresas Punidas**
Resultado da consulta: **Nada Consta**

Para acessar a certidão original no portal do órgão gestor, clique AQUI.

Obs: A consulta consolidada de pessoa jurídica visa atender aos princípios de simplificação e racionalização de serviços públicos digitais. Fundamento legal: Lei nº 12.965, de 23 de abril de 2014, Lei nº 13.460, de 26 de junho de 2017, Lei nº 13.726, de 8 de outubro de 2018, Decreto nº 8.638 de 15, de janeiro de 2016.

PROCURADORIA GERAL DE JUSTIÇA

TERMO DE JULGAMENTO

UASG 925849 - PROCURADORIA GERAL DE JUSTIÇA - AM

PREGÃO 94010/2025

Fundamentação legal:	Lei 14.133/2021	Característica:	SRP - Registro de Preço
Critério de julgamento:	Menor Preço / Maior Desconto	Modo de disputa:	Aberto
Compra emergencial:	Não	UF da UASG:	AM
Objeto da compra:	Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 mes		
Entrega de propostas:	De 12/06/2025 às 08:00 até 30/06/2025 às 10:00		
Abertura da sessão pública:	Dia 30/06/2025 às 10:00 (horário de Brasília)		

Mensagens do chat da compra

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 10:00:02	A sessão pública está aberta. Até 1 item poderá estar em disputa simultaneamente e o período de abertura para disputa será entre 08:00 e 18:00. Haverá aviso prévio de abertura dos itens de 10 minutos. Mantenham-se conectados.
Sistema	30/06/2025 às 10:15:46	Prezados Licitantes, bom dia.
Sistema	30/06/2025 às 10:15:50	Sejam bem vindos à sessão pública do Pregão Eletrônico 94.010/2025 que tem por objeto o registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses.
Sistema	30/06/2025 às 10:15:59	Prezados, em breve será aberta a fase de disputa. Solicito atenção e comprometimento aos valores apresentados nos lances, visto que vinculam a empresa à manutenção do preço por um período de 12 meses, incumbindo a ela, portanto, a responsabilidade pela correta precificação da sua oferta.
Sistema	30/06/2025 às 10:16:10	Solicito atenção ao subitem 6.10 do Instrumento Convocatório no intuito do adequado acompanhamento do procedimento por parte de todos os interessados.
Sistema	30/06/2025 às 10:16:20	Boa disputa.
Sistema	30/06/2025 às 14:06:48	A etapa de julgamento de propostas foi iniciada. Para acompanhá-la acesse a opção "Seleção de fornecedores" na linha do tempo.
Sistema	30/06/2025 às 14:24:10	Prezados, encerrada a fase de disputa, passaremos à análise das ofertas apresentadas pelas licitantes mais bem colocadas na ordem de classificação.
Sistema	30/06/2025 às 14:26:29	No entanto, cabe tratar com os primeiros colocados para o Item 2. Solicito atenção aos interessados.
Sistema	30/06/2025 às 14:58:29	Senhores, considerando a desclassificação da proposta da licitante TROGON COMERCIO DE INFORMATICA LTDA SP para o item 2, passaremos a tratar com os licitantes seguintes. Solicito atenção aos interessados.
Sistema	30/06/2025 às 15:24:14	Prezados, considerando que o licitante HOUSE LTDA. não se manifestou, passaremos a tratativa com a licitante 42.816.024 LEONARDO CATIVO SOUSA. Solicito atenção à interessada.

Relatório PNCP - Julgamento/Habilitação ITEM 1 (1676291) SEI 2025.001317 / pg. 1968

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 15:36:05	Senhor licitante, solicito manifestação.
Sistema	30/06/2025 às 15:52:50	Senhores, em breve estarei convocando as licitantes mais bem colocadas na ordem de classificação, para envio de nova proposta ajustada ao valor dos lances para cada item.
Sistema	30/06/2025 às 15:53:19	O prazo para envio é de 2 (duas) horas contadas a partir da convocação no sistema.
Sistema	30/06/2025 às 15:57:21	Com fundamento na letra "k" do subitem 9.2 do Edital, deverá ser enviada junto à proposta de preços "documentação técnica (manuais, catálogos ou prospectos), com as características detalhadas (marca, modelo, cor, tipo de material e medidas) e imagens ilustrativas dos produtos propostos, que possibilitem a completa averiguação de conformidade com as especificações, visando facilitar a avaliação a ser realizada por técnicos deste Órgão."
Sistema	30/06/2025 às 15:59:25	Poderá ser apresentado na proposta ou junto dela, links do fabricante/fornecedor, desde que atenda, no mínimo, as exigências do dispositivo mencionado.
Sistema	30/06/2025 às 16:01:38	Em breve as licitantes mais bem classificadas serão convocadas no sistema. Solicito atenção às interessadas.
Sistema	30/06/2025 às 16:04:57	Senhores, considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retornando amanhã (01/07/2025), a partir das 10h (horário Brasília) para as convocações.
Sistema	30/06/2025 às 16:05:13	Aguardo a todos no dia e hora aqui agendados.
Sistema	30/06/2025 às 16:05:28	Obrigado pela atenção e uma excelente tarde a todos.
Sistema	01/07/2025 às 10:05:27	Prezados Licitantes, bom dia.
Sistema	01/07/2025 às 10:16:19	Retornamos aos trabalhos deste certame, considerando a convocação dos licitantes mais bem classificados na ordem dos lances para envio de propostas.
Sistema	01/07/2025 às 10:27:59	Senhores, informo que o Quadro-Resumo do Processo de Compra Nª 195.2025.SCOMS.1609045.2025.001317 com os valores estimados para cada item já se encontra disponível no Portal do MPAM, no seguinte endereço:
Sistema	01/07/2025 às 10:28:11	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	01/07/2025 às 10:29:55	Senhores, em breve estarei convocando as licitantes para envio das proposta de preços ajustadas aos lances. Solicito atenção.
Sistema	01/07/2025 às 10:54:59	Senhores, considerando a solicitação de desclassificação de proposta para o Item 4 por parte do licitante MR COMERCIO DE PECAS E ACESSORIOS LTDA., será convocado para envio de proposta o próximo licitante na ordem de classificação. Solicito atenção.
Sistema	01/07/2025 às 13:39:54	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 13:43:26	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 2 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 14:32:39	Na sequência, considerando a desclassificação das licitantes 42.816.024 LEONARDO CATIVO SOUSA (Item 2) e HOUSE LTDA. (Item 4), serão convocados novos licitantes para envio de proposta de preços. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:00:55	Prezados, em breve serão convocados licitantes para envio de propostas para os itens 2 e 4. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:08:04	Prezados, será promovido um desempate para o Item 4 entre os licitantes A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA. e 42.816.024 LEONARDO CATIVO SOUSA. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:15:30	Realizado o desempate, passaremos à convocação de novo licitante para o Item 4. Solicito atenção.

Relatório PNCP - Julgamento/Habilitação ITEM 1 (1676291) SEI 2025.001317 / pg. 1969

Responsável	Data/Hora	Mensagem
Sistema	01/07/2025 às 15:17:15	Será convocado também novo licitante para o Item 2. Solicito atenção.
Sistema	01/07/2025 às 15:18:12	Estando os licitantes devidamente convocados, fico no aguardo dos solicitados documentos.
Sistema	01/07/2025 às 18:31:24	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 18:32:20	Considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retomando-os amanhã (02/07/2025), a partir das 10h (horário de Brasília).
Sistema	01/07/2025 às 18:32:44	Aguardo a todos no dia e hora aqui agendados.
Sistema	01/07/2025 às 18:33:01	Agradeço a atenção dispensada e desejo a todos um excelente fim de tarde.
Sistema	02/07/2025 às 10:02:34	Prezados, bom dia.
Sistema	02/07/2025 às 10:08:35	Senhores, informo que em breve será convocado novo licitante para envio de proposta para o item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 12:37:06	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	02/07/2025 às 12:38:31	Na sequência, será convocado novo licitante para envio de proposta para o Item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 14:52:01	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	02/07/2025 às 14:52:14	Na sequência, será convocado novo licitante para envio de proposta para o Item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 16:50:23	Prezados, considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retornando amanhã (03/07/2025), a partir das 10h (horário Brasília).
Sistema	02/07/2025 às 16:50:49	Aguardo a todos no dia e hora aqui agendados.
Sistema	02/07/2025 às 16:51:05	Finalizo desejando a todos uma excelente tarde.
Sistema	03/07/2025 às 10:11:15	Prezados Licitantes, bom dia.
Sistema	03/07/2025 às 10:11:53	Retornamos aos trabalhos deste certame considerando a convocação de novo licitante para envio de proposta para o Item 4.
Sistema	03/07/2025 às 10:12:35	Em breve estarei convocando novo licitante para envio de proposta ajusta ao lance para o Item 4. Solicito atenção ao interessado.
Sistema	03/07/2025 às 10:24:21	Prezados, em breve estarei convocando novo licitante para envio de proposta ajusta ao lance para o Item 4. Solicito atenção ao interessado.
Sistema	03/07/2025 às 10:38:26	Estando o Licitante devidamente convocado, fico no aguardo dos solicitados documentos. Obrigado!
Sistema	03/07/2025 às 11:46:29	Senhores Licitantes, recebidos os documentos referente ao Item 4, informo que os mesmos serão encaminhados à análise por parte do setor técnico deste Órgão Ministerial.
Sistema	03/07/2025 às 11:47:11	Senhores, considerando a proposta apresentada pela licitante E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 para o item 1, informo o seguinte:
Sistema	03/07/2025 às 11:48:53	Submetida a proposta e os documentos técnicos enviados pela licitante classificada, o setor técnico DTIC, através do Parecer Nª 15.2025.SIET.1661793.2025.001317, manifestou-se "pela aceitabilidade do produto ofertado".
Sistema	03/07/2025 às 11:50:25	Informo que o referido Parecer encontra-se disponível no Portal do MPAM, acessível a todos os interessados, no seguinte endereço: https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis

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Responsável	Data/Hora	Mensagem
Sistema	03/07/2025 às 11:53:21	Senhores, considerando a manifestação técnica expressa no Parecer Nª 15.2025.SIET e o atendimento a todas as exigências formais do Edital referente à proposta de preços, este Pregoeiro decide pela ACEITAÇÃO da oferta do licitante E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 para o item 1.
Sistema	07/07/2025 às 15:57:44	Prezados Licitantes, boa tarde.
Sistema	07/07/2025 às 15:58:26	Informo que retornaremos aos trabalhos deste certame amanhã (08/07/2025), a partir das 14h (horário de Brasília).
Sistema	07/07/2025 às 15:58:41	Aguardo a todos no dia e hora aqui agendados. Obrigado.
Sistema	08/07/2025 às 14:11:23	Prezados licitantes, boa tarde.
Sistema	08/07/2025 às 14:14:38	Prezados, retornamos aos trabalhos deste certame considerando as propostas dos seguintes licitantes:
Sistema	08/07/2025 às 14:16:14	a) TORINO INFORMÁTICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, para o Item 2; b) POSITIVO TECNOLOGIA S/A (Filial), CNPJ (MF) n.ª 81.243.735/0009-03, para o Item 3; e c) E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, para o Item 4
Sistema	08/07/2025 às 14:24:07	Encaminhadas as ofertas ao setor técnico para análise, o referido setor manifestou-se da seguinte forma:
Sistema	08/07/2025 às 14:26:15	Parecer Nª 16.2025.SIET.1661858.2025.001317 - TORINO INFORMÁTICA LTDA., ITEM 2 - Pela exposição de motivos, depreende-se que: a) O teclado não atende; b) O requisito de leitor biométrico no mouse e teclado não foi atendida; entre outros.
Sistema	08/07/2025 às 14:27:56	Parecer Nª 18.2025.SIET.1664620.2025.001317 - POSITIVO TECNOLOGIA S/A (FILIAL) - ITEM 3 - Recomenda-se, portanto, caso a licitante seja instada a reapresentar a proposta técnica, que ela esteja em conformidade com o disposto no subitem 18.14, informando marca, modelo e documentação comprobatória específica de todos os componentes, de modo a permitir a verificação inequívoca da compatibilidade do produto ofertado com o objeto licitado.
Sistema	08/07/2025 às 14:28:43	Parecer Nª 19.2025.SIET.1665305.2025.001317 - ER SOLUÇÕES INFORMÁTICA LTDA. - ITEM 4 - O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica OPINA pela aceitabilidade do produto ofertado.
Sistema	08/07/2025 às 14:30:03	Assim, com fundamento na análise dos Pareceres aqui apresentados, Este Pregoeiro decide:
Sistema	08/07/2025 às 14:32:07	a) Recusar a proposta de preços do licitante TORINO INFORMÁTICA LTDA., para o ITEM 2, em conformidade ao Parecer Nª 16.2025.SIET.1661858.2025.001317 e Item 10.3.2 do Edital do certame.
Sistema	08/07/2025 às 14:35:55	b) Diligenciar o licitante POSITIVO TECNOLOGIA S/A (FILIAL) - para que apresente nos documentos de proposta enviados para o Item 3, o pleno atendimento aos requisitos técnicos exigidos no Termo de Referência Nª 2.2025.DTIC.1525128.2025.001317, Anexo I ao Edital do certame.
Sistema	08/07/2025 às 14:37:36	Para tal, será aberto o prazo de 2 (duas horas para envio de documento complementar em providência à solicitação constante do Parecer Nª 18.2025.SIET.1664620.2025.001317.
Sistema	08/07/2025 às 14:39:05	c) Aceitar a proposta de preços apresentada pelo licitante ER SOLUÇÕES INFORMÁTICA LTDA., para o ITEM 4, em conformidade ao Parecer Nª 19.2025.SIET.1665305.2025.001317 e ao Item 10 do Edital do certame.
Sistema	08/07/2025 às 14:40:00	Prezados, informo que os pareceres mencionados encontram-se disponíveis e acessíveis a todos os interessados no Portal do MPAM no seguinte endereço:
Sistema	08/07/2025 às 14:40:33	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	08/07/2025 às 14:54:06	Prezado licitante POSITIVO TECNOLOGIA S/A (FILIAL), em breve V. Sa. será convocado para providências conforme apresentado nesse chat e no Parecer Nª 18.2025.SIET.1664620.2025.001317.
Sistema	08/07/2025 às 14:54:24	Solicito atenção.

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Responsável	Data/Hora	Mensagem
Sistema	08/07/2025 às 14:56:10	Prezados, considerando a desclassificação da proposta do licitante TORINO INFORMÁTICA LTDA., para o ITEM 2, informo que em breve será convocado novo licitante para envio de proposta para o Item. Solicito atenção aos interessados.
Sistema	08/07/2025 às 15:00:40	Prezados, tomadas as devidas providências e convocados os licitantes, fico no aguardo dos solicitados documentos.
Sistema	08/07/2025 às 17:25:18	Senhores, recebidos os documentos, informo que os mesmos serão encaminhados ao setor técnico para análise.
Sistema	08/07/2025 às 17:26:29	Assim, encerraremos os trabalhos por hoje, retornando em data posterior devidamente informada através desse chat, em tempo hábil ao acompanhamento de todos os interessados.
Sistema	08/07/2025 às 17:26:39	Agradeço a atenção dispensada.
Sistema	08/07/2025 às 17:26:52	Finalizo desejando uma excelente tarde a todos.
Sistema	10/07/2025 às 11:36:20	Prezados, bom dia.
Sistema	10/07/2025 às 11:36:57	Informo que retornaremos aos trabalhos deste certame amanhã (11/07/2025), a partir das 10h (horário Brasília).
Sistema	10/07/2025 às 11:37:33	Aguardo a todos no dia e hora aqui agendados.
Sistema	11/07/2025 às 10:00:40	Prezados Licitantes, bom dia.
Sistema	11/07/2025 às 10:21:39	Retornamos aos trabalhos deste certame considerando as propostas apresentadas pelos licitantes POSITIVO TECNOLOGIA S/A (Filial), para o Item 3 e E.R. SOLUCOES INFORMATICA LTDA., para o Item 2.
Sistema	11/07/2025 às 10:39:45	Senhores, recebidos os documentos de propostas e encaminhados ao setor técnico competente para análise, obtivemos os seguintes resultados:
Sistema	11/07/2025 às 10:40:56	a) Parecer Nª 21.2025.SIET.1668662.2025.001317 - ER SOLUÇÕES INFORMÁTICA LTDA., para o ITEM 2 - Conclusão - O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica OPINA pela aceitabilidade do produto ofertado.
Sistema	11/07/2025 às 10:43:00	b) Parecer Nª 22.2025.SIET.1668772.2025.001317 - POSITIVO TECNOLOGIA S/A (FILIAL), para o Item 3 - Conclusão - Após análise da documentação apresentada pela licitante [...] foram observados alguns pontos inconclusivos, marcados como . Os pontos marcados com , são exigências que não foi possível comprovar sua aderência na segunda oportunidade de envio de documentação técnica.
Sistema	11/07/2025 às 10:44:33	Senhores, informo que o Parecer Nª 21.2025.SIET.1668662.2025.001317 e o Parecer Nª 22.2025.SIET.1668772.2025.001317 encontram-se disponíveis no Portal do MPAM, no seguinte
Sistema	11/07/2025 às 10:44:40	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	11/07/2025 às 10:46:44	Senhores, considerando os resultados das análises apresentados nos pareceres, informo o seguinte:
Sistema	11/07/2025 às 11:18:42	a) para saneamento das pendências apontadas nos pareceres, as licitantes serão convocadas para envio de documentos que comprovem o atendimento às exigências apontadas.
Sistema	11/07/2025 às 11:19:44	Assim, em breve convocarei as licitantes no sistema. Solicito atenção aos interessados.
Sistema	11/07/2025 às 11:25:58	Estando os licitantes devidamente convocados, fico no aguardo dos solicitados documentos.
Sistema	11/07/2025 às 14:23:53	Senhores, boa tarde.
Sistema	11/07/2025 às 14:25:25	Considerando o envio dos documentos solicitados referentes ao Item 2 por parte do Licitante E.R. SOLUCOES INFORMATICA LTDA. e sendo os mesmos suficientes para o pleno atendimento da solicitação, informo que:
Sistema	11/07/2025 às 14:27:08	Este Pregoeiro decide pela Aceitação da proposta de preços do licitante E.R. SOLUCOES INFORMATICA LTDA. para o Item 2, pelo pleno atendimento às exigências técnicas e formais do Edital, referentes à proposta e em conformidade ao Parecer Nª 21.2025.SIET.1668662.2025.001317.

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Responsável	Data/Hora	Mensagem
Sistema	11/07/2025 às 16:52:49	Prezados, recebidos os documentos referente ao Item 3, informo que os mesmos serão encaminhados para análise do setor técnico competente.
Sistema	11/07/2025 às 16:54:57	Considerando a hora avançada, encerraremos os trabalhos por hoje, retornando na segunda-feira (14/07/2025), a partir das 11h (horário de Brasília), para continuação dos trabalhos.
Sistema	11/07/2025 às 16:55:26	Aguardo a todos no dia e hora aqui agendados.
Sistema	11/07/2025 às 16:55:54	Agradeço a atenção dispensada. Finalizo desejando uma boa tarde e um excelente fim de semana a todos.
Sistema	14/07/2025 às 11:15:08	Prezados Licitantes, bom dia.
Sistema	14/07/2025 às 11:45:13	Senhores, considerando os documentos de Habilitação apresentados pelo Licitante E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, informo que os mesmos atendem a todas as exigências estabelecidas no instrumento convocatório.
Sistema	14/07/2025 às 11:45:42	Nesse sentido, este Pregoeiro decide pela HABILITAÇÃO do licitante E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47.
Sistema	14/07/2025 às 12:02:53	Senhores, em breve estarei habilitando a licitante no próprio sistema. Solicito atenção.

Eventos da compra

Data/Hora	Descrição
30/06/2025 às 10:00:02	Abertura da sessão pública
30/06/2025 às 14:06:48	Início da etapa de julgamento de propostas

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Item 1 - Microcomputador all in one

Microcomputador All In One Tela: Até 21,5POL, Interatividade Da Tela: Sensível Ao Toque, Memória Ram: Até 4GB, Núcleos Por Processador: Até 4, Armazenamento Hdd: Até 500GB, Armazenamento Ssd: Sem Disco Ssd, Fonte Alimentação: Bivolt Automática, Sistema Operacional: Proprietário, Garantia On Site: 36MESES

Quantidade:	1000	Valor estimado:	R$ 11.411,8500 (unitário)
Unidade de fornecimento:	Unidade		R$ 11.411.850,0000 (total)
Intervalo mínimo entre lances:	R$ 10,0000	Situação:	Aberto para recursos
Critério de julgamento:	Menor Preço		
Tratamento Diferenciado ME/EPP:	Sem benefícios ME/EPP (Art. 4ª, lei 14.133/2021)		

Aceito e Habilitado por CPF ***.231.***-*9 - MAURICIO ARAUJO MEDEIROS para E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, melhor lance: R$ 9.880,0000 (unitário) / R$ 9.880.000,0000 (total)

Propostas do Item 1

Benefício Me/Epp: Conforme Art. 3ª da Lei Complementar nª 123, de 14 de dezembro de 2006
Programa de integridade: Conforme termos previsos na Lei nª 14.133/2021 e no Decreto nª 12.304/2024

Fornecedor	Valor ofertado	Situação
42.816.024/0001-63 - 42.816.024 LEONARDO CATIVO SOUSA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: AM	R$ 10.000,0000 (unitário) R$ 10.000.000,0000 (total)	-

Marca/Fabricante:	Conf TR				
Modelo/versão:	Conf TR				
Valor proposta:	R$ 10.000,0000 (unitário) R$ 10.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	1000

Fornecedor	Valor ofertado	Situação
51.750.663/0001-64 - 51.750.663 THIERREZ MATHEUS ALVES SALES Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: DF	R$ 80.000,0000 (unitário) R$ 80.000.000,0000 (total)	-

Marca/Fabricante:	Microcomputador all in one				
Modelo/versão:	Microcomputador all in one				
Valor proposta:	R$ 80.000,0000 (unitário) R$ 80.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	1000

Fornecedor	Valor ofertado	Situação
01.319.640/0001-21 - AJL INDUSTRIA E COMERCIO LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: AM	R$ 17.070,0000 (unitário) R$ 17.070.000,0000 (total)	-

Marca/Fabricante:	LENOVO				
Modelo/versão:	THINKCENTRE M70Q GEN 5				
Valor proposta:	R$ 30.000,0000 (unitário) R$ 30.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	1000

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Fornecedor	Valor ofertado	Situação
52.593.051/0001-78 - CENTERDATA COMERCIO DE PRODUTOS DE INFORMATICA E SERVICOS LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 20.000,0000 (unitário) R$ 20.000.000,0000 (total)	-
Marca/Fabricante: Lenovo Modelo/versão: Lenovo Valor proposta: R$ 20.000,0000 (unitário) R$ 20.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 1000		
36.770.097/0001-69 - CIB EMPREENDIMENTOS IMOBILIARIOS LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: MG	R$ 102.120.000,0000 (unitário) R$ 102.120.000.000,0000 (total)	-
Marca/Fabricante: Microcomputador All In One Tela: Até 21,5POL, Inte Modelo/versão: Microcomputador All In One Tela: Até 21,5POL, Inte Valor proposta: R$ 102.120.000,0000 (unitário) R$ 102.120.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 1000		
05.778.325/0005-47 - E.R. SOLUCOES INFORMATICA LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: ES	R$ 9.880,0000 (unitário) R$ 9.880.000,0000 (total)	Fornecedor habilitado
Marca/Fabricante: LENOVO Modelo/versão: TIO24 GEN 5 + TC M70Q GEN 5 + T24i-30 Valor proposta: R$ 13.000,0000 (unitário) R$ 13.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 1000		
53.571.459/0001-01 - ELLOELLA DISTRIBUIDORA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: PE	R$ 20.466,0000 (unitário) R$ 20.466.000,0000 (total)	-
Marca/Fabricante: DELL Modelo/versão: OPTIPLEX MICRO + C2423H + P2425H Valor proposta: R$ 22.740,0000 (unitário) R$ 22.740.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 1000		
35.689.930/0001-89 - HOUSE LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: AM	R$ 9.890,0000 (unitário) R$ 9.890.000,0000 (total)	-
Marca/Fabricante: Dell Modelo/versão: Conforme tr Valor proposta: R$ 15.000,0000 (unitário) R$ 15.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 1000		

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Fornecedor	Valor ofertado	Situação
08.528.076/0001-04 - MICROBUSINESS TECNOLOGIA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: SC	R$ 12.940,0000 (unitário) R$ 12.940.000,0000 (total)	-

Marca/Fabricante: LENOVO

Modelo/versão: ThinkCentre Tiny M70Q G4

Valor proposta: R$ 15.000,0000 (unitário) R$ 15.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 1000

32.872.401/0001-28 - PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 12.970,0000 (unitário) R$ 12.970.000,0000 (total)	-

Marca/Fabricante: Lenovo

Modelo/versão: ThinKCentre + Tiny in One

Valor proposta: R$ 13.998,0000 (unitário) R$ 13.998.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 1000

11.027.350/0003-20 - PROXYS COMERCIO ELETRONICO LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: SC	R$ 11.982,7100 (unitário) R$ 11.982.710,0000 (total)	-

Marca/Fabricante: LENOVO

Modelo/versão: ThinkCentre M70q Intel Core i5-14400T 16GB 256GB S

Valor proposta: R$ 14.550,4400 (unitário) R$ 14.550.440,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 1000

49.264.057/0001-97 - T. D. A. S. Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 17.489,0000 (unitário) R$ 17.489.000,0000 (total)	-

Marca/Fabricante: Microcomputador

Modelo/versão: all in one

Valor proposta: R$ 17.489,0000 (unitário) R$ 17.489.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 1000

28.880.531/0002-16 - TR TECNOLOGIA E COMERCIO LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: ES	R$ 12.950,0000 (unitário) R$ 12.950.000,0000 (total)	-

Marca/Fabricante: DELL ALL IN ONE 24 16GB 256GB 23,8" WIN11P 05ANOS

Modelo/versão: DELL ALL IN ONE 24 16GB 256GB 23,8" WIN11P 05ANOS

Valor proposta: R$ 15.000,0000 (unitário) R$ 15.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 1000

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Fornecedor	Valor ofertado	Situação
41.680.761/0001-19 - TREER TECNOLOGY LTDA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: MG	R$ 14.990,0000 (unitário) R$ 14.990.000,0000 (total)	-

Marca/Fabricante:	Lenovo				
Modelo/versão:	Lenovo ThinkCentre + acessorios				
Valor proposta:	R$ 18.000,0000 (unitário) R$ 18.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	1000

Lances do Item 1

Data/hora	Participante	Lance
30/06/2025 às 10:10:04	53.571.459/0001-01	R$ 20.466,0000
30/06/2025 às 10:10:06	11.027.350/0003-20	R$ 11.982,7100
30/06/2025 às 10:11:32	32.872.401/0001-28	R$ 13.988,0000
30/06/2025 às 10:12:28	01.319.640/0001-21	R$ 17.070,0000
30/06/2025 às 10:16:43	05.778.325/0005-47	R$ 9.990,0000
30/06/2025 às 10:17:32	41.680.761/0001-19	R$ 17.000,0000
30/06/2025 às 10:18:23	08.528.076/0001-04	R$ 13.978,0000
30/06/2025 às 10:20:08	41.680.761/0001-19	R$ 14.990,0000
30/06/2025 às 10:20:17	28.880.531/0002-16	R$ 13.880,0000
30/06/2025 às 10:20:35	08.528.076/0001-04	R$ 13.870,0000
30/06/2025 às 10:21:24	28.880.531/0002-16	R$ 13.850,0000
30/06/2025 às 10:21:28	35.689.930/0001-89	R$ 9.890,0000
30/06/2025 às 10:21:47	08.528.076/0001-04	R$ 13.840,0000
30/06/2025 às 10:21:48	28.880.531/0002-16	R$ 12.990,0000
30/06/2025 às 10:21:49	05.778.325/0005-47	R$ 9.880,0000
30/06/2025 às 10:22:08	08.528.076/0001-04	R$ 12.980,0000
30/06/2025 às 10:23:40	32.872.401/0001-28	R$ 12.970,0000
30/06/2025 às 10:23:42	08.528.076/0001-04	R$ 12.960,0000
30/06/2025 às 10:25:36	28.880.531/0002-16	R$ 12.950,0000
30/06/2025 às 10:25:36	08.528.076/0001-04	R$ 12.940,0000

Mensagens do chat do Item 1

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 10:00:02	A abertura do item 1 para lances está agendada para daqui a 10 minutos. Mantenham-se conectados.
Sistema	30/06/2025 às 10:10:02	O item 1 foi aberto. Solicitamos o envio de lances.

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Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 10:27:37	O item 1 está encerrado.
Sistema para o participante 05.778.325/0005-47	01/07/2025 às 10:39:48	Sr. Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, você foi convocado para enviar anexos para o item 1. Prazo para encerrar o envio: 12:42:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Pelo participante 05.778.325/0005-47	01/07/2025 às 11:08:40	O item 1 teve a convocação para envio de anexos encerrada às 11:08:40 de 01/07/2025. 4 anexos foram enviados pelo fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47.
Pelo participante 05.778.325/0005-47	01/07/2025 às 11:13:27	Prezado Sr. Pregoeiro, bom dia! Informo que os documentos solicitados foram enviados. Ficamos à disposição para quaisquer dúvidas.
Sistema	03/07/2025 às 11:55:33	O item 1 está na etapa de julgamento de proposta no período de intenção de recursos, com acréscimo de 10 minutos a partir de agora - até 03/07/2025 12:05:33.
Sistema	14/07/2025 às 12:05:02	O item 1 está na etapa de habilitação de fornecedores no período de intenção de recursos, com acréscimo de 10 minutos a partir de agora - até 14/07/2025 12:15:02.
Sistema	14/07/2025 às 15:18:10	A fase de recurso do item 1 está aberta até 17/07/2025.

Eventos do Item 1

Data/Hora	Descrição
30/06/2025 às 10:10:02	Item aberto para lances.
30/06/2025 às 10:27:37	Item com etapa aberta encerrada.
30/06/2025 às 10:27:37	Item encerrado para lances.
01/07/2025 às 10:39:48	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 convocado para o envio de anexo. Prazo para encerrar o envio: 12:42:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
01/07/2025 às 11:08:40	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 finalizou o envio de anexo.
03/07/2025 às 11:55:33	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 teve a proposta aceita, melhor lance: R$ 9.880,0000. Motivo: Atendimento a todas as exigências formais (Item 10) e Técnicas (Parecer Nª 15.2025.SIET) do Edital referente à proposta de preços..
03/07/2025 às 12:00:53	Fornecedor TREER TECNOLOGY LTDA, CNPJ 41.680.761/0001-19 registra a intenção de recurso na fase julgamento.
14/07/2025 às 12:05:02	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 foi habilitado.
14/07/2025 às 15:18:10	Encerramento da sessão 1 de julgamento / habilitação.

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PROCURADORIA GERAL DE JUSTIÇA

TERMO DE JULGAMENTO

UASG 925849 - PROCURADORIA GERAL DE JUSTIÇA - AM

PREGÃO 94010/2025

Fundamentação legal:	Lei 14.133/2021	Característica:	SRP - Registro de Preço
Critério de julgamento:	Menor Preço / Maior Desconto	Modo de disputa:	Aberto
Compra emergencial:	Não	UF da UASG:	AM
Objeto da compra:	Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 mes		
Entrega de propostas:	De 12/06/2025 às 08:00 até 30/06/2025 às 10:00		
Abertura da sessão pública:	Dia 30/06/2025 às 10:00 (horário de Brasília)		

Mensagens do chat da compra

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 10:00:02	A sessão pública está aberta. Até 1 item poderá estar em disputa simultaneamente e o período de abertura para disputa será entre 08:00 e 18:00. Haverá aviso prévio de abertura dos itens de 10 minutos. Mantenham-se conectados.
Sistema	30/06/2025 às 10:15:46	Prezados Licitantes, bom dia.
Sistema	30/06/2025 às 10:15:50	Sejam bem vindos à sessão pública do Pregão Eletrônico 94.010/2025 que tem por objeto o registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses.
Sistema	30/06/2025 às 10:15:59	Prezados, em breve será aberta a fase de disputa. Solicito atenção e comprometimento aos valores apresentados nos lances, visto que vinculam a empresa à manutenção do preço por um período de 12 meses, incumbindo a ela, portanto, a responsabilidade pela correta precificação da sua oferta.
Sistema	30/06/2025 às 10:16:10	Solicito atenção ao subitem 6.10 do Instrumento Convocatório no intuito do adequado acompanhamento do procedimento por parte de todos os interessados.
Sistema	30/06/2025 às 10:16:20	Boa disputa.
Sistema	30/06/2025 às 14:06:48	A etapa de julgamento de propostas foi iniciada. Para acompanhá-la acesse a opção "Seleção de fornecedores" na linha do tempo.
Sistema	30/06/2025 às 14:24:10	Prezados, encerrada a fase de disputa, passaremos à análise das ofertas apresentadas pelas licitantes mais bem colocadas na ordem de classificação.
Sistema	30/06/2025 às 14:26:29	No entanto, cabe tratar com os primeiros colocados para o Item 2. Solicito atenção aos interessados.
Sistema	30/06/2025 às 14:58:29	Senhores, considerando a desclassificação da proposta da licitante TROGON COMERCIO DE INFORMATICA LTDA SP para o item 2, passaremos a tratar com os licitantes seguintes. Solicito atenção aos interessados.
Sistema	30/06/2025 às 15:24:14	Prezados, considerando que o licitante HOUSE LTDA. não se manifestou, passaremos a tratativa com a licitante 42.816.024 LEONARDO CATIVO SOUSA. Solicito atenção à interessada.

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Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 15:36:05	Senhor licitante, solicito manifestação.
Sistema	30/06/2025 às 15:52:50	Senhores, em breve estarei convocando as licitantes mais bem colocadas na ordem de classificação, para envio de nova proposta ajustada ao valor dos lances para cada item.
Sistema	30/06/2025 às 15:53:19	O prazo para envio é de 2 (duas) horas contadas a partir da convocação no sistema.
Sistema	30/06/2025 às 15:57:21	Com fundamento na letra "k" do subitem 9.2 do Edital, deverá ser enviada junto à proposta de preços "documentação técnica (manuais, catálogos ou prospectos), com as características detalhadas (marca, modelo, cor, tipo de material e medidas) e imagens ilustrativas dos produtos propostos, que possibilitem a completa averiguação de conformidade com as especificações, visando facilitar a avaliação a ser realizada por técnicos deste Órgão."
Sistema	30/06/2025 às 15:59:25	Poderá ser apresentado na proposta ou junto dela, links do fabricante/fornecedor, desde que atenda, no mínimo, as exigências do dispositivo mencionado.
Sistema	30/06/2025 às 16:01:38	Em breve as licitantes mais bem classificadas serão convocadas no sistema. Solicito atenção às interessadas.
Sistema	30/06/2025 às 16:04:57	Senhores, considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retornando amanhã (01/07/2025), a partir das 10h (horário Brasília) para as convocações.
Sistema	30/06/2025 às 16:05:13	Aguardo a todos no dia e hora aqui agendados.
Sistema	30/06/2025 às 16:05:28	Obrigado pela atenção e uma excelente tarde a todos.
Sistema	01/07/2025 às 10:05:27	Prezados Licitantes, bom dia.
Sistema	01/07/2025 às 10:16:19	Retornamos aos trabalhos deste certame, considerando a convocação dos licitantes mais bem classificados na ordem dos lances para envio de propostas.
Sistema	01/07/2025 às 10:27:59	Senhores, informo que o Quadro-Resumo do Processo de Compra Nª 195.2025.SCOMS.1609045.2025.001317 com os valores estimados para cada item já se encontra disponível no Portal do MPAM, no seguinte endereço:
Sistema	01/07/2025 às 10:28:11	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	01/07/2025 às 10:29:55	Senhores, em breve estarei convocando as licitantes para envio das proposta de preços ajustadas aos lances. Solicito atenção.
Sistema	01/07/2025 às 10:54:59	Senhores, considerando a solicitação de desclassificação de proposta para o Item 4 por parte do licitante MR COMERCIO DE PECAS E ACESSORIOS LTDA., será convocado para envio de proposta o próximo licitante na ordem de classificação. Solicito atenção.
Sistema	01/07/2025 às 13:39:54	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 13:43:26	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 2 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 14:32:39	Na sequência, considerando a desclassificação das licitantes 42.816.024 LEONARDO CATIVO SOUSA (Item 2) e HOUSE LTDA. (Item 4), serão convocados novos licitantes para envio de proposta de preços. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:00:55	Prezados, em breve serão convocados licitantes para envio de propostas para os itens 2 e 4. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:08:04	Prezados, será promovido um desempate para o Item 4 entre os licitantes A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA. e 42.816.024 LEONARDO CATIVO SOUSA. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:15:30	Realizado o desempate, passaremos à convocação de novo licitante para o Item 4. Solicito atenção.

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Responsável	Data/Hora	Mensagem
Sistema	01/07/2025 às 15:17:15	Será convocado também novo licitante para o Item 2. Solicito atenção.
Sistema	01/07/2025 às 15:18:12	Estando os licitantes devidamente convocados, fico no aguardo dos solicitados documentos.
Sistema	01/07/2025 às 18:31:24	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 18:32:20	Considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retomando-os amanhã (02/07/2025), a partir das 10h (horário de Brasília).
Sistema	01/07/2025 às 18:32:44	Aguardo a todos no dia e hora aqui agendados.
Sistema	01/07/2025 às 18:33:01	Agradeço a atenção dispensada e desejo a todos um excelente fim de tarde.
Sistema	02/07/2025 às 10:02:34	Prezados, bom dia.
Sistema	02/07/2025 às 10:08:35	Senhores, informo que em breve será convocado novo licitante para envio de proposta para o item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 12:37:06	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	02/07/2025 às 12:38:31	Na sequência, será convocado novo licitante para envio de proposta para o Item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 14:52:01	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	02/07/2025 às 14:52:14	Na sequência, será convocado novo licitante para envio de proposta para o Item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 16:50:23	Prezados, considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retornando amanhã (03/07/2025), a partir das 10h (horário Brasília).
Sistema	02/07/2025 às 16:50:49	Aguardo a todos no dia e hora aqui agendados.
Sistema	02/07/2025 às 16:51:05	Finalizo desejando a todos uma excelente tarde.
Sistema	03/07/2025 às 10:11:15	Prezados Licitantes, bom dia.
Sistema	03/07/2025 às 10:11:53	Retornamos aos trabalhos deste certame considerando a convocação de novo licitante para envio de proposta para o Item 4.
Sistema	03/07/2025 às 10:12:35	Em breve estarei convocando novo licitante para envio de proposta ajusta ao lance para o Item 4. Solicito atenção ao interessado.
Sistema	03/07/2025 às 10:24:21	Prezados, em breve estarei convocando novo licitante para envio de proposta ajusta ao lance para o Item 4. Solicito atenção ao interessado.
Sistema	03/07/2025 às 10:38:26	Estando o Licitante devidamente convocado, fico no aguardo dos solicitados documentos. Obrigado!
Sistema	03/07/2025 às 11:46:29	Senhores Licitantes, recebidos os documentos referente ao Item 4, informo que os mesmos serão encaminhados à análise por parte do setor técnico deste Órgão Ministerial.
Sistema	03/07/2025 às 11:47:11	Senhores, considerando a proposta apresentada pela licitante E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 para o item 1, informo o seguinte:
Sistema	03/07/2025 às 11:48:53	Submetida a proposta e os documentos técnicos enviados pela licitante classificada, o setor técnico DTIC, através do Parecer Nº 15.2025.SIET.1661793.2025.001317, manifestou-se "pela aceitabilidade do produto ofertado".
Sistema	03/07/2025 às 11:50:25	Informo que o referido Parecer encontra-se disponível no Portal do MPAM, acessível a todos os interessados, no seguinte endereço: https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis

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Responsável	Data/Hora	Mensagem
Sistema	03/07/2025 às 11:53:21	Senhores, considerando a manifestação técnica expressa no Parecer Nª 15.2025.SIET e o atendimento a todas as exigências formais do Edital referente à proposta de preços, este Pregoeiro decide pela ACEITAÇÃO da oferta do licitante E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 para o item 1.
Sistema	07/07/2025 às 15:57:44	Prezados Licitantes, boa tarde.
Sistema	07/07/2025 às 15:58:26	Informo que retornaremos aos trabalhos deste certame amanhã (08/07/2025), a partir das 14h (horário de Brasília).
Sistema	07/07/2025 às 15:58:41	Aguardo a todos no dia e hora aqui agendados. Obrigado.
Sistema	08/07/2025 às 14:11:23	Prezados licitantes, boa tarde.
Sistema	08/07/2025 às 14:14:38	Prezados, retornamos aos trabalhos deste certame considerando as propostas dos seguintes licitantes:
Sistema	08/07/2025 às 14:16:14	a) TORINO INFORMÁTICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, para o Item 2; b) POSITIVO TECNOLOGIA S/A (Filial), CNPJ (MF) n.ª 81.243.735/0009-03, para o Item 3; e c) E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, para o Item 4
Sistema	08/07/2025 às 14:24:07	Encaminhadas as ofertas ao setor técnico para análise, o referido setor manifestou-se da seguinte forma:
Sistema	08/07/2025 às 14:26:15	Parecer Nª 16.2025.SIET.1661858.2025.001317 - TORINO INFORMÁTICA LTDA., ITEM 2 - Pela exposição de motivos, depreende-se que: a) O teclado não atende; b) O requisito de leitor biométrico no mouse e teclado não foi atendida; entre outros.
Sistema	08/07/2025 às 14:27:56	Parecer Nª 18.2025.SIET.1664620.2025.001317 - POSITIVO TECNOLOGIA S/A (FILIAL) - ITEM 3 - Recomenda-se, portanto, caso a licitante seja instada a reapresentar a proposta técnica, que ela esteja em conformidade com o disposto no subitem 18.14, informando marca, modelo e documentação comprobatória específica de todos os componentes, de modo a permitir a verificação inequívoca da compatibilidade do produto ofertado com o objeto licitado.
Sistema	08/07/2025 às 14:28:43	Parecer Nª 19.2025.SIET.1665305.2025.001317 - ER SOLUÇÕES INFORMÁTICA LTDA. - ITEM 4 - O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica OPINA pela aceitabilidade do produto ofertado.
Sistema	08/07/2025 às 14:30:03	Assim, com fundamento na análise dos Pareceres aqui apresentados, Este Pregoeiro decide:
Sistema	08/07/2025 às 14:32:07	a) Recusar a proposta de preços do licitante TORINO INFORMÁTICA LTDA., para o ITEM 2, em conformidade ao Parecer Nª 16.2025.SIET.1661858.2025.001317 e Item 10.3.2 do Edital do certame.
Sistema	08/07/2025 às 14:35:55	b) Diligenciar o licitante POSITIVO TECNOLOGIA S/A (FILIAL) - para que apresente nos documentos de proposta enviados para o Item 3, o pleno atendimento aos requisitos técnicos exigidos no Termo de Referência Nª 2.2025.DTIC.1525128.2025.001317, Anexo I ao Edital do certame.
Sistema	08/07/2025 às 14:37:36	Para tal, será aberto o prazo de 2 (duas horas para envio de documento complementar em providência à solicitação constante do Parecer Nª 18.2025.SIET.1664620.2025.001317.
Sistema	08/07/2025 às 14:39:05	c) Aceitar a proposta de preços apresentada pelo licitante ER SOLUÇÕES INFORMÁTICA LTDA., para o ITEM 4, em conformidade ao Parecer Nª 19.2025.SIET.1665305.2025.001317 e ao Item 10 do Edital do certame.
Sistema	08/07/2025 às 14:40:00	Prezados, informo que os pareceres mencionados encontram-se disponíveis e acessíveis a todos os interessados no Portal do MPAM no seguinte endereço:
Sistema	08/07/2025 às 14:40:33	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	08/07/2025 às 14:54:06	Prezado licitante POSITIVO TECNOLOGIA S/A (FILIAL), em breve V. Sa. será convocado para providências conforme apresentado nesse chat e no Parecer Nª 18.2025.SIET.1664620.2025.001317.
Sistema	08/07/2025 às 14:54:24	Solicito atenção.

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Responsável	Data/Hora	Mensagem
Sistema	08/07/2025 às 14:56:10	Prezados, considerando a desclassificação da proposta do licitante TORINO INFORMÁTICA LTDA., para o ITEM 2, informo que em breve será convocado novo licitante para envio de proposta para o Item. Solicito atenção aos interessados.
Sistema	08/07/2025 às 15:00:40	Prezados, tomadas as devidas providências e convocados os licitantes, fico no aguardo dos solicitados documentos.
Sistema	08/07/2025 às 17:25:18	Senhores, recebidos os documentos, informo que os mesmos serão encaminhados ao setor técnico para análise.
Sistema	08/07/2025 às 17:26:29	Assim, encerraremos os trabalhos por hoje, retornando em data posterior devidamente informada através desse chat, em tempo hábil ao acompanhamento de todos os interessados.
Sistema	08/07/2025 às 17:26:39	Agradeço a atenção dispensada.
Sistema	08/07/2025 às 17:26:52	Finalizo desejando uma excelente tarde a todos.
Sistema	10/07/2025 às 11:36:20	Prezados, bom dia.
Sistema	10/07/2025 às 11:36:57	Informo que retornaremos aos trabalhos deste certame amanhã (11/07/2025), a partir das 10h (horário Brasília).
Sistema	10/07/2025 às 11:37:33	Aguardo a todos no dia e hora aqui agendados.
Sistema	11/07/2025 às 10:00:40	Prezados Licitantes, bom dia.
Sistema	11/07/2025 às 10:21:39	Retornamos aos trabalhos deste certame considerando as propostas apresentadas pelos licitantes POSITIVO TECNOLOGIA S/A (Filial), para o Item 3 e E.R. SOLUCOES INFORMATICA LTDA., para o Item 2.
Sistema	11/07/2025 às 10:39:45	Senhores, recebidos os documentos de propostas e encaminhados ao setor técnico competente para análise, obtivemos os seguintes resultados:
Sistema	11/07/2025 às 10:40:56	a) Parecer Nª 21.2025.SIET.1668662.2025.001317 - ER SOLUÇÕES INFORMÁTICA LTDA., para o ITEM 2 - Conclusão - O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica OPINA pela aceitabilidade do produto ofertado.
Sistema	11/07/2025 às 10:43:00	b) Parecer Nª 22.2025.SIET.1668772.2025.001317 - POSITIVO TECNOLOGIA S/A (FILIAL), para o Item 3 - Conclusão - Após análise da documentação apresentada pela licitante [...] foram observados alguns pontos inconclusivos, marcados como . Os pontos marcados com , são exigências que não foi possível comprovar sua aderência na segunda oportunidade de envio de documentação técnica.
Sistema	11/07/2025 às 10:44:33	Senhores, informo que o Parecer Nª 21.2025.SIET.1668662.2025.001317 e o Parecer Nª 22.2025.SIET.1668772.2025.001317 encontram-se disponíveis no Portal do MPAM, no seguinte
Sistema	11/07/2025 às 10:44:40	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	11/07/2025 às 10:46:44	Senhores, considerando os resultados das análises apresentados nos pareceres, informo o seguinte:
Sistema	11/07/2025 às 11:18:42	a) para saneamento das pendências apontadas nos pareceres, as licitantes serão convocadas para envio de documentos que comprovem o atendimento às exigências apontadas.
Sistema	11/07/2025 às 11:19:44	Assim, em breve convocarei as licitantes no sistema. Solicito atenção aos interessados.
Sistema	11/07/2025 às 11:25:58	Estando os licitantes devidamente convocados, fico no aguardo dos solicitados documentos.
Sistema	11/07/2025 às 14:23:53	Senhores, boa tarde.
Sistema	11/07/2025 às 14:25:25	Considerando o envio dos documentos solicitados referentes ao Item 2 por parte do Licitante E.R. SOLUCOES INFORMATICA LTDA. e sendo os mesmos suficientes para o pleno atendimento da solicitação, informo que:
Sistema	11/07/2025 às 14:27:08	Este Pregoeiro decide pela Aceitação da proposta de preços do licitante E.R. SOLUCOES INFORMATICA LTDA. para o Item 2, pelo pleno atendimento às exigências técnicas e formais do Edital, referentes à proposta e em conformidade ao Parecer Nª 21.2025.SIET.1668662.2025.001317.

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Responsável	Data/Hora	Mensagem
Sistema	11/07/2025 às 16:52:49	Prezados, recebidos os documentos referente ao Item 3, informo que os mesmos serão encaminhados para análise do setor técnico competente.
Sistema	11/07/2025 às 16:54:57	Considerando a hora avançada, encerraremos os trabalhos por hoje, retornando na segunda-feira (14/07/2025), a partir das 11h (horário de Brasília), para continuação dos trabalhos.
Sistema	11/07/2025 às 16:55:26	Aguardo a todos no dia e hora aqui agendados.
Sistema	11/07/2025 às 16:55:54	Agradeço a atenção dispensada. Finalizo desejando uma boa tarde e um excelente fim de semana a todos.
Sistema	14/07/2025 às 11:15:08	Prezados Licitantes, bom dia.
Sistema	14/07/2025 às 11:45:13	Senhores, considerando os documentos de Habilitação apresentados pelo Licitante E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, informo que os mesmos atendem a todas as exigências estabelecidas no instrumento convocatório.
Sistema	14/07/2025 às 11:45:42	Nesse sentido, este Pregoeiro decide pela HABILITAÇÃO do licitante E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47.
Sistema	14/07/2025 às 12:02:53	Senhores, em breve estarei habilitando a licitante no próprio sistema. Solicito atenção.

Eventos da compra

Data/Hora	Descrição
30/06/2025 às 10:00:02	Abertura da sessão pública
30/06/2025 às 14:06:48	Início da etapa de julgamento de propostas

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Item 2 - Microcomputador

Microcomputador Memória Ram: 32GB, Núcleos Por Processador: Superior A 8, Armazenamento Hdd: Sem Disco HddGB, Armazenamento Ssd: Até 2 Tb, Monitor: Sem MonitorPOL, Componentes Adicionais: Com Teclado E Mouse, Sistema Operacional: Proprietário, Garantia On Site: 36MESES, Gabinete: Torre, Outros Recursos: Conforme Edital

Quantidade:	50	Valor estimado:	R$ 25.160,6300 (unitário)
Unidade de fornecimento:	Unidade		R$ 1.258.031,5000 (total)
Intervalo mínimo entre lances:	R$ 10,0000	Situação:	Aberto para recursos
Critério de julgamento:	Menor Preço		

Aceito e Habilitado por CPF ***.231.***-*9 - MAURICIO ARAUJO MEDEIROS para E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, melhor lance: R$ 20.300,0000 (unitário) / R$ 1.015.000,0000 (total)

Propostas do Item 2

Benefício Me/Epp: Conforme Art. 3ª da Lei Complementar nª 123, de 14 de dezembro de 2006
Programa de integridade: Conforme termos previsos na Lei nª 14.133/2021 e no Decreto nª 12.304/2024

Fornecedor	Valor ofertado	Situação
42.816.024/0001-63 - 42.816.024 LEONARDO CATIVO SOUSA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: AM	R$ 10.000,0000 (unitário) R$ 500.000,0000 (total)	Proposta desclassificada

Marca/Fabricante:	Conf TR				
Modelo/versão:	Conf tR				
Valor proposta:	R$ 10.000,0000 (unitário) R$ 500.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	50

Fornecedor	Valor ofertado	Situação
51.750.663/0001-64 - 51.750.663 THIERREZ MATHEUS ALVES SALES Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: DF	R$ 80.000,0000 (unitário) R$ 4.000.000,0000 (total)	-

Marca/Fabricante:	Microcomputador				
Modelo/versão:	Microcomputador				
Valor proposta:	R$ 80.000,0000 (unitário) R$ 4.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	50

Fornecedor	Valor ofertado	Situação
01.319.640/0001-21 - AJL INDUSTRIA E COMERCIO LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: AM	R$ 55.342,0000 (unitário) R$ 2.767.100,0000 (total)	-

Marca/Fabricante:	LENOVO				
Modelo/versão:	THINKSTATION P3 TORRE				
Valor proposta:	R$ 75.000,0000 (unitário) R$ 3.750.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	50

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Fornecedor	Valor ofertado	Situação
52.593.051/0001-78 - CENTERDATA COMERCIO DE PRODUTOS DE INFORMATICA E SERVICOS LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 31.000,0000 (unitário) R$ 1.550.000,0000 (total)	-

Marca/Fabricante: Lenovo
Modelo/versão: Lenovo
Valor proposta: R$ 50.000,0000 (unitário) R$ 2.500.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

36.770.097/0001-69 - CIB EMPREENDIMENTOS IMOBILIARIOS LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: MG	R$ 102.099.999,9999 (unitário) R$ 5.104.999.999,9950 (total)	-

Marca/Fabricante: Microcomputador Memória Ram: 32GB, Núcleos Por Pro
Modelo/versão: Microcomputador Memória Ram: 32GB, Núcleos Por Pro
Valor proposta: R$ 102.099.999,9999 (unitário) R$ 5.104.999.999,9950 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

05.778.325/0005-47 - E.R. SOLUCOES INFORMATICA LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: ES	R$ 20.300,0000 (unitário) R$ 1.015.000,0000 (total)	Fornecedor habilitado

Marca/Fabricante: LENOVO
Modelo/versão: P3 TW + T27hv-30 + T27i-30
Valor proposta: R$ 22.000,0000 (unitário) R$ 1.100.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

53.571.459/0001-01 - ELLOELLA DISTRIBUIDORA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: PE	R$ 58.159,8000 (unitário) R$ 2.907.990,0000 (total)	-

Marca/Fabricante: DELL
Modelo/versão: PRECISION 3680 + P2724DEB + P2725H
Valor proposta: R$ 64.622,0000 (unitário) R$ 3.231.100,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

35.689.930/0001-89 - HOUSE LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: AM	R$ 10.000,0000 (unitário) R$ 500.000,0000 (total)	Proposta desclassificada

Marca/Fabricante: Dell
Modelo/versão: Conforme tr
Valor proposta: R$ 10.000,0000 (unitário) R$ 500.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

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Fornecedor	Valor ofertado	Situação
08.528.076/0001-04 - MICROBUSINESS TECNOLOGIA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: SC	R$ 31.990,0000 (unitário) R$ 1.599.500,0000 (total)	-

Marca/Fabricante: DELL

Modelo/versão: PRECISION 3680

Valor proposta: R$ 45.000,0000 (unitário) R$ 2.250.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

32.872.401/0001-28 - PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 29.490,0000 (unitário) R$ 1.474.500,0000 (total)	-

Marca/Fabricante: Lenovo

Modelo/versão: ThinkStation Série P

Valor proposta: R$ 29.998,0000 (unitário) R$ 1.499.900,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

47.172.975/0001-60 - RENATO PALLADINO DE FREITAS 41131128869 Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: SP	R$ 28.999,0000 (unitário) R$ 1.449.950,0000 (total)	-

Marca/Fabricante: DELL

Modelo/versão: Workstation Precision + Monitor

Valor proposta: R$ 29.500,0000 (unitário) R$ 1.475.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

30.948.812/0001-24 - RL INFORMATICA LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: PE	R$ 35.990,0000 (unitário) R$ 1.799.500,0000 (total)	-

Marca/Fabricante: Lenovo

Modelo/versão: P3 Tower + Acessórios

Valor proposta: R$ 40.000,0000 (unitário) R$ 2.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

49.853.502/0001-54 - SNT SOLUCOES TECNOLOGICAS LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 44.850,0000 (unitário) R$ 2.242.500,0000 (total)	-

Marca/Fabricante: LENOVO

Modelo/versão: Lenovo THINKSTATION P3 TW

Valor proposta: R$ 45.000,0000 (unitário) R$ 2.250.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

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Fornecedor	Valor ofertado	Situação
49.264.057/0001-97 - T. D. A. S. Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 23.489,0000 (unitário) R$ 1.174.450,0000 (total)	-

Marca/Fabricante: Microcomputador
Modelo/versão: pc
Valor proposta: R$ 23.489,0000 (unitário) R$ 1.174.450,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

03.619.767/0005-15 - TORINO INFORMATICA LTDA.. Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: ES	R$ 20.280,0000 (unitário) R$ 1.014.000,0000 (total)	Proposta desclassificada

Marca/Fabricante: HP
Modelo/versão: WORK HP
Valor proposta: R$ 30.000,0000 (unitário) R$ 1.500.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

28.880.531/0002-16 - TR TECNOLOGIA E COMERCIO LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: ES	R$ 42.498,0000 (unitário) R$ 2.124.900,0000 (total)	-

Marca/Fabricante: DELL PRECISION 3680 32GB 256GB+1TB GPU 8GB WIN11P
Modelo/versão: DELL PRECISION 3680 32GB 256GB+1TB GPU 8GB WIN11P
Valor proposta: R$ 50.000,0000 (unitário) R$ 2.500.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

41.680.761/0001-19 - TREER TECNOLOGY LTDA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: MG	R$ 42.488,0000 (unitário) R$ 2.124.400,0000 (total)	-

Marca/Fabricante: Dell
Modelo/versão: Precision
Valor proposta: R$ 52.000,0000 (unitário) R$ 2.600.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

18.563.457/0001-70 - TROGON COMERCIO DE INFORMATICA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: SP	R$ 2.000,0000 (unitário) R$ 100.000,0000 (total)	Proposta desclassificada

Marca/Fabricante: DELL
Modelo/versão: DELL P2425H
Valor proposta: R$ 2.000,0000 (unitário) R$ 100.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

Lances do Item 2

Data/hora	Participante	Lance
30/06/2025 às 10:37:38	53.571.459/0001-01	R$ 58.159,8000
30/06/2025 às 10:41:21	01.319.640/0001-21	R$ 55.342,0000

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Data/hora	Participante	Lance
30/06/2025 às 10:44:07	28.880.531/0002-16	R$ 44.888,0000
30/06/2025 às 10:44:54	03.619.767/0005-15	R$ 29.000,0000
30/06/2025 às 10:45:16	49.853.502/0001-54	R$ 44.850,0000
30/06/2025 às 10:45:58	08.528.076/0001-04	R$ 39.990,0000
30/06/2025 às 10:46:01	30.948.812/0001-24	R$ 39.980,0000
30/06/2025 às 10:46:15	28.880.531/0002-16	R$ 43.500,0000
30/06/2025 às 10:46:31	08.528.076/0001-04	R$ 39.970,0000
30/06/2025 às 10:46:33	32.872.401/0001-28	R$ 29.490,0000
30/06/2025 às 10:46:34	30.948.812/0001-24	R$ 39.960,0000
30/06/2025 às 10:46:35	41.680.761/0001-19	R$ 49.990,0000
30/06/2025 às 10:46:52	08.528.076/0001-04	R$ 39.950,0000
30/06/2025 às 10:46:53	30.948.812/0001-24	R$ 39.940,0000
30/06/2025 às 10:47:22	08.528.076/0001-04	R$ 39.930,0000
30/06/2025 às 10:47:23	30.948.812/0001-24	R$ 39.920,0000
30/06/2025 às 10:47:41	08.528.076/0001-04	R$ 39.910,0000
30/06/2025 às 10:47:43	30.948.812/0001-24	R$ 39.900,0000
30/06/2025 às 10:48:01	08.528.076/0001-04	R$ 39.890,0000
30/06/2025 às 10:48:02	30.948.812/0001-24	R$ 39.880,0000
30/06/2025 às 10:48:19	08.528.076/0001-04	R$ 39.870,0000
30/06/2025 às 10:48:21	30.948.812/0001-24	R$ 39.860,0000
30/06/2025 às 10:48:31	47.172.975/0001-60	R$ 28.999,0000
30/06/2025 às 10:48:49	08.528.076/0001-04	R$ 39.850,0000
30/06/2025 às 10:48:54	30.948.812/0001-24	R$ 39.840,0000
30/06/2025 às 10:49:13	08.528.076/0001-04	R$ 39.830,0000
30/06/2025 às 10:49:19	30.948.812/0001-24	R$ 39.820,0000
30/06/2025 às 10:49:37	08.528.076/0001-04	R$ 39.810,0000
30/06/2025 às 10:49:38	30.948.812/0001-24	R$ 39.800,0000
30/06/2025 às 10:49:55	08.528.076/0001-04	R$ 39.790,0000
30/06/2025 às 10:49:58	30.948.812/0001-24	R$ 39.780,0000
30/06/2025 às 10:50:01	35.689.930/0001-89	R$ 2.100,0000 *
30/06/2025 às 10:50:19	08.528.076/0001-04	R$ 39.770,0000
30/06/2025 às 10:50:24	30.948.812/0001-24	R$ 39.760,0000
30/06/2025 às 10:50:40	08.528.076/0001-04	R$ 39.750,0000

(lances com * foram excluídos)

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Data/hora	Participante	Lance
30/06/2025 às 10:50:43	30.948.812/0001-24	R$ 39.740,0000
30/06/2025 às 10:51:02	08.528.076/0001-04	R$ 39.730,0000
30/06/2025 às 10:51:08	30.948.812/0001-24	R$ 39.720,0000
30/06/2025 às 10:51:26	08.528.076/0001-04	R$ 39.710,0000
30/06/2025 às 10:51:27	30.948.812/0001-24	R$ 39.700,0000
30/06/2025 às 10:51:44	08.528.076/0001-04	R$ 39.690,0000
30/06/2025 às 10:51:46	30.948.812/0001-24	R$ 39.680,0000
30/06/2025 às 10:52:05	08.528.076/0001-04	R$ 39.670,0000
30/06/2025 às 10:52:11	30.948.812/0001-24	R$ 39.660,0000
30/06/2025 às 10:52:29	08.528.076/0001-04	R$ 39.650,0000
30/06/2025 às 10:52:30	30.948.812/0001-24	R$ 39.640,0000
30/06/2025 às 10:52:47	08.528.076/0001-04	R$ 39.630,0000
30/06/2025 às 10:52:50	30.948.812/0001-24	R$ 39.620,0000
30/06/2025 às 10:53:08	08.528.076/0001-04	R$ 39.610,0000
30/06/2025 às 10:53:09	30.948.812/0001-24	R$ 39.600,0000
30/06/2025 às 10:53:26	08.528.076/0001-04	R$ 39.590,0000
30/06/2025 às 10:53:28	30.948.812/0001-24	R$ 39.580,0000
30/06/2025 às 10:53:44	08.528.076/0001-04	R$ 39.570,0000
30/06/2025 às 10:53:47	30.948.812/0001-24	R$ 39.560,0000
30/06/2025 às 10:54:05	08.528.076/0001-04	R$ 39.550,0000
30/06/2025 às 10:54:05	30.948.812/0001-24	R$ 39.540,0000
30/06/2025 às 10:54:29	08.528.076/0001-04	R$ 39.530,0000
30/06/2025 às 10:54:31	30.948.812/0001-24	R$ 39.520,0000
30/06/2025 às 10:54:47	08.528.076/0001-04	R$ 39.510,0000
30/06/2025 às 10:54:49	30.948.812/0001-24	R$ 39.500,0000
30/06/2025 às 10:55:05	08.528.076/0001-04	R$ 39.490,0000
30/06/2025 às 10:55:08	30.948.812/0001-24	R$ 39.480,0000
30/06/2025 às 10:55:26	08.528.076/0001-04	R$ 39.470,0000
30/06/2025 às 10:55:27	30.948.812/0001-24	R$ 39.460,0000
30/06/2025 às 10:55:44	08.528.076/0001-04	R$ 39.450,0000
30/06/2025 às 10:55:46	30.948.812/0001-24	R$ 39.440,0000
30/06/2025 às 10:56:02	08.528.076/0001-04	R$ 39.430,0000
30/06/2025 às 10:56:05	30.948.812/0001-24	R$ 39.420,0000

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Data/hora	Participante	Lance
30/06/2025 às 10:56:16	05.778.325/0005-47	R$ 21.990,0000
30/06/2025 às 10:56:32	08.528.076/0001-04	R$ 39.410,0000
30/06/2025 às 10:56:37	30.948.812/0001-24	R$ 39.400,0000
30/06/2025 às 10:56:37	03.619.767/0005-15	R$ 25.000,0000
30/06/2025 às 10:56:53	08.528.076/0001-04	R$ 39.390,0000
30/06/2025 às 10:56:55	30.948.812/0001-24	R$ 39.380,0000
30/06/2025 às 10:57:11	08.528.076/0001-04	R$ 39.370,0000
30/06/2025 às 10:57:14	30.948.812/0001-24	R$ 39.360,0000
30/06/2025 às 10:57:19	03.619.767/0005-15	R$ 22.000,0000
30/06/2025 às 10:57:36	08.528.076/0001-04	R$ 39.350,0000
30/06/2025 às 10:57:39	30.948.812/0001-24	R$ 39.340,0000
30/06/2025 às 10:57:57	08.528.076/0001-04	R$ 39.330,0000
30/06/2025 às 10:57:59	30.948.812/0001-24	R$ 39.320,0000
30/06/2025 às 10:58:05	03.619.767/0005-15	R$ 21.800,0000
30/06/2025 às 10:58:24	08.528.076/0001-04	R$ 39.310,0000
30/06/2025 às 10:58:25	30.948.812/0001-24	R$ 39.300,0000
30/06/2025 às 10:58:42	08.528.076/0001-04	R$ 39.290,0000
30/06/2025 às 10:58:44	30.948.812/0001-24	R$ 39.280,0000
30/06/2025 às 10:59:00	08.528.076/0001-04	R$ 39.270,0000
30/06/2025 às 10:59:03	41.680.761/0001-19	R$ 43.490,0000
30/06/2025 às 10:59:04	30.948.812/0001-24	R$ 39.260,0000
30/06/2025 às 10:59:21	08.528.076/0001-04	R$ 39.250,0000
30/06/2025 às 10:59:23	05.778.325/0005-47	R$ 21.790,0000
30/06/2025 às 10:59:29	30.948.812/0001-24	R$ 39.240,0000
30/06/2025 às 10:59:48	08.528.076/0001-04	R$ 39.230,0000
30/06/2025 às 10:59:55	30.948.812/0001-24	R$ 39.220,0000
30/06/2025 às 11:00:03	03.619.767/0005-15	R$ 21.700,0000
30/06/2025 às 11:00:21	08.528.076/0001-04	R$ 39.210,0000
30/06/2025 às 11:00:26	30.948.812/0001-24	R$ 39.200,0000
30/06/2025 às 11:00:42	08.528.076/0001-04	R$ 39.190,0000
30/06/2025 às 11:00:45	30.948.812/0001-24	R$ 39.180,0000
30/06/2025 às 11:01:02	05.778.325/0005-47	R$ 21.690,0000
30/06/2025 às 11:01:10	03.619.767/0005-15	R$ 21.500,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:01:27	08.528.076/0001-04	R$ 39.170,0000
30/06/2025 às 11:01:29	30.948.812/0001-24	R$ 39.160,0000
30/06/2025 às 11:01:44	05.778.325/0005-47	R$ 21.490,0000
30/06/2025 às 11:02:00	08.528.076/0001-04	R$ 39.150,0000
30/06/2025 às 11:02:04	30.948.812/0001-24	R$ 39.140,0000
30/06/2025 às 11:02:21	08.528.076/0001-04	R$ 39.130,0000
30/06/2025 às 11:02:23	30.948.812/0001-24	R$ 39.120,0000
30/06/2025 às 11:02:39	08.528.076/0001-04	R$ 39.110,0000
30/06/2025 às 11:02:42	30.948.812/0001-24	R$ 39.100,0000
30/06/2025 às 11:02:57	08.528.076/0001-04	R$ 39.090,0000
30/06/2025 às 11:03:01	30.948.812/0001-24	R$ 39.080,0000
30/06/2025 às 11:03:18	08.528.076/0001-04	R$ 39.070,0000
30/06/2025 às 11:03:20	30.948.812/0001-24	R$ 39.060,0000
30/06/2025 às 11:03:37	08.528.076/0001-04	R$ 39.050,0000
30/06/2025 às 11:03:39	30.948.812/0001-24	R$ 39.040,0000
30/06/2025 às 11:03:53	03.619.767/0005-15	R$ 21.450,0000
30/06/2025 às 11:04:10	08.528.076/0001-04	R$ 39.030,0000
30/06/2025 às 11:04:10	30.948.812/0001-24	R$ 39.020,0000
30/06/2025 às 11:04:13	05.778.325/0005-47	R$ 21.400,0000
30/06/2025 às 11:04:31	08.528.076/0001-04	R$ 39.010,0000
30/06/2025 às 11:04:35	30.948.812/0001-24	R$ 39.000,0000
30/06/2025 às 11:04:52	08.528.076/0001-04	R$ 38.990,0000
30/06/2025 às 11:04:54	30.948.812/0001-24	R$ 38.980,0000
30/06/2025 às 11:05:10	08.528.076/0001-04	R$ 38.970,0000
30/06/2025 às 11:05:13	30.948.812/0001-24	R$ 38.960,0000
30/06/2025 às 11:05:31	08.528.076/0001-04	R$ 38.950,0000
30/06/2025 às 11:05:32	30.948.812/0001-24	R$ 38.940,0000
30/06/2025 às 11:05:49	08.528.076/0001-04	R$ 38.930,0000
30/06/2025 às 11:05:51	30.948.812/0001-24	R$ 38.920,0000
30/06/2025 às 11:06:07	08.528.076/0001-04	R$ 38.910,0000
30/06/2025 às 11:06:10	30.948.812/0001-24	R$ 38.900,0000
30/06/2025 às 11:06:24	03.619.767/0005-15	R$ 21.380,0000
30/06/2025 às 11:06:39	05.778.325/0005-47	R$ 21.370,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:06:58	08.528.076/0001-04	R$ 38.890,0000
30/06/2025 às 11:07:00	30.948.812/0001-24	R$ 38.880,0000
30/06/2025 às 11:07:21	08.528.076/0001-04	R$ 38.870,0000
30/06/2025 às 11:07:27	30.948.812/0001-24	R$ 38.860,0000
30/06/2025 às 11:07:43	08.528.076/0001-04	R$ 38.850,0000
30/06/2025 às 11:07:43	03.619.767/0005-15	R$ 21.350,0000
30/06/2025 às 11:07:46	30.948.812/0001-24	R$ 38.840,0000
30/06/2025 às 11:08:04	05.778.325/0005-47	R$ 21.340,0000
30/06/2025 às 11:08:08	08.528.076/0001-04	R$ 38.830,0000
30/06/2025 às 11:08:11	30.948.812/0001-24	R$ 38.820,0000
30/06/2025 às 11:08:22	08.528.076/0001-04	R$ 38.810,0000
30/06/2025 às 11:08:23	30.948.812/0001-24	R$ 38.800,0000
30/06/2025 às 11:08:40	08.528.076/0001-04	R$ 38.790,0000
30/06/2025 às 11:08:42	30.948.812/0001-24	R$ 38.780,0000
30/06/2025 às 11:08:43	03.619.767/0005-15	R$ 21.330,0000
30/06/2025 às 11:08:55	05.778.325/0005-47	R$ 21.250,0000
30/06/2025 às 11:09:11	03.619.767/0005-15	R$ 21.220,0000
30/06/2025 às 11:09:27	05.778.325/0005-47	R$ 21.100,0000
30/06/2025 às 11:09:43	08.528.076/0001-04	R$ 38.770,0000
30/06/2025 às 11:09:45	30.948.812/0001-24	R$ 38.760,0000
30/06/2025 às 11:10:02	08.528.076/0001-04	R$ 38.750,0000
30/06/2025 às 11:10:04	30.948.812/0001-24	R$ 38.740,0000
30/06/2025 às 11:10:19	03.619.767/0005-15	R$ 21.080,0000
30/06/2025 às 11:10:38	08.528.076/0001-04	R$ 38.730,0000
30/06/2025 às 11:10:38	05.778.325/0005-47	R$ 21.050,0000
30/06/2025 às 11:10:42	30.948.812/0001-24	R$ 38.720,0000
30/06/2025 às 11:10:59	08.528.076/0001-04	R$ 38.710,0000
30/06/2025 às 11:11:00	30.948.812/0001-24	R$ 38.700,0000
30/06/2025 às 11:11:20	08.528.076/0001-04	R$ 38.690,0000
30/06/2025 às 11:11:26	30.948.812/0001-24	R$ 38.680,0000
30/06/2025 às 11:11:27	03.619.767/0005-15	R$ 21.020,0000
30/06/2025 às 11:11:44	08.528.076/0001-04	R$ 38.670,0000
30/06/2025 às 11:11:44	30.948.812/0001-24	R$ 38.660,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:11:55	05.778.325/0005-47	R$ 20.990,0000
30/06/2025 às 11:12:14	08.528.076/0001-04	R$ 38.650,0000
30/06/2025 às 11:12:15	03.619.767/0005-15	R$ 20.980,0000
30/06/2025 às 11:12:16	30.948.812/0001-24	R$ 38.640,0000
30/06/2025 às 11:12:32	08.528.076/0001-04	R$ 38.630,0000
30/06/2025 às 11:12:35	30.948.812/0001-24	R$ 38.620,0000
30/06/2025 às 11:12:36	05.778.325/0005-47	R$ 20.970,0000
30/06/2025 às 11:12:53	08.528.076/0001-04	R$ 38.610,0000
30/06/2025 às 11:13:00	30.948.812/0001-24	R$ 38.600,0000
30/06/2025 às 11:13:17	08.528.076/0001-04	R$ 38.590,0000
30/06/2025 às 11:13:21	30.948.812/0001-24	R$ 38.580,0000
30/06/2025 às 11:13:38	08.528.076/0001-04	R$ 38.570,0000
30/06/2025 às 11:13:40	30.948.812/0001-24	R$ 38.560,0000
30/06/2025 às 11:13:56	08.528.076/0001-04	R$ 38.550,0000
30/06/2025 às 11:13:58	30.948.812/0001-24	R$ 38.540,0000
30/06/2025 às 11:14:17	08.528.076/0001-04	R$ 38.530,0000
30/06/2025 às 11:14:23	30.948.812/0001-24	R$ 38.520,0000
30/06/2025 às 11:14:41	03.619.767/0005-15	R$ 20.950,0000
30/06/2025 às 11:14:58	05.778.325/0005-47	R$ 20.900,0000
30/06/2025 às 11:15:14	08.528.076/0001-04	R$ 38.510,0000
30/06/2025 às 11:15:21	03.619.767/0005-15	R$ 20.850,0000
30/06/2025 às 11:15:24	30.948.812/0001-24	R$ 38.500,0000
30/06/2025 às 11:15:38	05.778.325/0005-47	R$ 20.800,0000
30/06/2025 às 11:15:57	08.528.076/0001-04	R$ 38.490,0000
30/06/2025 às 11:16:03	30.948.812/0001-24	R$ 38.480,0000
30/06/2025 às 11:16:08	03.619.767/0005-15	R$ 20.780,0000
30/06/2025 às 11:16:27	08.528.076/0001-04	R$ 38.470,0000
30/06/2025 às 11:16:27	05.778.325/0005-47	R$ 20.760,0000
30/06/2025 às 11:16:28	30.948.812/0001-24	R$ 38.460,0000
30/06/2025 às 11:16:45	08.528.076/0001-04	R$ 38.450,0000
30/06/2025 às 11:16:47	30.948.812/0001-24	R$ 38.440,0000
30/06/2025 às 11:17:00	03.619.767/0005-15	R$ 20.720,0000
30/06/2025 às 11:17:15	05.778.325/0005-47	R$ 20.500,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:17:30	03.619.767/0005-15	R$ 20.450,0000
30/06/2025 às 11:17:47	05.778.325/0005-47	R$ 20.440,0000
30/06/2025 às 11:18:03	08.528.076/0001-04	R$ 38.430,0000
30/06/2025 às 11:18:04	30.948.812/0001-24	R$ 38.420,0000
30/06/2025 às 11:18:21	08.528.076/0001-04	R$ 38.410,0000
30/06/2025 às 11:18:23	30.948.812/0001-24	R$ 38.400,0000
30/06/2025 às 11:18:30	03.619.767/0005-15	R$ 20.420,0000
30/06/2025 às 11:18:41	05.778.325/0005-47	R$ 20.400,0000
30/06/2025 às 11:18:57	08.528.076/0001-04	R$ 38.390,0000
30/06/2025 às 11:19:00	30.948.812/0001-24	R$ 38.380,0000
30/06/2025 às 11:19:05	03.619.767/0005-15	R$ 20.390,0000
30/06/2025 às 11:19:21	08.528.076/0001-04	R$ 38.370,0000
30/06/2025 às 11:19:26	05.778.325/0005-47	R$ 20.370,0000
30/06/2025 às 11:19:26	30.948.812/0001-24	R$ 38.360,0000
30/06/2025 às 11:19:41	03.619.767/0005-15	R$ 20.350,0000
30/06/2025 às 11:19:50	52.593.051/0001-78	R$ 43.450,0000
30/06/2025 às 11:20:14	08.528.076/0001-04	R$ 38.350,0000
30/06/2025 às 11:20:17	30.948.812/0001-24	R$ 38.340,0000
30/06/2025 às 11:20:20	28.880.531/0002-16	R$ 42.998,0000
30/06/2025 às 11:20:22	05.778.325/0005-47	R$ 20.300,0000
30/06/2025 às 11:20:39	08.528.076/0001-04	R$ 38.330,0000
30/06/2025 às 11:20:42	30.948.812/0001-24	R$ 38.320,0000
30/06/2025 às 11:21:02	08.528.076/0001-04	R$ 38.310,0000
30/06/2025 às 11:21:07	30.948.812/0001-24	R$ 38.300,0000
30/06/2025 às 11:21:24	08.528.076/0001-04	R$ 38.290,0000
30/06/2025 às 11:21:25	30.948.812/0001-24	R$ 38.280,0000
30/06/2025 às 11:21:42	08.528.076/0001-04	R$ 38.270,0000
30/06/2025 às 11:21:44	30.948.812/0001-24	R$ 38.260,0000
30/06/2025 às 11:21:57	03.619.767/0005-15	R$ 20.280,0000
30/06/2025 às 11:22:16	08.528.076/0001-04	R$ 38.250,0000
30/06/2025 às 11:22:16	30.948.812/0001-24	R$ 38.240,0000
30/06/2025 às 11:22:34	08.528.076/0001-04	R$ 38.230,0000
30/06/2025 às 11:22:35	30.948.812/0001-24	R$ 38.220,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:22:54	08.528.076/0001-04	R$ 38.210,0000
30/06/2025 às 11:23:00	30.948.812/0001-24	R$ 38.200,0000
30/06/2025 às 11:23:19	08.528.076/0001-04	R$ 38.190,0000
30/06/2025 às 11:23:19	30.948.812/0001-24	R$ 38.180,0000
30/06/2025 às 11:23:37	08.528.076/0001-04	R$ 38.170,0000
30/06/2025 às 11:23:38	30.948.812/0001-24	R$ 38.160,0000
30/06/2025 às 11:23:55	08.528.076/0001-04	R$ 38.150,0000
30/06/2025 às 11:23:56	30.948.812/0001-24	R$ 38.140,0000
30/06/2025 às 11:24:14	08.528.076/0001-04	R$ 38.130,0000
30/06/2025 às 11:24:15	30.948.812/0001-24	R$ 38.120,0000
30/06/2025 às 11:24:34	08.528.076/0001-04	R$ 38.110,0000
30/06/2025 às 11:24:40	30.948.812/0001-24	R$ 38.100,0000
30/06/2025 às 11:24:58	08.528.076/0001-04	R$ 38.090,0000
30/06/2025 às 11:24:59	30.948.812/0001-24	R$ 38.080,0000
30/06/2025 às 11:25:16	08.528.076/0001-04	R$ 38.070,0000
30/06/2025 às 11:25:18	30.948.812/0001-24	R$ 38.060,0000
30/06/2025 às 11:25:37	08.528.076/0001-04	R$ 38.050,0000
30/06/2025 às 11:25:43	30.948.812/0001-24	R$ 38.040,0000
30/06/2025 às 11:26:01	08.528.076/0001-04	R$ 38.030,0000
30/06/2025 às 11:26:02	30.948.812/0001-24	R$ 38.020,0000
30/06/2025 às 11:26:19	08.528.076/0001-04	R$ 38.010,0000
30/06/2025 às 11:26:21	30.948.812/0001-24	R$ 38.000,0000
30/06/2025 às 11:26:37	08.528.076/0001-04	R$ 37.990,0000
30/06/2025 às 11:26:40	30.948.812/0001-24	R$ 37.980,0000
30/06/2025 às 11:26:58	08.528.076/0001-04	R$ 37.970,0000
30/06/2025 às 11:26:59	30.948.812/0001-24	R$ 37.960,0000
30/06/2025 às 11:27:16	08.528.076/0001-04	R$ 37.950,0000
30/06/2025 às 11:27:17	30.948.812/0001-24	R$ 37.940,0000
30/06/2025 às 11:27:34	08.528.076/0001-04	R$ 37.930,0000
30/06/2025 às 11:27:36	30.948.812/0001-24	R$ 37.920,0000
30/06/2025 às 11:27:55	08.528.076/0001-04	R$ 37.910,0000
30/06/2025 às 11:28:01	30.948.812/0001-24	R$ 37.900,0000
30/06/2025 às 11:28:20	08.528.076/0001-04	R$ 37.890,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:28:20	30.948.812/0001-24	R$ 37.880,0000
30/06/2025 às 11:28:37	08.528.076/0001-04	R$ 37.870,0000
30/06/2025 às 11:28:38	41.680.761/0001-19	R$ 42.988,0000
30/06/2025 às 11:28:39	30.948.812/0001-24	R$ 37.860,0000
30/06/2025 às 11:28:55	08.528.076/0001-04	R$ 37.850,0000
30/06/2025 às 11:28:58	30.948.812/0001-24	R$ 37.840,0000
30/06/2025 às 11:29:14	08.528.076/0001-04	R$ 37.830,0000
30/06/2025 às 11:29:16	30.948.812/0001-24	R$ 37.820,0000
30/06/2025 às 11:29:35	08.528.076/0001-04	R$ 37.810,0000
30/06/2025 às 11:29:36	30.948.812/0001-24	R$ 37.800,0000
30/06/2025 às 11:29:54	08.528.076/0001-04	R$ 37.790,0000
30/06/2025 às 11:29:54	30.948.812/0001-24	R$ 37.780,0000
30/06/2025 às 11:30:05	28.880.531/0002-16	R$ 42.498,0000
30/06/2025 às 11:30:23	08.528.076/0001-04	R$ 37.770,0000
30/06/2025 às 11:30:26	30.948.812/0001-24	R$ 37.760,0000
30/06/2025 às 11:30:44	08.528.076/0001-04	R$ 37.750,0000
30/06/2025 às 11:30:45	30.948.812/0001-24	R$ 37.740,0000
30/06/2025 às 11:31:02	08.528.076/0001-04	R$ 37.730,0000
30/06/2025 às 11:31:03	30.948.812/0001-24	R$ 37.720,0000
30/06/2025 às 11:31:20	08.528.076/0001-04	R$ 37.710,0000
30/06/2025 às 11:31:22	30.948.812/0001-24	R$ 37.700,0000
30/06/2025 às 11:31:41	08.528.076/0001-04	R$ 37.690,0000
30/06/2025 às 11:31:41	30.948.812/0001-24	R$ 37.680,0000
30/06/2025 às 11:31:59	08.528.076/0001-04	R$ 37.670,0000
30/06/2025 às 11:32:06	30.948.812/0001-24	R$ 37.660,0000
30/06/2025 às 11:32:23	08.528.076/0001-04	R$ 37.650,0000
30/06/2025 às 11:32:25	30.948.812/0001-24	R$ 37.640,0000
30/06/2025 às 11:32:41	08.528.076/0001-04	R$ 37.630,0000
30/06/2025 às 11:32:44	30.948.812/0001-24	R$ 37.620,0000
30/06/2025 às 11:33:09	08.528.076/0001-04	R$ 37.610,0000
30/06/2025 às 11:33:09	30.948.812/0001-24	R$ 37.600,0000
30/06/2025 às 11:33:26	08.528.076/0001-04	R$ 37.590,0000
30/06/2025 às 11:33:28	30.948.812/0001-24	R$ 37.580,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:33:47	08.528.076/0001-04	R$ 37.570,0000
30/06/2025 às 11:33:53	30.948.812/0001-24	R$ 37.560,0000
30/06/2025 às 11:34:14	08.528.076/0001-04	R$ 37.550,0000
30/06/2025 às 11:34:19	30.948.812/0001-24	R$ 37.540,0000
30/06/2025 às 11:34:36	08.528.076/0001-04	R$ 37.530,0000
30/06/2025 às 11:34:38	30.948.812/0001-24	R$ 37.520,0000
30/06/2025 às 11:34:54	08.528.076/0001-04	R$ 37.510,0000
30/06/2025 às 11:34:56	30.948.812/0001-24	R$ 37.500,0000
30/06/2025 às 11:35:15	08.528.076/0001-04	R$ 37.490,0000
30/06/2025 às 11:35:16	30.948.812/0001-24	R$ 37.480,0000
30/06/2025 às 11:35:35	08.528.076/0001-04	R$ 37.470,0000
30/06/2025 às 11:35:41	30.948.812/0001-24	R$ 37.460,0000
30/06/2025 às 11:36:00	08.528.076/0001-04	R$ 37.450,0000
30/06/2025 às 11:36:06	30.948.812/0001-24	R$ 37.440,0000
30/06/2025 às 11:36:24	08.528.076/0001-04	R$ 37.430,0000
30/06/2025 às 11:36:25	30.948.812/0001-24	R$ 37.420,0000
30/06/2025 às 11:36:42	08.528.076/0001-04	R$ 37.410,0000
30/06/2025 às 11:36:44	30.948.812/0001-24	R$ 37.400,0000
30/06/2025 às 11:37:00	08.528.076/0001-04	R$ 37.390,0000
30/06/2025 às 11:37:03	30.948.812/0001-24	R$ 37.380,0000
30/06/2025 às 11:37:21	08.528.076/0001-04	R$ 37.370,0000
30/06/2025 às 11:37:22	30.948.812/0001-24	R$ 37.360,0000
30/06/2025 às 11:37:39	08.528.076/0001-04	R$ 37.350,0000
30/06/2025 às 11:37:41	30.948.812/0001-24	R$ 37.340,0000
30/06/2025 às 11:38:00	08.528.076/0001-04	R$ 37.330,0000
30/06/2025 às 11:38:06	30.948.812/0001-24	R$ 37.320,0000
30/06/2025 às 11:38:31	08.528.076/0001-04	R$ 37.310,0000
30/06/2025 às 11:38:31	30.948.812/0001-24	R$ 37.300,0000
30/06/2025 às 11:38:48	08.528.076/0001-04	R$ 37.290,0000
30/06/2025 às 11:38:50	30.948.812/0001-24	R$ 37.280,0000
30/06/2025 às 11:39:14	08.528.076/0001-04	R$ 37.270,0000
30/06/2025 às 11:39:15	30.948.812/0001-24	R$ 37.260,0000
30/06/2025 às 11:39:34	08.528.076/0001-04	R$ 37.250,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:39:47	30.948.812/0001-24	R$ 37.240,0000
30/06/2025 às 11:40:03	08.528.076/0001-04	R$ 37.230,0000
30/06/2025 às 11:40:06	30.948.812/0001-24	R$ 37.220,0000
30/06/2025 às 11:40:21	08.528.076/0001-04	R$ 37.210,0000
30/06/2025 às 11:40:25	30.948.812/0001-24	R$ 37.200,0000
30/06/2025 às 11:40:43	08.528.076/0001-04	R$ 37.190,0000
30/06/2025 às 11:40:44	30.948.812/0001-24	R$ 37.180,0000
30/06/2025 às 11:41:01	08.528.076/0001-04	R$ 37.170,0000
30/06/2025 às 11:41:03	30.948.812/0001-24	R$ 37.160,0000
30/06/2025 às 11:41:22	08.528.076/0001-04	R$ 37.150,0000
30/06/2025 às 11:41:22	30.948.812/0001-24	R$ 37.140,0000
30/06/2025 às 11:41:40	08.528.076/0001-04	R$ 37.130,0000
30/06/2025 às 11:41:41	30.948.812/0001-24	R$ 37.120,0000
30/06/2025 às 11:41:58	08.528.076/0001-04	R$ 37.110,0000
30/06/2025 às 11:42:00	30.948.812/0001-24	R$ 37.100,0000
30/06/2025 às 11:42:22	08.528.076/0001-04	R$ 37.090,0000
30/06/2025 às 11:42:25	30.948.812/0001-24	R$ 37.080,0000
30/06/2025 às 11:42:43	08.528.076/0001-04	R$ 37.070,0000
30/06/2025 às 11:42:44	30.948.812/0001-24	R$ 37.060,0000
30/06/2025 às 11:43:01	08.528.076/0001-04	R$ 37.050,0000
30/06/2025 às 11:43:03	30.948.812/0001-24	R$ 37.040,0000
30/06/2025 às 11:43:15	52.593.051/0001-78	R$ 37.000,0000
30/06/2025 às 11:43:15	30.948.812/0001-24	R$ 36.990,0000
30/06/2025 às 11:43:32	52.593.051/0001-78	R$ 36.000,0000
30/06/2025 às 11:43:34	30.948.812/0001-24	R$ 35.990,0000
30/06/2025 às 11:43:48	52.593.051/0001-78	R$ 35.000,0000
30/06/2025 às 11:44:07	08.528.076/0001-04	R$ 34.990,0000
30/06/2025 às 11:44:18	52.593.051/0001-78	R$ 34.000,0000
30/06/2025 às 11:44:37	08.528.076/0001-04	R$ 33.990,0000
30/06/2025 às 11:44:48	52.593.051/0001-78	R$ 33.000,0000
30/06/2025 às 11:45:04	08.528.076/0001-04	R$ 32.990,0000
30/06/2025 às 11:45:47	41.680.761/0001-19	R$ 42.488,0000
30/06/2025 às 11:46:04	52.593.051/0001-78	R$ 32.000,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:46:22	08.528.076/0001-04	R$ 31.990,0000
30/06/2025 às 11:46:54	52.593.051/0001-78	R$ 31.000,0000

Mensagens do chat do Item 2

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 10:27:37	A abertura do item 2 para lances está agendada para daqui a 10 minutos. Mantenham-se conectados.
Sistema	30/06/2025 às 10:37:37	O item 2 foi aberto. Solicitamos o envio de lances.
Sistema	30/06/2025 às 10:50:09	O lance no valor de R$ 2.100,0000 do item 2 foi excluído pelo fornecedor.
Sistema	30/06/2025 às 11:48:55	O item 2 está aguardando decisão de reinício ou encerramento da etapa aberta pelo comprador.
Sistema	30/06/2025 às 12:04:14	O item 2 está encerrado.
Sistema para o participante 18.563.457/0001-70	30/06/2025 às 14:27:38	Prezado Licitante, boa tarde.
Sistema para o participante 18.563.457/0001-70	30/06/2025 às 14:29:00	Considerando a descrição do Item 2 e o preço unitário apresentado em sua proposta, pergunto se V. Sa. pretende manter a proposta, visto que o preço encontra-se bem inferior ao preço de mercado para o item em foco.
Sistema para o participante 18.563.457/0001-70	30/06/2025 às 14:30:19	Será concedido o prazo de 15 minutos para vossa manifestação. No caso de encerramento do prazo informado, a proposta apresentada poderá ser recusada.
Sistema para o participante 18.563.457/0001-70	30/06/2025 às 14:31:05	O prazo se encerra às 14h37minutos.
Pelo participante 18.563.457/0001-70	30/06/2025 às 14:34:07	Um momento
Pelo participante 18.563.457/0001-70	30/06/2025 às 14:35:15	Estamos verificando
Pelo participante 18.563.457/0001-70	30/06/2025 às 14:38:56	Vamos manter o valor
Sistema para o participante 18.563.457/0001-70	30/06/2025 às 14:43:01	Prezados, pergunto novamente, os senhores pretendem manter a proposta de fornecer MICROCOMPUTADOR TIPO 2 - "WORKSTATION COM MONITOR PRINCIPAL E MONITOR AUXILIAR pelo preço unitário de R$ 2.000,00 (dois mil reais)?
Pelo participante 18.563.457/0001-70	30/06/2025 às 14:46:35	Creio que cotamos apenas o monitor e não o workstation sendo assim solicitamos nossa desclassificação
Sistema para o participante 18.563.457/0001-70	30/06/2025 às 14:57:03	Entendido senhor licitante. Agradeço a informação. A proposta será recusada.
Sistema para o participante 35.689.930/0001-89	30/06/2025 às 15:00:45	Prezado licitante, boa tarde.
Sistema para o participante 35.689.930/0001-89	30/06/2025 às 15:00:55	Considerando a descrição do Item 2 e o preço unitário apresentado em sua proposta, pergunto se V. Sa. pretende manter a proposta, visto que o preço encontra-se bem inferior ao preço de mercado para o item em foco.
Sistema para o participante 35.689.930/0001-89	30/06/2025 às 15:01:20	Será concedido o prazo de 15 minutos para vossa manifestação. No caso de encerramento do prazo informado, a proposta apresentada poderá ser recusada.

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Responsável	Data/Hora	Mensagem
Sistema para o participante 35.689.930/0001-89	30/06/2025 às 15:01:50	O prazo se encerra às 15h17minutos.
Sistema para o participante 42.816.024/0001-63	30/06/2025 às 15:24:35	Prezado licitante, boa tarde.
Sistema para o participante 42.816.024/0001-63	30/06/2025 às 15:24:43	Considerando a descrição do Item 2 e o preço unitário apresentado em sua proposta, pergunto se V. Sa. pretende manter a proposta, visto que o preço encontra-se bem inferior ao preço de mercado para o item em foco.
Sistema para o participante 35.689.930/0001-89	30/06/2025 às 15:25:01	Será concedido o prazo de 15 minutos para vossa manifestação. No caso de encerramento do prazo informado, a proposta apresentada poderá ser recusada.
Sistema para o participante 42.816.024/0001-63	30/06/2025 às 15:25:19	Será concedido o prazo de 15 minutos para vossa manifestação. No caso de encerramento do prazo informado, a proposta apresentada poderá ser recusada.
Sistema para o participante 42.816.024/0001-63	30/06/2025 às 15:27:23	O prazo para vossa manifestação se encerrará às 15h43min.
Pelo participante 42.816.024/0001-63	30/06/2025 às 15:27:24	Boa tarde Sr Pregoeiro
Pelo participante 42.816.024/0001-63	30/06/2025 às 15:28:11	Podemos entrar em negociação
Sistema para o participante 42.816.024/0001-63	30/06/2025 às 15:33:58	Prezado, a proposta apresentada para o Item 2 - “WORKSTATION COM MONITOR PRINCIPAL E MONITOR AUXILIAR” no preço unitário de R$ 10.000,00 (dez mil reais). V. Sa. mantém a oferta?
Sistema para o participante 42.816.024/0001-63	30/06/2025 às 15:37:06	Senhor licitante, solicito manifestação.
Pelo participante 42.816.024/0001-63	30/06/2025 às 15:38:14	Sim, mantenho valor
Sistema para o participante 42.816.024/0001-63	01/07/2025 às 10:40:21	Sr. Fornecedor 42.816.024 LEONARDO CATIVO SOUSA, CNPJ 42.816.024/0001-63, você foi convocado para enviar anexos para o item 2. Prazo para encerrar o envio: 12:44:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Sistema para o participante 42.816.024/0001-63	01/07/2025 às 12:44:00	O item 2 teve a convocação para envio de anexos encerrada às 12:44:00 de 01/07/2025. Nenhum anexo foi enviado pelo fornecedor 42.816.024 LEONARDO CATIVO SOUSA, CNPJ 42.816.024/0001-63.
Sistema para o participante 03.619.767/0005-15	01/07/2025 às 15:17:41	Sr. Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, você foi convocado para enviar anexos para o item 2. Prazo para encerrar o envio: 17:20:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Pelo participante 03.619.767/0005-15	01/07/2025 às 16:23:23	O item 2 teve a convocação para envio de anexos encerrada às 16:23:23 de 01/07/2025. 8 anexos foram enviados pelo fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15.
Pelo participante 03.619.767/0005-15	01/07/2025 às 16:29:34	Sr pregoeiro, por favor poderia reabrir o envio de anexo, para anexar um arquivo complementar que faltou?
Sistema para o participante 05.778.325/0005-47	08/07/2025 às 15:00:07	Sr. Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, você foi convocado para enviar anexos para o item 2. Prazo para encerrar o envio: 17:05:00 do dia 08/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital.. .
Pelo participante 05.778.325/0005-47	08/07/2025 às 16:04:37	O item 2 teve a convocação para envio de anexos encerrada às 16:04:37 de 08/07/2025. 3 anexos foram enviados pelo fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47.

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Responsável	Data/Hora	Mensagem
Sistema para o participante 05.778.325/0005-47	11/07/2025 às 11:22:43	Sr. Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, você foi convocado para enviar anexos para o item 2. Prazo para encerrar o envio: 13:25:00 do dia 11/07/2025. Justificativa: Solicito envio de documentos que comprovem o atendimento da oferta aos pontos levantados no Parecer Nª 21.2025.SIET.1668662.2025.001317..
Pelo participante 05.778.325/0005-47	11/07/2025 às 12:00:54	O item 2 teve a convocação para envio de anexos encerrada às 12:00:54 de 11/07/2025. 4 anexos foram enviados pelo fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47.
Sistema	11/07/2025 às 14:29:50	O item 2 está na etapa de julgamento de proposta no período de intenção de recursos, com acréscimo de 10 minutos a partir de agora - até 11/07/2025 14:39:50.
Sistema	14/07/2025 às 12:05:22	O item 2 está na etapa de habilitação de fornecedores no período de intenção de recursos, com acréscimo de 10 minutos a partir de agora - até 14/07/2025 12:15:22.
Sistema	14/07/2025 às 15:18:10	A fase de recurso do item 2 está aberta até 17/07/2025.

Eventos do Item 2

Data/Hora	Descrição
30/06/2025 às 10:37:37	Item aberto para lances.
30/06/2025 às 11:48:55	Item aguardando decisão sobre reinício ou encerramento da etapa aberta.
30/06/2025 às 12:04:14	Item com etapa aberta encerrada.
30/06/2025 às 12:04:14	Item encerrado para lances.
01/07/2025 às 10:40:21	Fornecedor 42.816.024 LEONARDO CATIVO SOUSA, CNPJ 42.816.024/0001-63 convocado para o envio de anexo. Prazo para encerrar o envio: 12:44:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
01/07/2025 às 15:06:11	Fornecedor 42.816.024 LEONARDO CATIVO SOUSA, CNPJ 42.816.024/0001-63 teve a proposta desclassificada, melhor lance: R$ 10.000,0000. Motivo: Proposta recusada, conforme subitem 9.1 c/c 10.3.5. do Edital..
01/07/2025 às 15:17:41	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 convocado para o envio de anexo. Prazo para encerrar o envio: 17:20:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
01/07/2025 às 16:23:23	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 finalizou o envio de anexo.
08/07/2025 às 14:55:00	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 teve a proposta desclassificada, melhor lance: R$ 20.280,0000. Motivo: Proposta recusada em conformidade ao Parecer Nª 16.2025.SIET.1661858.2025.001317 e Item 10.3.2 do Edital do certame. .
08/07/2025 às 15:00:07	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 convocado para o envio de anexo. Prazo para encerrar o envio: 17:05:00 do dia 08/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital.. .
08/07/2025 às 16:04:37	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 finalizou o envio de anexo.
11/07/2025 às 11:22:43	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 convocado para o envio de anexo. Prazo para encerrar o envio: 13:25:00 do dia 11/07/2025. Justificativa: Solicito envio de documentos que comprovem o atendimento da oferta aos pontos levantados no Parecer Nª 21.2025.SIET.1668662.2025.001317..
11/07/2025 às 12:00:54	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 finalizou o envio de anexo.
11/07/2025 às 14:29:10	Fornecedor TROGON COMERCIO DE INFORMATICA LTDA, CNPJ 18.563.457/0001-70 teve a proposta desclassificada, melhor lance: R$ 2.000,0000. Motivo: Proposta recusada pelo não atendimento ao subitem 9.1. do Edital..
11/07/2025 às 14:29:38	Fornecedor HOUSE LTDA, CNPJ 35.689.930/0001-89 teve a proposta desclassificada, melhor lance: R$ 10.000,0000. Motivo: Proposta recusada pelo não atendimento ao subitem 9.1. do Edital..
11/07/2025 às 14:29:50	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 teve a proposta aceita, melhor lance: R$ 20.300,0000. Motivo: Aceitação da proposta de preços pelo pleno atendimento às exigências técnicas e formais do Edital, referentes à proposta e em conformidade ao Parecer Nª 21.2025.SIET.1668662.2025.001317..

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Data/Hora	Descrição
11/07/2025 às 14:32:01	Fornecedor TREER TECNOLOGY LTDA, CNPJ 41.680.761/0001-19 registra a intenção de recurso na fase julgamento.
11/07/2025 às 14:37:25	Fornecedor RL INFORMATICA LTDA, CNPJ 30.948.812/0001-24 registra a intenção de recurso na fase julgamento.
14/07/2025 às 12:05:23	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 foi habilitado.
14/07/2025 às 12:10:50	Fornecedor RL INFORMATICA LTDA, CNPJ 30.948.812/0001-24 registra a intenção de recurso na fase habilitação.
14/07/2025 às 15:18:10	Encerramento da sessão 1 de julgamento / habilitação.

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PROCURADORIA GERAL DE JUSTIÇA

TERMO DE JULGAMENTO

UASG 925849 - PROCURADORIA GERAL DE JUSTIÇA - AM

PREGÃO 94010/2025

Fundamentação legal:	Lei 14.133/2021	Característica:	SRP - Registro de Preço
Critério de julgamento:	Menor Preço / Maior Desconto	Modo de disputa:	Aberto
Compra emergencial:	Não	UF da UASG:	AM
Objeto da compra:	Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 mes		
Entrega de propostas:	De 12/06/2025 às 08:00 até 30/06/2025 às 10:00		
Abertura da sessão pública:	Dia 30/06/2025 às 10:00 (horário de Brasília)		

Mensagens do chat da compra

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 10:00:02	A sessão pública está aberta. Até 1 item poderá estar em disputa simultaneamente e o período de abertura para disputa será entre 08:00 e 18:00. Haverá aviso prévio de abertura dos itens de 10 minutos. Mantenham-se conectados.
Sistema	30/06/2025 às 10:15:46	Prezados Licitantes, bom dia.
Sistema	30/06/2025 às 10:15:50	Sejam bem vindos à sessão pública do Pregão Eletrônico 94.010/2025 que tem por objeto o registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses.
Sistema	30/06/2025 às 10:15:59	Prezados, em breve será aberta a fase de disputa. Solicito atenção e comprometimento aos valores apresentados nos lances, visto que vinculam a empresa à manutenção do preço por um período de 12 meses, incumbindo a ela, portanto, a responsabilidade pela correta precificação da sua oferta.
Sistema	30/06/2025 às 10:16:10	Solicito atenção ao subitem 6.10 do Instrumento Convocatório no intuito do adequado acompanhamento do procedimento por parte de todos os interessados.
Sistema	30/06/2025 às 10:16:20	Boa disputa.
Sistema	30/06/2025 às 14:06:48	A etapa de julgamento de propostas foi iniciada. Para acompanhá-la acesse a opção "Seleção de fornecedores" na linha do tempo.
Sistema	30/06/2025 às 14:24:10	Prezados, encerrada a fase de disputa, passaremos à análise das ofertas apresentadas pelas licitantes mais bem colocadas na ordem de classificação.
Sistema	30/06/2025 às 14:26:29	No entanto, cabe tratar com os primeiros colocados para o Item 2. Solicito atenção aos interessados.
Sistema	30/06/2025 às 14:58:29	Senhores, considerando a desclassificação da proposta da licitante TROGON COMERCIO DE INFORMATICA LTDA SP para o item 2, passaremos a tratar com os licitantes seguintes. Solicito atenção aos interessados.
Sistema	30/06/2025 às 15:24:14	Prezados, considerando que o licitante HOUSE LTDA. não se manifestou, passaremos a tratativa com a licitante 42.816.024 LEONARDO CATIVO SOUSA. Solicito atenção à interessada.

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Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 15:36:05	Senhor licitante, solicito manifestação.
Sistema	30/06/2025 às 15:52:50	Senhores, em breve estarei convocando as licitantes mais bem colocadas na ordem de classificação, para envio de nova proposta ajustada ao valor dos lances para cada item.
Sistema	30/06/2025 às 15:53:19	O prazo para envio é de 2 (duas) horas contadas a partir da convocação no sistema.
Sistema	30/06/2025 às 15:57:21	Com fundamento na letra "k" do subitem 9.2 do Edital, deverá ser enviada junto à proposta de preços "documentação técnica (manuais, catálogos ou prospectos), com as características detalhadas (marca, modelo, cor, tipo de material e medidas) e imagens ilustrativas dos produtos propostos, que possibilitem a completa averiguação de conformidade com as especificações, visando facilitar a avaliação a ser realizada por técnicos deste Órgão."
Sistema	30/06/2025 às 15:59:25	Poderá ser apresentado na proposta ou junto dela, links do fabricante/fornecedor, desde que atenda, no mínimo, as exigências do dispositivo mencionado.
Sistema	30/06/2025 às 16:01:38	Em breve as licitantes mais bem classificadas serão convocadas no sistema. Solicito atenção às interessadas.
Sistema	30/06/2025 às 16:04:57	Senhores, considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retornando amanhã (01/07/2025), a partir das 10h (horário Brasília) para as convocações.
Sistema	30/06/2025 às 16:05:13	Aguardo a todos no dia e hora aqui agendados.
Sistema	30/06/2025 às 16:05:28	Obrigado pela atenção e uma excelente tarde a todos.
Sistema	01/07/2025 às 10:05:27	Prezados Licitantes, bom dia.
Sistema	01/07/2025 às 10:16:19	Retornamos aos trabalhos deste certame, considerando a convocação dos licitantes mais bem classificados na ordem dos lances para envio de propostas.
Sistema	01/07/2025 às 10:27:59	Senhores, informo que o Quadro-Resumo do Processo de Compra Nª 195.2025.SCOMS.1609045.2025.001317 com os valores estimados para cada item já se encontra disponível no Portal do MPAM, no seguinte endereço:
Sistema	01/07/2025 às 10:28:11	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	01/07/2025 às 10:29:55	Senhores, em breve estarei convocando as licitantes para envio das proposta de preços ajustadas aos lances. Solicito atenção.
Sistema	01/07/2025 às 10:54:59	Senhores, considerando a solicitação de desclassificação de proposta para o Item 4 por parte do licitante MR COMERCIO DE PECAS E ACESSORIOS LTDA., será convocado para envio de proposta o próximo licitante na ordem de classificação. Solicito atenção.
Sistema	01/07/2025 às 13:39:54	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 13:43:26	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 2 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 14:32:39	Na sequência, considerando a desclassificação das licitantes 42.816.024 LEONARDO CATIVO SOUSA (Item 2) e HOUSE LTDA. (Item 4), serão convocados novos licitantes para envio de proposta de preços. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:00:55	Prezados, em breve serão convocados licitantes para envio de propostas para os itens 2 e 4. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:08:04	Prezados, será promovido um desempate para o Item 4 entre os licitantes A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA. e 42.816.024 LEONARDO CATIVO SOUSA. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:15:30	Realizado o desempate, passaremos à convocação de novo licitante para o Item 4. Solicito atenção.

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Responsável	Data/Hora	Mensagem
Sistema	01/07/2025 às 15:17:15	Será convocado também novo licitante para o Item 2. Solicito atenção.
Sistema	01/07/2025 às 15:18:12	Estando os licitantes devidamente convocados, fico no aguardo dos solicitados documentos.
Sistema	01/07/2025 às 18:31:24	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 18:32:20	Considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retomando-os amanhã (02/07/2025), a partir das 10h (horário de Brasília).
Sistema	01/07/2025 às 18:32:44	Aguardo a todos no dia e hora aqui agendados.
Sistema	01/07/2025 às 18:33:01	Agradeço a atenção dispensada e desejo a todos um excelente fim de tarde.
Sistema	02/07/2025 às 10:02:34	Prezados, bom dia.
Sistema	02/07/2025 às 10:08:35	Senhores, informo que em breve será convocado novo licitante para envio de proposta para o item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 12:37:06	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	02/07/2025 às 12:38:31	Na sequência, será convocado novo licitante para envio de proposta para o Item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 14:52:01	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	02/07/2025 às 14:52:14	Na sequência, será convocado novo licitante para envio de proposta para o Item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 16:50:23	Prezados, considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retornando amanhã (03/07/2025), a partir das 10h (horário Brasília).
Sistema	02/07/2025 às 16:50:49	Aguardo a todos no dia e hora aqui agendados.
Sistema	02/07/2025 às 16:51:05	Finalizo desejando a todos uma excelente tarde.
Sistema	03/07/2025 às 10:11:15	Prezados Licitantes, bom dia.
Sistema	03/07/2025 às 10:11:53	Retornamos aos trabalhos deste certame considerando a convocação de novo licitante para envio de proposta para o Item 4.
Sistema	03/07/2025 às 10:12:35	Em breve estarei convocando novo licitante para envio de proposta ajusta ao lance para o Item 4. Solicito atenção ao interessado.
Sistema	03/07/2025 às 10:24:21	Prezados, em breve estarei convocando novo licitante para envio de proposta ajusta ao lance para o Item 4. Solicito atenção ao interessado.
Sistema	03/07/2025 às 10:38:26	Estando o Licitante devidamente convocado, fico no aguardo dos solicitados documentos. Obrigado!
Sistema	03/07/2025 às 11:46:29	Senhores Licitantes, recebidos os documentos referente ao Item 4, informo que os mesmos serão encaminhados à análise por parte do setor técnico deste Órgão Ministerial.
Sistema	03/07/2025 às 11:47:11	Senhores, considerando a proposta apresentada pela licitante E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 para o item 1, informo o seguinte:
Sistema	03/07/2025 às 11:48:53	Submetida a proposta e os documentos técnicos enviados pela licitante classificada, o setor técnico DTIC, através do Parecer Nº 15.2025.SIET.1661793.2025.001317, manifestou-se "pela aceitabilidade do produto ofertado".
Sistema	03/07/2025 às 11:50:25	Informo que o referido Parecer encontra-se disponível no Portal do MPAM, acessível a todos os interessados, no seguinte endereço: https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis

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Responsável	Data/Hora	Mensagem
Sistema	03/07/2025 às 11:53:21	Senhores, considerando a manifestação técnica expressa no Parecer Nª 15.2025.SIET e o atendimento a todas as exigências formais do Edital referente à proposta de preços, este Pregoeiro decide pela ACEITAÇÃO da oferta do licitante E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 para o item 1.
Sistema	07/07/2025 às 15:57:44	Prezados Licitantes, boa tarde.
Sistema	07/07/2025 às 15:58:26	Informo que retornaremos aos trabalhos deste certame amanhã (08/07/2025), a partir das 14h (horário de Brasília).
Sistema	07/07/2025 às 15:58:41	Aguardo a todos no dia e hora aqui agendados. Obrigado.
Sistema	08/07/2025 às 14:11:23	Prezados licitantes, boa tarde.
Sistema	08/07/2025 às 14:14:38	Prezados, retornamos aos trabalhos deste certame considerando as propostas dos seguintes licitantes:
Sistema	08/07/2025 às 14:16:14	a) TORINO INFORMÁTICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, para o Item 2; b) POSITIVO TECNOLOGIA S/A (Filial), CNPJ (MF) n.ª 81.243.735/0009-03, para o Item 3; e c) E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, para o Item 4
Sistema	08/07/2025 às 14:24:07	Encaminhadas as ofertas ao setor técnico para análise, o referido setor manifestou-se da seguinte forma:
Sistema	08/07/2025 às 14:26:15	Parecer Nª 16.2025.SIET.1661858.2025.001317 - TORINO INFORMÁTICA LTDA., ITEM 2 - Pela exposição de motivos, depreende-se que: a) O teclado não atende; b) O requisito de leitor biométrico no mouse e teclado não foi atendida; entre outros.
Sistema	08/07/2025 às 14:27:56	Parecer Nª 18.2025.SIET.1664620.2025.001317 - POSITIVO TECNOLOGIA S/A (FILIAL) - ITEM 3 - Recomenda-se, portanto, caso a licitante seja instada a reapresentar a proposta técnica, que ela esteja em conformidade com o disposto no subitem 18.14, informando marca, modelo e documentação comprobatória específica de todos os componentes, de modo a permitir a verificação inequívoca da compatibilidade do produto ofertado com o objeto licitado.
Sistema	08/07/2025 às 14:28:43	Parecer Nª 19.2025.SIET.1665305.2025.001317 - ER SOLUÇÕES INFORMÁTICA LTDA. - ITEM 4 - O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica OPINA pela aceitabilidade do produto ofertado.
Sistema	08/07/2025 às 14:30:03	Assim, com fundamento na análise dos Pareceres aqui apresentados, Este Pregoeiro decide:
Sistema	08/07/2025 às 14:32:07	a) Recusar a proposta de preços do licitante TORINO INFORMÁTICA LTDA., para o ITEM 2, em conformidade ao Parecer Nª 16.2025.SIET.1661858.2025.001317 e Item 10.3.2 do Edital do certame.
Sistema	08/07/2025 às 14:35:55	b) Diligenciar o licitante POSITIVO TECNOLOGIA S/A (FILIAL) - para que apresente nos documentos de proposta enviados para o Item 3, o pleno atendimento aos requisitos técnicos exigidos no Termo de Referência Nª 2.2025.DTIC.1525128.2025.001317, Anexo I ao Edital do certame.
Sistema	08/07/2025 às 14:37:36	Para tal, será aberto o prazo de 2 (duas horas para envio de documento complementar em providência à solicitação constante do Parecer Nª 18.2025.SIET.1664620.2025.001317.
Sistema	08/07/2025 às 14:39:05	c) Aceitar a proposta de preços apresentada pelo licitante ER SOLUÇÕES INFORMÁTICA LTDA., para o ITEM 4, em conformidade ao Parecer Nª 19.2025.SIET.1665305.2025.001317 e ao Item 10 do Edital do certame.
Sistema	08/07/2025 às 14:40:00	Prezados, informo que os pareceres mencionados encontram-se disponíveis e acessíveis a todos os interessados no Portal do MPAM no seguinte endereço:
Sistema	08/07/2025 às 14:40:33	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	08/07/2025 às 14:54:06	Prezado licitante POSITIVO TECNOLOGIA S/A (FILIAL), em breve V. Sa. será convocado para providências conforme apresentado nesse chat e no Parecer Nª 18.2025.SIET.1664620.2025.001317.
Sistema	08/07/2025 às 14:54:24	Solicito atenção.

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Responsável	Data/Hora	Mensagem
Sistema	08/07/2025 às 14:56:10	Prezados, considerando a desclassificação da proposta do licitante TORINO INFORMÁTICA LTDA., para o ITEM 2, informo que em breve será convocado novo licitante para envio de proposta para o Item. Solicito atenção aos interessados.
Sistema	08/07/2025 às 15:00:40	Prezados, tomadas as devidas providências e convocados os licitantes, fico no aguardo dos solicitados documentos.
Sistema	08/07/2025 às 17:25:18	Senhores, recebidos os documentos, informo que os mesmos serão encaminhados ao setor técnico para análise.
Sistema	08/07/2025 às 17:26:29	Assim, encerraremos os trabalhos por hoje, retornando em data posterior devidamente informada através desse chat, em tempo hábil ao acompanhamento de todos os interessados.
Sistema	08/07/2025 às 17:26:39	Agradeço a atenção dispensada.
Sistema	08/07/2025 às 17:26:52	Finalizo desejando uma excelente tarde a todos.
Sistema	10/07/2025 às 11:36:20	Prezados, bom dia.
Sistema	10/07/2025 às 11:36:57	Informo que retornaremos aos trabalhos deste certame amanhã (11/07/2025), a partir das 10h (horário Brasília).
Sistema	10/07/2025 às 11:37:33	Aguardo a todos no dia e hora aqui agendados.
Sistema	11/07/2025 às 10:00:40	Prezados Licitantes, bom dia.
Sistema	11/07/2025 às 10:21:39	Retornamos aos trabalhos deste certame considerando as propostas apresentadas pelos licitantes POSITIVO TECNOLOGIA S/A (Filial), para o Item 3 e E.R. SOLUCOES INFORMATICA LTDA., para o Item 2.
Sistema	11/07/2025 às 10:39:45	Senhores, recebidos os documentos de propostas e encaminhados ao setor técnico competente para análise, obtivemos os seguintes resultados:
Sistema	11/07/2025 às 10:40:56	a) Parecer Nª 21.2025.SIET.1668662.2025.001317 - ER SOLUÇÕES INFORMÁTICA LTDA., para o ITEM 2 - Conclusão - O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica OPINA pela aceitabilidade do produto ofertado.
Sistema	11/07/2025 às 10:43:00	b) Parecer Nª 22.2025.SIET.1668772.2025.001317 - POSITIVO TECNOLOGIA S/A (FILIAL), para o Item 3 - Conclusão - Após análise da documentação apresentada pela licitante [...] foram observados alguns pontos inconclusivos, marcados como . Os pontos marcados com , são exigências que não foi possível comprovar sua aderência na segunda oportunidade de envio de documentação técnica.
Sistema	11/07/2025 às 10:44:33	Senhores, informo que o Parecer Nª 21.2025.SIET.1668662.2025.001317 e o Parecer Nª 22.2025.SIET.1668772.2025.001317 encontram-se disponíveis no Portal do MPAM, no seguinte
Sistema	11/07/2025 às 10:44:40	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	11/07/2025 às 10:46:44	Senhores, considerando os resultados das análises apresentados nos pareceres, informo o seguinte:
Sistema	11/07/2025 às 11:18:42	a) para saneamento das pendências apontadas nos pareceres, as licitantes serão convocadas para envio de documentos que comprovem o atendimento às exigências apontadas.
Sistema	11/07/2025 às 11:19:44	Assim, em breve convocarei as licitantes no sistema. Solicito atenção aos interessados.
Sistema	11/07/2025 às 11:25:58	Estando os licitantes devidamente convocados, fico no aguardo dos solicitados documentos.
Sistema	11/07/2025 às 14:23:53	Senhores, boa tarde.
Sistema	11/07/2025 às 14:25:25	Considerando o envio dos documentos solicitados referentes ao Item 2 por parte do Licitante E.R. SOLUCOES INFORMATICA LTDA. e sendo os mesmos suficientes para o pleno atendimento da solicitação, informo que:
Sistema	11/07/2025 às 14:27:08	Este Pregoeiro decide pela Aceitação da proposta de preços do licitante E.R. SOLUCOES INFORMATICA LTDA. para o Item 2, pelo pleno atendimento às exigências técnicas e formais do Edital, referentes à proposta e em conformidade ao Parecer Nª 21.2025.SIET.1668662.2025.001317.

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Responsável	Data/Hora	Mensagem
Sistema	11/07/2025 às 16:52:49	Prezados, recebidos os documentos referente ao Item 3, informo que os mesmos serão encaminhados para análise do setor técnico competente.
Sistema	11/07/2025 às 16:54:57	Considerando a hora avançada, encerraremos os trabalhos por hoje, retornando na segunda-feira (14/07/2025), a partir das 11h (horário de Brasília), para continuação dos trabalhos.
Sistema	11/07/2025 às 16:55:26	Aguardo a todos no dia e hora aqui agendados.
Sistema	11/07/2025 às 16:55:54	Agradeço a atenção dispensada. Finalizo desejando uma boa tarde e um excelente fim de semana a todos.
Sistema	14/07/2025 às 11:15:08	Prezados Licitantes, bom dia.
Sistema	14/07/2025 às 11:45:13	Senhores, considerando os documentos de Habilitação apresentados pelo Licitante E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, informo que os mesmos atendem a todas as exigências estabelecidas no instrumento convocatório.
Sistema	14/07/2025 às 11:45:42	Nesse sentido, este Pregoeiro decide pela HABILITAÇÃO do licitante E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47.
Sistema	14/07/2025 às 12:02:53	Senhores, em breve estarei habilitando a licitante no próprio sistema. Solicito atenção.

Eventos da compra

Data/Hora	Descrição
30/06/2025 às 10:00:02	Abertura da sessão pública
30/06/2025 às 14:06:48	Início da etapa de julgamento de propostas

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Item 4 - Notebook

Notebook Tela: Superior A 14POL, Interatividade Da Tela: Sem Interatividade, Memória Ram: Superior A 8GB, Núcleos Por Processador: 4 A 8, Armazenamento Hdd: 480 A 1.000GB, Armazenamento Ssd: Minimo De 1 Tb, Bateria: Definido Pelo Fabricante, Alimentação: Bivolt Automática, Sistema Operacional: Proprietário, Garantia On Site: 36MESES

Quantidade:	20	Valor estimado:	R$ 17.305,3200 (unitário)
Unidade de fornecimento:	Unidade		R$ 346.106,4000 (total)
Intervalo mínimo entre lances:	R$ 10,0000	Situação:	Aberto para recursos
Critério de julgamento:	Menor Preço		

Aceito e Habilitado por CPF ***.231.***-*9 - MAURICIO ARAUJO MEDEIROS para E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, melhor lance: R$ 19.000,0000 (unitário) / R$ 380.000,0000 (total), valor negociado: R$ 16.990,0000 (unitário) / R$ 339.800,0000 (total)

Propostas do Item 4

Benefício Me/Epp: Conforme Art. 3ª da Lei Complementar nª 123, de 14 de dezembro de 2006
Programa de integridade: Conforme termos previsos na Lei nª 14.133/2021 e no Decreto nª 12.304/2024

Fornecedor	Valor ofertado	Situação
42.816.024/0001-63 - 42.816.024 LEONARDO CATIVO SOUSA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: AM	R$ 10.000,0000 (unitário) R$ 200.000,0000 (total)	Proposta desclassificada

Marca/Fabricante:	Conf TR				
Modelo/versão:	Conf TR				
Valor proposta:	R$ 10.000,0000 (unitário) R$ 200.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	20

Fornecedor	Valor ofertado	Situação
51.750.663/0001-64 - 51.750.663 THIERREZ MATHEUS ALVES SALES Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: DF	R$ 50.000,0000 (unitário) R$ 1.000.000,0000 (total)	-

Marca/Fabricante:	Notebook				
Modelo/versão:	Notebook				
Valor proposta:	R$ 50.000,0000 (unitário) R$ 1.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	20

Fornecedor	Valor ofertado	Situação
39.577.541/0001-12 - A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 10.000,0000 (unitário) R$ 200.000,0000 (total)	Proposta desclassificada

Marca/Fabricante:	Dell				
Modelo/versão:	Dell				
Valor proposta:	R$ 10.000,0000 (unitário) R$ 200.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	20

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Fornecedor	Valor ofertado	Situação
01.319.640/0001-21 - AJL INDUSTRIA E COMERCIO LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: AM	R$ 31.650,0000 (unitário) R$ 633.000,0000 (total)	-

Marca/Fabricante: LENOVO
Modelo/versão: THINKPAD P16V
Valor proposta: R$ 45.000,0000 (unitário) R$ 900.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

52.593.051/0001-78 - CENTERDATA COMERCIO DE PRODUTOS DE INFORMATICA E SERVICOS LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 45.000,0000 (unitário) R$ 900.000,0000 (total)	-

Marca/Fabricante: Lenovo
Modelo/versão: Lenovo
Valor proposta: R$ 45.000,0000 (unitário) R$ 900.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

36.770.097/0001-69 - CIB EMPREENDIMENTOS IMOBILIARIOS LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: MG	R$ 101.190.000,0000 (unitário) R$ 2.023.800.000,0000 (total)	-

Marca/Fabricante: Notebook Tela: Superior A 14POL, Interatividade Da
Modelo/versão: Notebook Tela: Superior A 14POL, Interatividade Da
Valor proposta: R$ 101.190.000,0000 (unitário) R$ 2.023.800.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

05.778.325/0005-47 - E.R. SOLUCOES INFORMATICA LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: ES	R$ 19.000,0000 (unitário) R$ 380.000,0000 (total)	Fornecedor habilitado

Marca/Fabricante: LENOVO
Modelo/versão: P16v Intel GEN 2
Valor proposta: R$ 19.000,0000 (unitário) R$ 380.000,0000 (total) Valor negociado: R$ 16.990,0000 (unitário) R$ 339.800,0000 (total) Quantidade ofertada: 20

53.571.459/0001-01 - ELLOELLA DISTRIBUIDORA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: PE	R$ 34.678,9800 (unitário) R$ 693.579,6000 (total)	-

Marca/Fabricante: LENOVO
Modelo/versão: THINKPAD P16V
Valor proposta: R$ 38.532,2000 (unitário) R$ 770.644,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

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Fornecedor	Valor ofertado	Situação
35.689.930/0001-89 - HOUSE LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: AM	R$ 8.000,0000 (unitário) R$ 160.000,0000 (total)	Proposta desclassificada

Marca/Fabricante: Dell
Modelo/versão: Conforme TR
Valor proposta: R$ 8.000,0000 (unitário) R$ 160.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

20.380.331/0001-01 - MR COMERCIO DE PECAS E ACESSORIOS LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: AM	R$ 5.000,0000 (unitário) R$ 100.000,0000 (total)	Proposta desclassificada

Marca/Fabricante: NOT ASPIRE 3 I3
Modelo/versão: 3 I3
Valor proposta: R$ 5.000,0000 (unitário) R$ 100.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

32.872.401/0001-28 - PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 13.980,0000 (unitário) R$ 279.600,0000 (total)	Proposta desclassificada

Marca/Fabricante: Lenovo
Modelo/versão: ThinkPad P16 V
Valor proposta: R$ 13.990,0000 (unitário) R$ 279.800,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

47.172.975/0001-60 - RENATO PALLADINO DE FREITAS 41131128869 Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: SP	R$ 24.990,0000 (unitário) R$ 499.800,0000 (total)	-

Marca/Fabricante: Dell
Modelo/versão: Mobile Precision
Valor proposta: R$ 25.000,0000 (unitário) R$ 500.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

30.948.812/0001-24 - RL INFORMATICA LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: PE	R$ 31.640,0000 (unitário) R$ 632.800,0000 (total)	-

Marca/Fabricante: Lenovo
Modelo/versão: P16v Gen 2
Valor proposta: R$ 35.000,0000 (unitário) R$ 700.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

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Fornecedor	Valor ofertado	Situação
53.276.627/0001-36 - SB EMPREENDIMENTOS LTDA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: MA	R$ 15.000,0000 (unitário) R$ 300.000,0000 (total)	Proposta desclassificada

Marca/Fabricante: dell
Modelo/versão: Notebook Inspiron 16 Plus
Valor proposta: R$ 15.000,0000 (unitário) R$ 300.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

49.264.057/0001-97 - T. D. A. S. Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 25.489,0000 (unitário) R$ 509.780,0000 (total)	-

Marca/Fabricante: Notebook
Modelo/versão: pc
Valor proposta: R$ 25.489,0000 (unitário) R$ 509.780,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

03.619.767/0005-15 - TORINO INFORMATICA LTDA.. Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: ES	R$ 25.000,0000 (unitário) R$ 500.000,0000 (total)	-

Marca/Fabricante: HP
Modelo/versão: Zbook HP
Valor proposta: R$ 30.000,0000 (unitário) R$ 600.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

28.880.531/0002-16 - TR TECNOLOGIA E COMERCIO LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: ES	R$ 29.980,0000 (unitário) R$ 599.600,0000 (total)	-

Marca/Fabricante: NOTEBOOK DELL CORE ULTRA 7 32GB 1TB WIN11 PRO
Modelo/versão: NOTEBOOK DELL CORE ULTRA 7 32GB 1TB WIN11 PRO
Valor proposta: R$ 32.000,0000 (unitário) R$ 640.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

41.680.761/0001-19 - TREER TECNOLOGY LTDA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: MG	R$ 14.000,0000 (unitário) R$ 280.000,0000 (total)	Proposta desclassificada

Marca/Fabricante: Lenovo
Modelo/versão: Thinkpad
Valor proposta: R$ 14.000,0000 (unitário) R$ 280.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

Lances do Item 4

Data/hora	Participante	Lance
30/06/2025 às 13:23:33	30.948.812/0001-24	R$ 31.990,0000
30/06/2025 às 13:23:33	53.571.459/0001-01	R$ 34.678,9800
30/06/2025 às 13:24:48	01.319.640/0001-21	R$ 31.650,0000

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Data/hora	Participante	Lance
30/06/2025 às 13:24:48	30.948.812/0001-24	R$ 31.640,0000
30/06/2025 às 13:27:56	03.619.767/0005-15	R$ 25.000,0000
30/06/2025 às 13:30:53	47.172.975/0001-60	R$ 24.990,0000
30/06/2025 às 13:31:07	28.880.531/0002-16	R$ 29.980,0000
30/06/2025 às 13:31:14	32.872.401/0001-28	R$ 13.980,0000

Mensagens do chat do Item 4

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 13:13:30	A abertura do item 4 para lances está agendada para daqui a 10 minutos. Mantenham-se conectados.
Sistema	30/06/2025 às 13:23:30	O item 4 foi aberto. Solicitamos o envio de lances.
Sistema	30/06/2025 às 13:33:31	O item 4 está aguardando decisão de reinício ou encerramento da etapa aberta pelo comprador.
Sistema	30/06/2025 às 14:05:34	O item 4 está encerrado.
Sistema para o participante 20.380.331/0001-01	01/07/2025 às 10:41:40	Sr. Fornecedor MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01, você foi convocado para enviar anexos para o item 4. Prazo para encerrar o envio: 12:46:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Pelo participante 20.380.331/0001-01	01/07/2025 às 10:43:12	Prezado Sr. Pregoeiro, Durante a fase de lances, identificamos um equívoco no valor ofertado para o Item 04, o que inviabiliza o seu fornecimento nas condições registradas. Diante disso, foi inserido, de forma equivocada, um lance que tornou a proposta inexequível. Assim, solicitamos, respeitosamente, a desclassificação do referido item na fase de aceitação, permitindo a convocação do licitante subsequente. Pedimos desculpas pelo transtorno e
Sistema para o participante 20.380.331/0001-01	01/07/2025 às 10:53:35	Prezado Licitante, Bom dia. Agradeço a informação. Acato a solicitação e informo que a proposta será devidamente recusada.
Sistema para o participante 20.380.331/0001-01	01/07/2025 às 10:57:20	O item 4 teve a convocação para envio de anexo(s) CANCELADA às 10:57:20 de 01/07/2025. Anexos vinculados à esta convocação e enviados pelo fornecedor MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01 foram excluídos. Motivo: Proposta desclassificada.
Sistema para o participante 35.689.930/0001-89	01/07/2025 às 10:58:01	Sr. Fornecedor HOUSE LTDA, CNPJ 35.689.930/0001-89, você foi convocado para enviar anexos para o item 4. Prazo para encerrar o envio: 13:00:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Sistema para o participante 35.689.930/0001-89	01/07/2025 às 13:00:02	O item 4 teve a convocação para envio de anexos encerrada às 13:00:02 de 01/07/2025. Nenhum anexo foi enviado pelo fornecedor HOUSE LTDA, CNPJ 35.689.930/0001-89.
Sistema	01/07/2025 às 15:08:25	O desempate por disputa final do art. 60 da lei 14.133/2021 foi iniciado para o item 4. Fornecedores ME/EPP declarantes que apresentaram lance no valor de R$ 10.000,0000 poderão enviar um lance único e fechado até às 15:13:25 do dia 01/07/2025.
Sistema	01/07/2025 às 15:13:26	O desempate por disputa final do art. 60 da lei 14.133/2021 do item 4 foi encerrado. Nenhum fornecedor convocado registrou lance.
Sistema	01/07/2025 às 15:13:26	O item 4 está encerrado.
Sistema	01/07/2025 às 15:13:26	O desempate ref. ao inciso IV do Art. 60 da lei 14.133/2021 foi realizado para o item 4. Foi identificada melhor proposta para o fornecedor 39.577.541/0001-12.

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Responsável	Data/Hora	Mensagem
Sistema para o participante 39.577.541/0001-12	01/07/2025 às 15:16:16	Sr. Fornecedor A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA, CNPJ 39.577.541/0001-12, você foi convocado para enviar anexos para o item 4. Prazo para encerrar o envio: 17:20:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Sistema para o participante 39.577.541/0001-12	01/07/2025 às 17:20:00	O item 4 teve a convocação para envio de anexos encerrada às 17:20:00 de 01/07/2025. Nenhum anexo foi enviado pelo fornecedor A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA, CNPJ 39.577.541/0001-12.
Sistema para o participante 42.816.024/0001-63	02/07/2025 às 10:11:38	Sr. Fornecedor 42.816.024 LEONARDO CATIVO SOUSA, CNPJ 42.816.024/0001-63, você foi convocado para enviar anexos para o item 4. Prazo para encerrar o envio: 12:15:00 do dia 02/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital. .
Sistema para o participante 42.816.024/0001-63	02/07/2025 às 12:15:00	O item 4 teve a convocação para envio de anexos encerrada às 12:15:00 de 02/07/2025. Nenhum anexo foi enviado pelo fornecedor 42.816.024 LEONARDO CATIVO SOUSA, CNPJ 42.816.024/0001-63.
Sistema para o participante 32.872.401/0001-28	02/07/2025 às 12:41:52	Sr. Fornecedor PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA, CNPJ 32.872.401/0001-28, você foi convocado para enviar anexos para o item 4. Prazo para encerrar o envio: 14:45:00 do dia 02/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Sistema para o participante 32.872.401/0001-28	02/07/2025 às 14:45:00	O item 4 teve a convocação para envio de anexos encerrada às 14:45:00 de 02/07/2025. Nenhum anexo foi enviado pelo fornecedor PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA, CNPJ 32.872.401/0001-28.
Sistema para o participante 41.680.761/0001-19	02/07/2025 às 14:53:20	Sr. Fornecedor TREER TECNOLOGY LTDA, CNPJ 41.680.761/0001-19, você foi convocado para enviar anexos para o item 4. Prazo para encerrar o envio: 16:55:00 do dia 02/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Pelo participante 41.680.761/0001-19	02/07/2025 às 14:55:43	Boa tarde
Pelo participante 41.680.761/0001-19	02/07/2025 às 16:16:20	Prezado (a) pregoeiro (a) verificamos e o produto cotado não atende o TR, sendo assim, solicitamos nossa desclassificação.
Sistema para o participante 41.680.761/0001-19	02/07/2025 às 16:48:23	Grato pela informação senhor licitante. Acato a solicitação e informo que a proposta será devidamente recusada.
Sistema para o participante 41.680.761/0001-19	02/07/2025 às 16:49:17	O item 4 teve a convocação para envio de anexo(s) CANCELADA às 16:49:17 de 02/07/2025. Anexos vinculados à esta convocação e enviados pelo fornecedor TREER TECNOLOGY LTDA, CNPJ 41.680.761/0001-19 foram excluídos. Motivo: Proposta desclassificada.
Sistema para o participante 53.276.627/0001-36	03/07/2025 às 10:14:50	Sr. Fornecedor SB EMPREENDIMENTOS LTDA, CNPJ 53.276.627/0001-36, você foi convocado para enviar anexos para o item 4. Prazo para encerrar o envio: 12:16:00 do dia 03/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Sistema para o participante 53.276.627/0001-36	03/07/2025 às 10:18:30	Prezado Licitante, bom dia.
Sistema para o participante 53.276.627/0001-36	03/07/2025 às 10:20:48	Verificou-se que a sua empresa encontra-se com ocorrência de impedimento de licitar vigente, o que afronta diretamente o subitem 5.6 e 5.6.4. do Edital.
Sistema para o participante 53.276.627/0001-36	03/07/2025 às 10:21:40	Assim, com conformidade aos subitens mencionados e o subitem 10.3.5 do Edital, a proposta será recusada.
Sistema para o participante 53.276.627/0001-36	03/07/2025 às 10:22:45	O item 4 teve a convocação para envio de anexo(s) CANCELADA às 10:22:45 de 03/07/2025. Anexos vinculados à esta convocação e enviados pelo fornecedor SB EMPREENDIMENTOS LTDA, CNPJ 53.276.627/0001-36 foram excluídos. Motivo: Proposta desclassificada.

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Responsável	Data/Hora	Mensagem
Sistema para o participante 05.778.325/0005-47	03/07/2025 às 10:24:49	Senhor Licitante, bom dia.
Pelo participante 05.778.325/0005-47	03/07/2025 às 10:28:10	Bom dia, Sr. Pregoeiro!
Sistema para o participante 05.778.325/0005-47	03/07/2025 às 10:29:24	Verificou-se que sua proposta para o Item 4 encontra-se acima do valor estimado pela Administração, apresentado no Quadro-Resumo do Processo de Compra Nª 195.2025.SCOMS.1609045.2025.001317, disponível no Portal do MPAM, no endereço eletrônico já apresentado nesse chat.
Pelo participante 05.778.325/0005-47	03/07/2025 às 10:30:45	Iremos conceder desconto!
Pelo participante 05.778.325/0005-47	03/07/2025 às 10:31:01	Precisa que atualize no sistema ou podemos enviar em nossa proposta direto?
Sistema para o participante 05.778.325/0005-47	03/07/2025 às 10:31:13	Nesse sentido, V. Sa. poderia ajustar o preço de sua Proposta para 17.000,00?
Pelo participante 05.778.325/0005-47	03/07/2025 às 10:32:02	Podemos chegar em R$16990,00
Sistema para o participante 05.778.325/0005-47	03/07/2025 às 10:32:55	V. Sa. será convocada para envio de proposta no prazo de 2 (duas) horas. Caso concorde com o ajuste, basta enviar a proposta com o preço ajustado à negociação. Caso contrário, para garantir celeridade ao procedimento, solicito informar o desinteresse. Obrigado!
Pelo participante 05.778.325/0005-47	03/07/2025 às 10:34:05	Iremos providenciar o envio
Sistema para o participante 05.778.325/0005-47	03/07/2025 às 10:34:13	Prezados, atualizada a página, vi que convergimos nos preços, de forma que o preço proposto ficou melhor do que o solicitado por este Pregoeiro.
Sistema para o participante 05.778.325/0005-47	03/07/2025 às 10:34:44	Assim, informo que V. Sa. será convocada para envio de proposta ajustada ao preço de R$ 16.990,00.
Sistema para o participante 05.778.325/0005-47	03/07/2025 às 10:35:29	Agradeço a disponibilidade de negociação. Solicito atenção à convocação.
Sistema para o participante 05.778.325/0005-47	03/07/2025 às 10:37:35	Sr. Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, você foi convocado para enviar anexos para o item 4. Prazo para encerrar o envio: 12:40:00 do dia 03/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Pelo participante 05.778.325/0005-47	03/07/2025 às 11:24:38	O item 4 teve a convocação para envio de anexos encerrada às 11:24:38 de 03/07/2025. 3 anexos foram enviados pelo fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47.
Sistema para o participante 05.778.325/0005-47	08/07/2025 às 14:43:22	Prezado Licitante, boa tarde.
Pelo participante 05.778.325/0005-47	08/07/2025 às 14:43:59	Boa tarde, Sr. Pregoeiro!
Sistema para o participante 05.778.325/0005-47	08/07/2025 às 14:44:24	Para aceitação da proposta no sistema, precisamos ajustar a proposta nos termos da negociação realizada. Solicito atenção.
Sistema para o participante 05.778.325/0005-47	08/07/2025 às 14:46:05	Sr. Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, você foi convocado para negociação de valor do item 4. Justificativa: Solicito ajustar o valor da proposta inicial ao negociado via chat do sistema ao preço unitário sugerido. .

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Responsável	Data/Hora	Mensagem
Pelo participante 05.778.325/0005-47	08/07/2025 às 14:46:43	O item 4 teve a negociação de valor encerrada pelo fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47. A negociação do item 4 foi aceita pelo fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, tendo informado R$ 16.990,0000.
Sistema para o participante 05.778.325/0005-47	08/07/2025 às 14:47:20	Agradeço a atenção e diligência.
Pelo participante 05.778.325/0005-47	08/07/2025 às 14:47:28	Conforme solicitado, o valor foi alterado no sistema.
Sistema	08/07/2025 às 14:48:00	O item 4 está na etapa de julgamento de proposta no período de intenção de recursos, com acréscimo de 10 minutos a partir de agora - até 08/07/2025 14:58:00.
Sistema	14/07/2025 às 12:05:43	O item 4 está na etapa de habilitação de fornecedores no período de intenção de recursos, com acréscimo de 10 minutos a partir de agora - até 14/07/2025 12:15:43.
Sistema	14/07/2025 às 15:18:10	A fase de recurso do item 4 está aberta até 17/07/2025.

Eventos do Item 4

Data/Hora	Descrição
30/06/2025 às 13:23:30	Item aberto para lances.
30/06/2025 às 13:33:31	Item aguardando decisão sobre reinício ou encerramento da etapa aberta.
30/06/2025 às 14:05:34	Item com etapa aberta encerrada.
30/06/2025 às 14:05:34	Item encerrado para lances.
01/07/2025 às 10:41:40	Fornecedor MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01 convocado para o envio de anexo. Prazo para encerrar o envio: 12:46:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
01/07/2025 às 10:57:20	Fornecedor MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01 teve a proposta desclassificada, melhor lance: R$ 5.000,0000. Motivo: Proposta recusada a pedido da licitante e em conformidade ao disposto no subitem 10.3.3. do Edital..
01/07/2025 às 10:58:01	Fornecedor HOUSE LTDA, CNPJ 35.689.930/0001-89 convocado para o envio de anexo. Prazo para encerrar o envio: 13:00:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
01/07/2025 às 15:06:43	Fornecedor HOUSE LTDA, CNPJ 35.689.930/0001-89 teve a proposta desclassificada, melhor lance: R$ 8.000,0000. Motivo: Proposta recusada, conforme subitem 9.1 c/c 10.3.5. do Edital..
01/07/2025 às 15:08:25	Retorno de item do julgamento para a etapa de desempate por disputa final do art. 60 da lei 14.133/2021.
01/07/2025 às 15:08:25	Convocados os fornecedores me/epp declarantes para a disputa final do art. 60 da lei 14.133/2021 que apresentaram lance no valor de R$ 10.000,0000.
01/07/2025 às 15:13:26	Item com etapa de disputa final do art. 60 da lei 14.133/2021 encerrada.
01/07/2025 às 15:13:26	Item encerrado para lances.
01/07/2025 às 15:16:16	Fornecedor A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA, CNPJ 39.577.541/0001-12 convocado para o envio de anexo. Prazo para encerrar o envio: 17:20:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
01/07/2025 às 18:33:32	Fornecedor A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA, CNPJ 39.577.541/0001-12 teve a proposta desclassificada, melhor lance: R$ 10.000,0000. Motivo: Proposta recusada, conforme subitem 9.1 c/c 10.3.5. do Edital..

Relatório PNCP - Julgamento/Habilitação ITEM 4 (1676293) SEI 2025.001317 / pg. 2017

Data/Hora	Descrição
02/07/2025 às 10:11:38	Fornecedor 42.816.024 LEONARDO CATIVO SOUSA, CNPJ 42.816.024/0001-63 convocado para o envio de anexo. Prazo para encerrar o envio: 12:15:00 do dia 02/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital. .
02/07/2025 às 12:37:52	Fornecedor 42.816.024 LEONARDO CATIVO SOUSA, CNPJ 42.816.024/0001-63 teve a proposta desclassificada, melhor lance: R$ 10.000,0000. Motivo: Proposta recusada conforme subitem 9.1 c/c 10.3.5. do Edital..
02/07/2025 às 12:41:52	Fornecedor PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA, CNPJ 32.872.401/0001-28 convocado para o envio de anexo. Prazo para encerrar o envio: 14:45:00 do dia 02/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
02/07/2025 às 14:52:37	Fornecedor PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA, CNPJ 32.872.401/0001-28 teve a proposta desclassificada, melhor lance: R$ 13.980,0000. Motivo: Proposta recusada conforme subitem 9.1 c/c 10.3.5. do Edital..
02/07/2025 às 14:53:20	Fornecedor TREER TECNOLOGY LTDA, CNPJ 41.680.761/0001-19 convocado para o envio de anexo. Prazo para encerrar o envio: 16:55:00 do dia 02/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
02/07/2025 às 16:49:17	Fornecedor TREER TECNOLOGY LTDA, CNPJ 41.680.761/0001-19 teve a proposta desclassificada, melhor lance: R$ 14.000,0000. Motivo: Proposta recusada conforme subitem 9.1 c/c 10.3.5. do Edital..
03/07/2025 às 10:14:50	Fornecedor SB EMPREENDIMENTOS LTDA, CNPJ 53.276.627/0001-36 convocado para o envio de anexo. Prazo para encerrar o envio: 12:16:00 do dia 03/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
03/07/2025 às 10:22:45	Fornecedor SB EMPREENDIMENTOS LTDA, CNPJ 53.276.627/0001-36 teve a proposta desclassificada, melhor lance: R$ 15.000,0000. Motivo: Proposta recusada conforme subitens 5.6. e 5.6.4. c/c subitem 10.3.5. do Instrumento Convocatório..
03/07/2025 às 10:37:35	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 convocado para o envio de anexo. Prazo para encerrar o envio: 12:40:00 do dia 03/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
03/07/2025 às 11:24:38	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 finalizou o envio de anexo.
08/07/2025 às 14:46:05	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 convocado para negociação de valor.
08/07/2025 às 14:46:43	Negociação encerrada. Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 informou R$ 16.990,0000.
08/07/2025 às 14:48:00	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 teve a proposta aceita, melhor lance: R$ 19.000,0000, valor negociado: R$ 16.990,0000. Motivo: Aceitação da Proposta em conformidade ao Parecer Nª 19.2025.SIET.1665305.2025.001317 e ao Item 10 do Edital do certame. .
08/07/2025 às 14:56:41	Fornecedor RL INFORMATICA LTDA, CNPJ 30.948.812/0001-24 registra a intenção de recurso na fase julgamento.
14/07/2025 às 12:05:43	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 foi habilitado.
14/07/2025 às 12:10:58	Fornecedor RL INFORMATICA LTDA, CNPJ 30.948.812/0001-24 registra a intenção de recurso na fase habilitação.
14/07/2025 às 15:18:10	Encerramento da sessão 1 de julgamento / habilitação.

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MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

RELATÓRIO DE LICITAÇÃO Nº 23.2025.CPL.1676202.2025.001317

RELATÓRIO CIRCUNSTANCIADO REFERENTE AO PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ/SRP

PROCESSO SEI Nº 2025.001317

Excelentíssimo Senhor Subprocurador-Geral de Justiça para Assuntos Administrativos,

O Pregoeiro, senhor **Maurício Araújo Medeiros**, designado por força da PORTARIA 606/2025/SUBADM, de 04/06/2025 (doc. 1640921), vem apresentar e submeter à apreciação de Vossa Excelência o **relatório circunstanciado parcial, referente aos itens 1, 2 e 4** do **Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ/SRP**, tipo **MENOR PREÇO POR ITEM**, concernente ao **Processo SEI N.º 2025.001317**, que tem por objeto o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.*

1. DA EVOLUÇÃO DOS AUTOS

A evolução dos autos ocorreu conforme descrição e datas constantes no **Histórico do Processo 2025.001317,** disponível para consulta na rotina "Consultar Andamento".

2. DA PUBLICIDADE

O Aviso da Licitação foi publicado: no *Compras.gov*, em 11/06/2025 (doc. 1677171); no matutino local “Jornal do Commercio”, Edição n.º 44.318, de 12/06/2025 (doc. 1677170); no Diário Oficial Eletrônico do Ministério Público do Estado do Amazonas – DOMPE, Edição n.º 3101, no dia 11/06/2025 (doc. 1648705) e no sítio institucional do MPE/AM (www.mpam.mp.br).

3. DA SESSÃO PÚBLICA

3.1. Do Credenciamento – Os licitantes credenciaram-se na Secretaria de Logística e Tecnologia de Informação – SLTI, do Ministério do Planejamento, Orçamente e Gestão, através das regras do sistema *Compras.gov*, no sítio eletrônico https://www.gov.br/compras/pt-br.

3.2. Da Proposta – As propostas foram enviadas pelos licitantes, através da internet, desde 13/06/2025 até a data e hora marcadas para a abertura da sessão, a saber, dia 30/06/2025, às 10h (horário de Brasília/DF).

3.3. Da Fase de Lances – Iniciada a disputa, os interessados tiveram a oportunidade de propor, em lances, condições mais favoráveis que as primeiras, o que ocorreu de fato, encerrando-se a fase com propostas mais vantajosas para a Administração, conforme registrado nos **Termos de Julgamento da Sessão** (doc. 1676291), para o Item 1; **Termos de Julgamento da Sessão** (doc. 1676292), para o Item 2; e **Termos de Julgamento da Sessão** (doc. 1676293), para o Item 3.

3.4. Da Aceitação das Propostas – Logo em seguida, o Pregoeiro convocou os licitantes mais bem colocadas na ordem de classificação dos lances, para envio de suas propostas ajustadas aos seus últimos lances, acompanhadas dos documentos complementares, para análise.

Uma vez observado o cumprimento dos prazos fixados e, também, dos aspectos formais reclamados pela Instituição, e diante da necessidade de análise técnica das propostas apresentadas, foram os documentos submetidos ao exame d o **Setor de Infraestrutura e Telecomunicação - SIET,** para análise e manifestação, nos termos do item 10.2 do instrumento convocatório (doc. 1647931).

Após algumas desclassificações de propostas, nos termos expostos nos **Termos de Julgamento da Sessão** supramencionados, com base na análise técnica realizada pelo **Setor de Infraestrutura e Telecomunicação - SIET (**Parecer Nº 15.2025.SIET.1661793.2025.001317 para o Item 1, Parecer Nº 21.2025.SIET.1668662.2025.001317 para o Item 2 e Parecer Nº 19.2025.SIET.1665305.2025.001317 para o Item 4), o Pregoeiro, com auxílio da equipe de apoio, promoveu à **aceitação** das seguintes propostas apresentadas pelo licitante **E.R. SOLUCOES INFORMATICA LTDA.** , CNPJ (MF) n.º 05.778.325/0005-47, abaixo elencadas:

- **Item 1 (doc. 1661819)** no Valor Unitário de **R$ 9.880,00** (*nove mil oitocentos e oitenta reais*) e Valor Total de **R$ 9.880.000,00** (*nove milhões oitocentos e oitenta mil reais*)**;**
- **Item 2 (doc. 1667752)** no Valor Unitário de **R$ 20.300,00** (*vinte mil e trezentos reais*) e Valor Total de **R$ 1.015.000,00** (*um milhão quinze mil reais*); e
- **Item 4 (doc. 1663839)** no Valor Unitário de **R$ 16.990,00** (*dezesseis mil novecentos e noventa reais*) no Valor Total de **R$**

339.800,00 (*trezentos e trinta e nove mil e oitocentos reais*).

3.5. Da Habilitação – Dando regular prosseguimento ao feito, o Pregoeiro e equipe de apoio passaram à verificação dos documentos de habilitação do Licitante acima destacada (doc. 1676241).

Desta feita, procedeu-se à fase de julgamento das condições de habilitação (doc. 1676241), utilizando-se, inclusive, das informações do **Sistema de Cadastro de Fornecedores – SICAF** do Compras.gov, verificando-se, sobretudo, as condições do licitante quanto à ausência de sanções pela Administração Pública, não sendo constatados registros que indicassem restrições à contratação.

Sobre o exame das condições do licitante, verificou-se à ausência de sanções pela Administração Pública, no SICAF do *Comprasnet*, bem como na Relação de Empresas com Sanção Administrativa em Vigor, do **TRIBUNAL DE CONTAS DO ESTADO DO AMAZONAS – TCE**, na Relação de Licitantes Inidôneos do **TRIBUNAL DE CONTAS DA UNIÃO – TCU,** na Lista de Empresas Suspensas/Impedidas da **COMISSÃO GERAL DE LICITAÇÃO DO ESTADO DO AMAZONAS – CGL** , no Cadastro Nacional de Empresas Inidôneas e Suspensas (CEIS), da **CONTROLADORIA GERAL DA UNIÃO – CGU**, no Cadastro Nacional de Condenações Civis por Ato de Improbidade Administrativa (CNCIA) do **CONSELHO NACIONAL DE JUSTIÇA – CNJ** e na Relação de pessoas jurídicas impedidas de contratar com a Administração Pública da **SEFAZ-AM**, **não** sendo constatados registros que indicassem restrições à contratação.

Além disso, o Pregoeiro e equipe de apoio verificaram a autenticidade das certidões negativa (ou positiva com efeitos de negativa) de débitos mediante SICAF, bem como da de ausência de distribuição de feitos de falência ou recuperação judicial, junto à Justiça Estadual de domicílio do licitante. De igual modo, procedeu-se com os demais documentos de habilitação das interessadas que permitiam a convalidação eletrônica, conforme consta dos autos.

Cabe registrar que, com o objetivo de atender aos princípios de simplificação e racionalização de serviços públicos digitais, presentes nas Leis nº 12.965/14 e nº 13.460/18, e no Decreto nº 8.638/16, o **Tribunal de Contas da União** passou a disponibilizar ferramenta que permite a consulta consolidada de pessoas jurídicas que reúne, em relatório único, os Licitantes Inidôneos do TCU, CNIA - Cadastro Nacional de Condenações Cíveis por Ato de Improbidade Administrativa e Inelegibilidade do CNJ; Cadastro Nacional de Empresas Inidôneas e Suspensas e CNEP - Cadastro Nacional de Empresas Punidas ambos do Portal da Transparência. Assim, a Pregoeiro promoveu a juntada da **CONSULTA CONSOLIDADA DE PESSOA JURÍDICA** do licitante aos autos.

Isto posto, concluída a análise dos documentos habilitatórios, conforme item 11 do instrumento convocatório, procedeu-se à **HABILITAÇÃO** do licitante **E.R. SOLUCOES INFORMATICA LTDA.** , CNPJ (MF) n.º 05.778.325/0005-47, declarando-a vencedora, nos termos do subitem 11.32 do Instrumento Convocatório.

4. DA FASE RECURSAL

Logo após, concedido prazo para registro de intenção de recurso por parte dos demais licitantes, oportunidade em que manifestaram intenção de recurso os seguintes licitantes

a) **TREER TECNOLOGY LTDA**, CNPJ 41.680.761/0001-19 para o Item 1;

b) **TREER TECNOLOGY LTDA**, CNPJ 41.680.761/0001-19 e **RL INFORMATICA LTDA**, CNPJ 30.948.812/0001-24 para o Item 2; e

c) **RL INFORMATICA LTDA**, CNPJ 30.948.812/0001-24 para o Item 4.

Ocorre que, estabelecido o prazo final para apresentação das razões recursais em 17/07/2025, transcorreu-se, *in albis*, o referido prazo sem qualquer registro das razões das irresignadas, declarando-se, portanto, deserta a presente etapa.

5. DA ECONOMICIDADE

Destaque-se que o valor estimado para aquisição do objeto deste certame foi de **R$ 16.631.944,90** (*dezesseis milhões, seiscentos e trinta e um mil novecentos e quarenta e quatro reais e noventa centavos*), conforme **Quadro - Resumo do Processo de Compra Nº 195.2025.SCOMS.1609045.2025.001317**.

Por se tratar de um relatório parcial da sessão do **Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ/SRP** referente aos itens 1, 2 e 4, considerando o valor estimado para contratação, subtraindo-se o valor total referente ao Item 3, em andamento, obtemos o total de **R$ 13.015.987,90** (*treze milhões, quinze mil novecentos e oitenta e sete reais e noventa centavos*).

Assim, considerando o valor a ser adjudicado para os Itens 1, 2 e 4, somados, de **R$ 11.234.800,00** (*onze milhões, duzentos e trinta e quatro mil e oitocentos reais*)**,** a realização deste Pregão significou uma **economia parcial de R$ 1.781.187,90** (*um milhão, setecentos e oitenta e um mil cento e oitenta e sete reais e noventa centavos*), ou seja, uma **redução de aproximadamente 13,68% do valor parcial estimado pela Administração**.

É o Relatório.

Manaus, 21 de julho de 2025.

Maurício Araújo Medeiros

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 21/07/2025, às 15:08, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1676202** e o código CRC **A987CEE7**.

2025.001317 v21

MINUTA Nº DESPACHO DE ADJUDICAÇÃO E HOMOLOGAÇÃO

*** MINUTA DE DOCUMENTO**

PROCESSO SEI N.º 2025.001317

Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP

A D J U DI C A Ç Ã O E H O M O L O G A Ç Ã O

C O N S I D E R A N D O a solicitação constante do Ofício Nº 41.2025.DTIC.1566526.2025.001317, bem como o teor do Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317 e Anexos;

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 21/07/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a *formação de ata de registro de preços para aquisição de gêneros alimentícios (açúcar, café e leite) a serem disponibilizados pelo Almoxarifado, localizado no edifício-sede da PGJ, a fim de garantir o aprimoramento da distribuição dos bens de consumo existentes em estoque, melhorando a qualidade de atendimento das demandas das diversas unidades da Procuradoria-Geral de Justiça, por um período estimado de 12 meses,* quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos*;*

CONSIDERANDO a aceitação das propostas de preço e habilitação da empresa **E.R. SOLUCOES INFORMATICA LTDA.** , CNPJ (MF) n.º 05.778.325/0005-47, para: **a) Item 1** - no Valor Total de **R$ 9.880.000,00** (*nove milhões oitocentos e oitenta mil reais*)**; b) Item 2 -** Valor Total de **R$ 1.015.000,00** (*um milhão quinze mil reais*)**;** e **c) Item 4** - no Valor Total de **R$ 339.800,00** (*trezentos e trinta e nove mil e oitocentos reais*).

CONSIDERANDO o Relatório Parcial de Licitação Nº 23.2025.CPL.1676202.2025.001317, referente aos itens 1, 2 e 4, no qual consta que a realização do Pregão significou uma economia de **R$ 1.781.187,90** (*um milhão, setecentos e oitenta e um mil cento e oitenta e sete reais e noventa centavos*), ou seja, uma **redução de aproximadamente 13,68% do valor parcial estimado pela Administração**.

CONSIDERANDO o teor da Lei Federal N.º 14.133, de 01.04.2021 e do Ato n.º 008/2024/PGJ;

CONSIDERANDO a **não** interposição de Recurso por parte dos interessados, no prazo e condições de que trata o art. 165, incisos I e II, da Lei Federal N.º 14.133/2021;

R E S O L V E:

I – **ADJUDICAR** o objeto do certame à empresa **E.R. SOLUCOES INFORMATICA LTDA.**, CNPJ (MF) n.º 05.778.325/0005-47, para: **a) Item 1** - no Valor Total de **R$ 9.880.000,00** (*nove milhões oitocentos e oitenta mil reais*)**; b) Item 2 -** Valor Total de **R$ 1.015.000,00** (*um milhão quinze mil reais*); e **c) Item 4** - no Valor Total de **R$ 339.800,00** (*trezentos e trinta e nove mil e oitocentos reais*).

II - **HOMOLOGAR** o resultado parcial do procedimento licitatório, referente aos itens 1, 2 e 4 do **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ-SRP**, em consonância com os Termos de Julgamentos gerados pelo Sistema Compras.gov e o Relatório Parcial de Licitação Nº 23.2025.CPL.1676202.2025.001317 e suas documentações complementares;

III – À **COMISSÃO PERMANENTE DE LICITAÇÃO – CPL**, para as providências cabíveis;

IV – Após, ao **SETOR DE COMPRAS E SERVIÇOS** - **SCOMS,** para prosseguimento do feito.

Cientifique-se. Publique-se. Cumpra-se.

GABINETE DO SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus (AM), XX de julho de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos

Ordenador de Despesas

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 21/07/2025, às 15:08, conforme art. 1º, III, "b", da Lei 11.419/2006.

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DESPACHO Nº 50.2025.CPL.1677478.2025.001317

PROCESSO SEI Nº 2025.001317

Objeto*:* Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, **estações de trabalho e computadores portáteis**, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.

Considerando a realização do Pregão Eletrônico n.º 94.010/2024-CPL/MP/PGJ, iniciado no dia 30 de junho e em andamento até a presente data;

Considerando a aceitação das propostas de preços e das condições de habilitação do licitante **E.R. SOLUCOES INFORMATICA LTDA.** , CNPJ (MF) n.º 05.778.325/0005-47 para os Itens 1, 2 e 4.

Considerando que, dentre os requisitos de validade, o resultado parcial do certame necessita da adjudicação e homologação pelo Ordenador de Despesas desta Procuradoria-Geral de Justiça, nos termos da Lei Federal N.º 14.133, de 01.04.2021 e do Ato n.º 008/2024/PGJ;

Encaminhem-se os autos do Procedimento Interno ao Exmo. Sr. Dr. **SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS**, para fins de análise, adjudicação e homologação do certame licitatório em espeque, caso assim entenda.

Manaus, 21 de julho de 20245.

Maurício Araújo Medeiros

Pregoeiro - PORTARIA 606/2025/SUBADM

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 21/07/2025, às 15:08, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1677478** e o código CRC **C0108556**.

DESPACHO Nº 621.2025.01AJ-SUBADM.1677976.2025.001317

PROCESSO SEI N.º 2025.001317

Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP

A D J U DI C A Ç Ã O E H O M O L O G A Ç Ã O

C O N S I D E R A N D O a solicitação constante do Ofício Nº 41.2025.DTIC.1566526.2025.001317, bem como o teor do Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317 e Anexos;

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 21/07/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a *formação de ata de registro de preços para aquisição de gêneros alimentícios (açúcar, café e leite) a serem disponibilizados pelo Almoxarifado, localizado no edifício-sede da PGJ, a fim de garantir o aprimoramento da distribuição dos bens de consumo existentes em estoque, melhorando a qualidade de atendimento das demandas das diversas unidades da Procuradoria-Geral de Justiça, por um período estimado de 12 meses,* quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos*;*

CONSIDERANDO a aceitação das propostas de preço e habilitação da empresa **E.R. SOLUCOES INFORMATICA LTDA.** , CNPJ (MF) n.º 05.778.325/0005-47, para: **a) Item 1** - no Valor Total de **R$ 9.880.000,00** (*nove milhões oitocentos e oitenta mil reais*)**; b) Item 2 -** Valor Total de **R$ 1.015.000,00** (*um milhão quinze mil reais*); e **c) Item 4** - no Valor Total de **R$ 339.800,00** (*trezentos e trinta e nove mil e oitocentos reais*).

CONSIDERANDO o Relatório Parcial de Licitação Nº 23.2025.CPL.1676202.2025.001317, referente aos itens 1, 2 e 4, no qual consta que a realização do Pregão significou uma economia de **R$ 1.781.187,90** (*um milhão, setecentos e oitenta e um mil cento e oitenta e sete reais e noventa centavos*), ou seja, uma **redução de aproximadamente 13,68% do valor parcial estimado pela Administração**.

CONSIDERANDO o teor da Lei Federal N.º 14.133, de 01.04.2021 e do Ato n.º 008/2024/PGJ;

CONSIDERANDO a **não** interposição de Recurso por parte dos interessados, no prazo e condições de que trata o art. 165, incisos I e II, da Lei Federal N.º 14.133/2021;

R E S O L V E:

I – **ADJUDICAR** o objeto do certame à empresa **E.R. SOLUCOES INFORMATICA LTDA.**, CNPJ (MF) n.º 05.778.325/0005-47, para: **a) Item 1** - no Valor Total de **R$ 9.880.000,00** (*nove milhões oitocentos e oitenta mil reais*)**; b) Item 2 -** Valor Total de **R$ 1.015.000,00** (*um milhão quinze mil reais*); e **c) Item 4** - no Valor Total de **R$ 339.800,00** (*trezentos e trinta e nove mil e oitocentos reais*).

II - **HOMOLOGAR** o resultado parcial do procedimento licitatório, referente aos itens 1, 2 e 4 do **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ-SRP**, em consonância com os Termos de Julgamentos gerados pelo Sistema Compras.gov e o Relatório Parcial de Licitação Nº 23.2025.CPL.1676202.2025.001317 e suas documentações complementares;

III – À **COMISSÃO PERMANENTE DE LICITAÇÃO – CPL**, para as providências cabíveis;

IV – Após, ao **SETOR DE COMPRAS E SERVIÇOS** - **SCOMS,** para prosseguimento do feito.

Cientifique-se. Publique-se. Cumpra-se.

GABINETE DO SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus (AM), 22 de julho de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos

Ordenador de Despesas

Documento assinado eletronicamente por **André Virgílio Belota Seffair**, **Subprocurador(a)-Geral de Justiça para Assuntos Administrativos**, em 22/07/2025, às 11:27, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1677976** e o código CRC **E3C4DE22**.

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

ERRATA Nº 4.2025.CPL.1719255.2025.001317

No texto do **DESPACHO Nº 621.2025.01AJ-SUBADM.1677976.2025.001317,** assinado em 22/07/2025, publicado no **Diário Oficial do Ministério Público do Estado do Amazonas - DOMPE AM**, Edição N.º 3127, página 8, datado de 23 de julho de 2025, decorrente do PREGÃO ELETRÔNICO N.° 94010/2025-CPL/MP/PGJ-SRP, Processo SEI N.º 2025.001317.

ONDE SE LÊ:

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 21/07/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a *formação de ata de registro de preços para aquisição de gêneros alimentícios (açúcar, café e leite) a serem disponibilizados pelo Almoxarifado, localizado no edifício-sede da PGJ, a fim de garantir o aprimoramento da distribuição dos bens de consumo existentes em estoque, melhorando a qualidade de atendimento das demandas das diversas unidades da Procuradoria-Geral de Justiça, por um período estimado de 12 meses,* quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos*;*

LEIA-SE:

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 21/07/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a *formação de registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses,* quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos*;*

Cientifique-se. Publique-se. Cumpra-se.

GABINETE DA SUBPROCURADORA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus (AM), 10 de setembro de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR

Subprocurador-Geral de Justiça para Assuntos Administrativos

Ordenador de Despesas

Documento assinado eletronicamente por **André Virgílio Belota Seffair**, **Subprocurador(a)-Geral de Justiça para Assuntos Administrativos**, em 10/09/2025, às 13:54, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1719255** e o código CRC **C2C22A5C**.

Subprocurador-Geral de Justiça para Assuntos Administrativos

ERRATA Nº 4.2025.CPL.1719255.2025.001317

No texto do DESPACHO Nº 621.2025.01AJ-SUBADM.1677976.2025.001317, assinado em 22/07/2025, publicado no Diário Oficial do Ministério Público do Estado do Amazonas - DOMPE AM, Edição N.º 3127, página 8, datado de 23 de julho de 2025, decorrente do PREGÃO ELETRÔNICO N.° 94010/2025-CPL/MP/PGJ-SRP, Processo SEI N.º 2025.001317.

ONDE SE LÊ:

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 21/07/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a formação de ata de registro de preços para aquisição de gêneros alimentícios (açúcar, café e leite) a serem disponibilizados pelo Almoxarifado, localizado no edifício-sede da PGJ, a fim de garantir o aprimoramento da distribuição dos bens de consumo existentes em estoque, melhorando a qualidade de atendimento das demandas das diversas unidades da Procuradoria-Geral de Justiça, por um período estimado de 12 meses, quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos;

LEIA-SE:

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 21/07/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a formação de registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses, quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos;

Cientifique-se. Publique-se. Cumpra-se.

GABINETE DA SUBPROCURADORA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus (AM), 10 de setembro de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos
Ordenador de Despesas

ERRATA Nº 5.2025.CPL.1719258.2025.001317

No texto do DESPACHO Nº 799.2025.01AJ-SUBADM.1716955.2025.001317, assinado em 08/09/2025, publicado no Diário Oficial do Ministério Público do Estado do Amazonas - DOMPE AM, Edição N.º 3159, página 9, datado de 09 de setembro de 2025, decorrente do PREGÃO ELETRÔNICO N.° 94010/2025-CPL/MP/PGJ-SRP, Processo SEI N.º 2025.001317.

ONDE SE LÊ:

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 21/07/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a formação de ata de registro de preços para aquisição de gêneros alimentícios (açúcar, café e leite) a serem disponibilizados pelo Almoxarifado, localizado no edifício-sede da PGJ, a fim de garantir o aprimoramento da distribuição dos bens de consumo existentes em estoque, melhorando a qualidade de atendimento das demandas das diversas unidades da Procuradoria-Geral de Justiça, por um período estimado de 12 meses, quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos;

LEIA-SE:

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 05/08/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a formação de registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses, quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos;

Cientifique-se. Publique-se. Cumpra-se.

GABINETE DA SUBPROCURADORA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus (AM), 10 de setembro de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos
Ordenador de Despesas

DESPACHO Nº 804.2025.01AJ-SUBADM.1718714.2024.013232

PROCESSO SEI n.º 2024.013232
Pregão Eletrônico n.º 94.008/2025-CPL/MP/PGJ - SRP

ADJUDICAÇÃO E HOMOLOGAÇÃO

CONSIDERANDO a solicitação constante do Memorando n.º 134.2024.SAL.1346604.2024.013232, retificado por meio do Memorando Nº 142.2025.SAL.1618715.2024.013232, bem como o teor do Termo de Referência Nº 4.2025.SAL.1618626.2024.013232 e seus anexos;

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.008/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 04/06/2025 a 03/09/2025, sobretudo, as ponderações do relatório circunstanciado de apreciação do certame de referência, tendo por objeto registro de preço destinado à

PROCURADORIA-GERAL DE JUSTIÇA

Procuradora-Geral de Justiça:
Leda Mara Nascimento Albuquerque
Subprocuradora-Geral de Justiça para Assuntos Jurídicos e Institucionais:
Anabel Vitória Pereira Mendonça de Souza
Subprocurador-Geral de Justiça para Assuntos Administrativos:
André Virgílio Belota Seffair
Corregedora-Geral do Ministério Público:
Silvana Nobre de Lima Cabral
Secretária-Geral do Ministério Público:
Wandete de Oliveira Netto

PROCURADORES DE JUSTIÇA

Câmaras Cíveis
Elvys de Paula Freitas
Sandra Cal Oliveira
Jussara Maria Pordeus e Silva
Mara Nóbia Albuquerque da Cunha
Suzete Maria dos Santos
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Marco Aurélio Lisciotto

Câmaras Criminais
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Mauro Roberto Veras Bezerra
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Adelton Albuquerque Matos

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Sílvia Abdala Tuma
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Neyde Regina Demósthenes Trindade
Silvana Nobre de Lima Cabral

CONSELHO SUPERIOR

Leda Mara Nascimento Albuquerque (Presidente)
Silvana Nobre de Lima Cabral
Mara Nóbia Albuquerque da Cunha
Adelton Albuquerque Matos
Elvys de Paula Freitas
Jorge Michel Ayres Martins
Nilda Silva de Sousa

OUVIDORIA
Sílvia Abdala Tuma

Av. Cel. Teixeira, 7995 - Nova Esperança - CEP: 69037-473 - Manaus/AM - Fone: (92) 3655-0500

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

CERTIDÃO Nº 646.2025.SUBADM.1678920.2025.001317

Certifico, para todos os fins, que o documento 1677976 foi inserido, nesta data, no Diário Oficial Eletrônico do Ministério Público do Estado do Amazonas – DOMPE, seguindo para publicação conforme fila do referido sistema eletrônico.

Manaus-AM, data da assinatura eletrônica.

Wilson Ribeiro Junior

Agente de Apoio - Administrativo da SUBADM

Documento assinado eletronicamente por **Wilson Ribeiro Júnior**, **Agente de Apoio - Administrativo**, em 22/07/2025, às 16:38, conforme art. 1º, III, "b", da Lei 11.419/2006.

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ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos

PORTARIA Nº 773/2025/SUBADM

O SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, no uso de suas atribuições legais, e

CONSIDERANDO o teor do Procedimento Interno nº 2025.012154 – SEI;

RESOLVE:

INCLUIR a Estagiária de Direito lotada no NUPA-MPAM, Sra. ANA LUIZA PINHEIRO CATUNDA, na PORTARIA Nº 732/2025/SUBADM, datada de 09 de julho de 2025, que autorizou o deslocamento da equipe de Facilitadores em Justiça Restaurativa listada abaixo, ao município de Presidente Figueiredo/AM, no dia 23.07.2025, para a realização de práticas restaurativas, Círculo de Construção de Paz, do Projeto Escola em Paz, no ETI Maria Eva, no horário de 9h às 16h.

Publique-se, registre-se, cumpra-se.

SUBPROCURADORIA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus/AM, 23 de julho de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos

PORTARIA Nº 774/2025/SUBADM

O SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, no uso de suas atribuições legais, e

CONSIDERANDO o teor do Memorando nº 188.2025.CAO-CRIMO.1671573.2025.014391;

RESOLVE:

RETIFICAR o item I da PORTARIA Nº 734/2025/SUBADM, datada de 09 de julho de 2025, que passa a vigorar com a seguinte redação:

"I - AUTORIZAR o deslocamento dos servidores de Matrículas nº 17990A e 14370A, a município do interior do Estado do Amazonas, no período de 16 a 22.07.2025, com o objetivo de atender Ordem de Diligência relacionada aos autos SAJ-MP nº 02.2025.00005767-7;".

Publique-se, registre-se, cumpra-se.

SUBPROCURADORIA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus/AM, 23 de julho de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos

PORTARIA Nº 775/2025/SUBADM

O SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, no uso de suas atribuições legais, e

CONSIDERANDO o teor do Procedimento SEI nº 2023.021720;

RESOLVE:

EXCLUIR, a contar de 14.07.2025, o servidor YURI DE BARROS LOURENÇO, Agente Técnico - Jurídico, do rol de participantes da 5.ª Turma do Programa de Teletrabalho, constante na PORTARIA Nº 1106/2023/SUBADM, datada de 19 de outubro de 2023.

Publique-se, registre-se, cumpra-se.

SUBPROCURADORIA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus/AM, 23 de julho de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos

PORTARIA Nº 776/2025/SUBADM

O SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, no uso de suas atribuições legais, e

CONSIDERANDO o teor do Procedimento SEI nº 2023.017134;

RESOLVE:

EXCLUIR, a contar de 23.06.2025, a servidora ÉRIKA VANESSA RORIZ HIPÓLITO VIEIRA, Agente Técnico - Jurídico, do rol de participantes da 4.ª Turma do Programa de Teletrabalho, constante na PORTARIA Nº 825/2023/SUBADM, datada de 15 de agosto de 2023.

Publique-se, registre-se, cumpra-se.

SUBPROCURADORIA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus/AM, 23 de julho de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos

DESPACHO Nº 621.2025.01AJ-SUBADM.1677976.2025.001317

PROCESSO SEI N.º 2025.001317
Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP

A D J U D I C A Ç Ã O E H O M O L O G A Ç Ã O

CONSIDERANDO a solicitação constante do Ofício Nº 41.2025.DTIC.1566526.2025.001317, bem como o teor do Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317 e Anexos;

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 21/07/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a formação de ata de registro de preços para aquisição de gêneros alimentícios (açúcar, café e leite) a serem disponibilizados pelo Almoxarifado, localizado no edifício-sede da PGJ, a fim de garantir o aprimoramento da distribuição dos bens de consumo existentes em estoque, melhorando a qualidade de atendimento das demandas das diversas unidades da Procuradoria-Geral de Justiça, por um período estimado de 12 meses, quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos;

PROCURADORIA-GERAL DE JUSTIÇA

Procuradora-Geral de Justiça:
Leda Mara Nascimento Albuquerque
Subprocuradora-Geral de Justiça para Assuntos Jurídicos e Institucionais:
Anabel Vitória Pereira Mendonça de Souza
Subprocurador-Geral de Justiça para Assuntos Administrativos:
André Virgílio Belota Seffair
Corregedora-Geral do Ministério Público:
Silvana Nobre de Lima Cabral
Secretária-Geral do Ministério Público:
Wandete de Oliveira Netto

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Neyde Regina Demósthenes Trindade
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CONSELHO SUPERIOR

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Mara Nóbia Albuquerque da Cunha
Adelton Albuquerque Matos
Elvys de Paula Freitas
Jorge Michel Ayres Martins
Nilda Silva de Sousa

OUVIDORIA
Sílvia Abdala Tuma

Publicação Homologação ITENS 1, 2 e 3 - PE 94010/2025 (1680395) SEI 2025.001317 / pg. 13

CONSIDERANDO a aceitação das propostas de preço e habilitação da empresa E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.º 05.778.325/0005-47, para: a) Item 1 - no Valor Total de R$ 9.880.000,00 (nove milhões oitocentos e oitenta mil reais); b) Item 2 - Valor Total de R$ 1.015.000,00 (um milhão quinze mil reais); e c) Item 4 - no Valor Total de R$ 339.800,00 (trezentos e trinta e nove mil e oitocentos reais).

CONSIDERANDO o Relatório Parcial de Licitação Nº 23.2025.CPL.1676202.2025.001317, referente aos itens 1, 2 e 4, no qual consta que a realização do Pregão significou uma economia de R$ 1.781.187,90 (um milhão, setecentos e oitenta e um mil cento e oitenta e sete reais e noventa centavos), ou seja, uma redução de aproximadamente 13,68% do valor parcial estimado pela Administração.

CONSIDERANDO o teor da Lei Federal N.º 14.133, de 01.04.2021 e do Ato n.º 008/2024/PGJ;

CONSIDERANDO a não interposição de Recurso por parte dos interessados, no prazo e condições de que trata o art. 165, incisos I e II, da Lei Federal N.º 14.133/2021;

RESOLVE:

I – ADJUDICAR o objeto do certame à empresa E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.º 05.778.325/0005-47, para: a) Item 1 - no Valor Total de R$ 9.880.000,00 (nove milhões oitocentos e oitenta mil reais); b) Item 2 - Valor Total de R$ 1.015.000,00 (um milhão quinze mil reais); e c) Item 4 - no Valor Total de R$ 339.800,00 (trezentos e trinta e nove mil e oitocentos reais).

II - HOMOLOGAR o resultado parcial do procedimento licitatório, referente aos itens 1, 2 e 4 do PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ-SRP, em consonância com os Termos de Julgamentos gerados pelo Sistema Compras.gov e o Relatório Parcial de Licitação Nº 23.2025.CPL.1676202.2025.001317 e suas documentações complementares;

III – À COMISSÃO PERMANENTE DE LICITAÇÃO – CPL, para as providências cabíveis;

IV – Após, ao SETOR DE COMPRAS E SERVIÇOS - SCOMS, para prosseguimento do feito.

Cientifique-se. Publique-se. Cumpra-se.

GABINETE DO SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus (AM), 22 de julho de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos
Ordenador de Despesas

ATOS DOS CAOPS

AVISO

AVISO DE ARQUIVAMENTO 0001/2025/GAECO-04

De ordem dos Excelentíssimos Senhores Promotores de Justiça membros do Grupo de Atuação Especial de Combate ao Crime Organizado (GAECO) do Ministério Público do Estado do Amazonas, comunicamos ao Sr. ALMIR JÚNIOR DE ARAÚJO DA COSTA o arquivamento do PROCESSO Nº 06.2019.00001243-7, tendo em vista encontrar-se em local incerto e não sabido e terem sido frustradas todas as tentativas de comunicação pessoal e por contatos eletrônicos.

As razões do arquivamento estão expostas no Despacho de Arquivamento à disposição dos interessados na Secretaria do CAO-CRIMO. Outrossim, ressaltamos que a pessoa notificada poderá, no prazo de 30 (trinta) dias (CPP, art. 28, §1º), recorrer da decisão através do e-mail: gaeco4@mpam.mp.br.

Manaus / AM, 22 de julho de 2025

LILIAN NARA PINHEIRO DE ALMEIDA
Promotora de Justiça – GAECO

PRISCILLA CARVALHO PINI
Promotora de Justiça – GAECO

ERIC NUNES NOVAES MACHADO
Promotor de Justiça – GAECO

IRANILSON DE ARAÚJO RIBEIRO
Promotor de Justiça – GAECO

ADRIANA MONTEIRO ESPINHEIRA
Promotora de Justiça – GAECO

EDITAL Nº 01.2025.CAO-PE/2025/CAO-PE

EDITAL DE INSCRIÇÃO PARA EXERCÍCIO DE FUNÇÃO ELEITORAL

A PROCURADORA-GERAL DE JUSTIÇA DO ESTADO DO AMAZONAS no uso de suas atribuições legais,

CONSIDERANDO o Ato Conjunto PGJ/CAO-PE n.º 003/2024, publicado no Diário Oficial Eletrônico do Ministério Público do Estado do Amazonas em agosto de 2024, que disciplina o procedimento interno a respeito da indicação e dispensa de Membro do Ministério Público para o exercício de funções eleitorais no interior e na capital e dá outras providências.

FAZ SABER, que estão abertas as inscrições para preenchimento de função eleitoral nas seguintes Zonas Eleitorais:

(EM ANEXO)

ATOS DA PROMOTORIA DE JUSTIÇA

AVISO

AVISO DE ARQUIVAMENTO

Processo n. 0735782-70.2022.8.04.0001

O Promotor de Justiça Dr. André Luiz Medeiros Figueira, da 92ª Promotoria de Justiça de Manaus/AM, no uso de suas atribuições, Notifica o Sr(a). MAURÍCIO PINTO SOARES, sobre a DECISÃO DE ARQUIVAMENTO dos Autos nº 0735782-70.2022.8.04.0001. As razões do arquivamento estão expostas no Despacho de fls. 04 a 06, que se encontra à disposição nesta Promotoria de Justiça.
Fica consignado que da promoção de arquivamento caberá recurso administrativo, com as respectivas razões, no prazo de 30 (trinta) dias, contados da publicação deste, nos termos do art. 28, § 1º do Código de Processo Penal, e deverá ser encaminhado ao e-mail: 92promotoria.mao@mpam.mp.br.
Publique-se no Diário Oficial Eletrônico do Ministério Público.

Manaus (AM), 07 de abril de 2025.

André Luiz Medeiros Figueira

PROCURADORIA-GERAL DE JUSTIÇA

Procuradora-Geral de Justiça:
Leda Mara Nascimento Albuquerque
Subprocuradora-Geral de Justiça para Assuntos Jurídicos e Institucionais:
Anabel Vitória Pereira Mendonça de Souza
Subprocurador-Geral de Justiça para Assuntos Administrativos:
André Virgílio Belota Seffair
Corregedora-Geral do Ministério Público:
Silvana Nobre de Lima Cabral
Secretária-Geral do Ministério Público:
Wandete de Oliveira Netto

PROCURADORES DE JUSTIÇA

Câmaras Cíveis
Elvys de Paula Freitas
Sandra Cal Oliveira
Jussara Maria Pordeus e Silva
Mara Nóbia Albuquerque da Cunha
Suzete Maria dos Santos
Nilda Silva de Sousa
Delisa Olívia Vieiralves Ferreira
Jorge Michel Ayres Martins
Anabel Vitória Pereira Mendonça de Souza
Marco Aurélio Lisciotto

Câmaras Criminais
Carlos Lélio Lauria Ferreira
Marlene Franco da Silva
Mauro Roberto Veras Bezerra
Sarah Pirangy de Souza
Aguinelo Balbi Júnior
Liani Mônica Guedes de Freitas Rodrigues
Adelton Albuquerque Matos

Câmaras Reunidas
Karla Fregapani Leite
Públio Caio Bessa Cyrino
Sílvia Abdala Tuma
José Bernardo Ferreira Júnior
Neyde Regina Demósthenes Trindade
Silvana Nobre de Lima Cabral

CONSELHO SUPERIOR

Leda Mara Nascimento Albuquerque (Presidente)
Silvana Nobre de Lima Cabral
Mara Nóbia Albuquerque da Cunha
Adelton Albuquerque Matos
Elvys de Paula Freitas
Jorge Michel Ayres Martins
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Publicação Homologação ITENS 1, 2 e 3 - PE 94010/2025 (1680395) SEI 2025.001317 / pg. 14

PROCURADORIA GERAL DE JUSTIÇA

TERMO DE HOMOLOGAÇÃO

UASG 925849 - PROCURADORIA GERAL DE JUSTIÇA - AM

PREGÃO 94010/2025

Às 14:34 horas do dia 25 de julho do ano de 2025, após constatada a regularidade dos atos procedimentais, a autoridade competente, ANDRE VIRGILIO BELOTA SEFFAIR, HOMOLOGA a adjudicação referente ao Processo nª 2025.001317, Pregão nª 94010/2025.

Fundamentação legal:	Lei 14.133/2021	Característica:	SRP - Registro de Preço
Critério de julgamento:	Menor Preço / Maior Desconto	Modo de disputa:	Aberto
Compra emergencial:	Não	UF da UASG:	AM
Objeto da compra:	Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 mes		
Entrega de propostas:	De 12/06/2025 às 08:00 até 30/06/2025 às 10:00		
Abertura da sessão pública:	Dia 30/06/2025 às 10:00 (horário de Brasília)		

Mensagens do chat da compra

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 10:00:02	A sessão pública está aberta. Até 1 item poderá estar em disputa simultaneamente e o período de abertura para disputa será entre 08:00 e 18:00. Haverá aviso prévio de abertura dos itens de 10 minutos. Mantenham-se conectados.
Sistema	30/06/2025 às 10:15:46	Prezados Licitantes, bom dia.
Sistema	30/06/2025 às 10:15:50	Sejam bem vindos à sessão pública do Pregão Eletrônico 94.010/2025 que tem por objeto o registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses.
Sistema	30/06/2025 às 10:15:59	Prezados, em breve será aberta a fase de disputa. Solicito atenção e comprometimento aos valores apresentados nos lances, visto que vinculam a empresa à manutenção do preço por um período de 12 meses, incumbindo a ela, portanto, a responsabilidade pela correta precificação da sua oferta.
Sistema	30/06/2025 às 10:16:10	Solicito atenção ao subitem 6.10 do Instrumento Convocatório no intuito do adequado acompanhamento do procedimento por parte de todos os interessados.
Sistema	30/06/2025 às 10:16:20	Boa disputa.
Sistema	30/06/2025 às 14:06:48	A etapa de julgamento de propostas foi iniciada. Para acompanhá-la acesse a opção "Seleção de fornecedores" na linha do tempo.
Sistema	30/06/2025 às 14:24:10	Prezados, encerrada a fase de disputa, passaremos à análise das ofertas apresentadas pelas licitantes mais bem colocadas na ordem de classificação.
Sistema	30/06/2025 às 14:26:29	No entanto, cabe tratar com os primeiros colocados para o Item 2. Solicito atenção aos interessados.
Sistema	30/06/2025 às 14:58:29	Senhores, considerando a desclassificação da proposta da licitante TROGON COMERCIO DE INFORMATICA LTDA SP para o item 2, passaremos a tratar com os licitantes seguintes. Solicito atenção aos interessados.

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Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 15:24:14	Prezados, considerando que o licitante HOUSE LTDA. não se manifestou, passaremos a tratativa com a licitante 42.816.024 LEONARDO CATIVO SOUSA. Solicito atenção à interessada.
Sistema	30/06/2025 às 15:36:05	Senhor licitante, solicito manifestação.
Sistema	30/06/2025 às 15:52:50	Senhores, em breve estarei convocando as licitantes mais bem colocadas na ordem de classificação, para envio de nova proposta ajustada ao valor dos lances para cada item.
Sistema	30/06/2025 às 15:53:19	O prazo para envio é de 2 (duas) horas contadas a partir da convocação no sistema.
Sistema	30/06/2025 às 15:57:21	Com fundamento na letra "k" do subitem 9.2 do Edital, deverá ser enviada junto à proposta de preços "documentação técnica (manuais, catálogos ou prospectos), com as características detalhadas (marca, modelo, cor, tipo de material e medidas) e imagens ilustrativas dos produtos propostos, que possibilitem a completa averiguação de conformidade com as especificações, visando facilitar a avaliação a ser realizada por técnicos deste Órgão."
Sistema	30/06/2025 às 15:59:25	Poderá ser apresentado na proposta ou junto dela, links do fabricante/fornecedor, desde que atenda, no mínimo, as exigências do dispositivo mencionado.
Sistema	30/06/2025 às 16:01:38	Em breve as licitantes mais bem classificadas serão convocadas no sistema. Solicito atenção às interessadas.
Sistema	30/06/2025 às 16:04:57	Senhores, considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retornando amanhã (01/07/2025), a partir das 10h (horário Brasília) para as convocações.
Sistema	30/06/2025 às 16:05:13	Aguardo a todos no dia e hora aqui agendados.
Sistema	30/06/2025 às 16:05:28	Obrigado pela atenção e uma excelente tarde a todos.
Sistema	01/07/2025 às 10:05:27	Prezados Licitantes, bom dia.
Sistema	01/07/2025 às 10:16:19	Retornamos aos trabalhos deste certame, considerando a convocação dos licitantes mais bem classificados na ordem dos lances para envio de propostas.
Sistema	01/07/2025 às 10:27:59	Senhores, informo que o Quadro-Resumo do Processo de Compra Nª 195.2025.SCOMS.1609045.2025.001317 com os valores estimados para cada item já se encontra disponível no Portal do MPAM, no seguinte endereço:
Sistema	01/07/2025 às 10:28:11	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	01/07/2025 às 10:29:55	Senhores, em breve estarei convocando as licitantes para envio das proposta de preços ajustadas aos lances. Solicito atenção.
Sistema	01/07/2025 às 10:54:59	Senhores, considerando a solicitação de desclassificação de proposta para o Item 4 por parte do licitante MR COMERCIO DE PECAS E ACESSORIOS LTDA., será convocado para envio de proposta o próximo licitante na ordem de classificação. Solicito atenção.
Sistema	01/07/2025 às 13:39:54	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 13:43:26	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 2 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 14:32:39	Na sequência, considerando a desclassificação das licitantes 42.816.024 LEONARDO CATIVO SOUSA (Item 2) e HOUSE LTDA. (Item 4), serão convocados novos licitantes para envio de proposta de preços. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:00:55	Prezados, em breve serão convocados licitantes para envio de propostas para os itens 2 e 4. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:08:04	Prezados, será promovido um desempate para o Item 4 entre os licitantes A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA. e 42.816.024 LEONARDO CATIVO SOUSA. Solicito atenção aos interessados.

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Responsável	Data/Hora	Mensagem
Sistema	01/07/2025 às 15:15:30	Realizado o desempate, passaremos à convocação de novo licitante para o Item 4. Solicito atenção.
Sistema	01/07/2025 às 15:17:15	Será convocado também novo licitante para o Item 2. Solicito atenção.
Sistema	01/07/2025 às 15:18:12	Estando os licitantes devidamente convocados, fico no aguardo dos solicitados documentos.
Sistema	01/07/2025 às 18:31:24	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 18:32:20	Considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retomando-os amanhã (02/07/2025), a partir das 10h (horário de Brasília).
Sistema	01/07/2025 às 18:32:44	Aguardo a todos no dia e hora aqui agendados.
Sistema	01/07/2025 às 18:33:01	Agradeço a atenção dispensada e desejo a todos um excelente fim de tarde.
Sistema	02/07/2025 às 10:02:34	Prezados, bom dia.
Sistema	02/07/2025 às 10:08:35	Senhores, informo que em breve será convocado novo licitante para envio de proposta para o item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 12:37:06	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	02/07/2025 às 12:38:31	Na sequência, será convocado novo licitante para envio de proposta para o Item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 14:52:01	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	02/07/2025 às 14:52:14	Na sequência, será convocado novo licitante para envio de proposta para o Item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 16:50:23	Prezados, considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retornando amanhã (03/07/2025), a partir das 10h (horário Brasília).
Sistema	02/07/2025 às 16:50:49	Aguardo a todos no dia e hora aqui agendados.
Sistema	02/07/2025 às 16:51:05	Finalizo desejando a todos uma excelente tarde.
Sistema	03/07/2025 às 10:11:15	Prezados Licitantes, bom dia.
Sistema	03/07/2025 às 10:11:53	Retornamos aos trabalhos deste certame considerando a convocação de novo licitante para envio de proposta para o Item 4.
Sistema	03/07/2025 às 10:12:35	Em breve estarei convocando novo licitante para envio de proposta ajusta ao lance para o Item 4. Solicito atenção ao interessado.
Sistema	03/07/2025 às 10:24:21	Prezados, em breve estarei convocando novo licitante para envio de proposta ajusta ao lance para o Item 4. Solicito atenção ao interessado.
Sistema	03/07/2025 às 10:38:26	Estando o Licitante devidamente convocado, fico no aguardo dos solicitados documentos. Obrigado!
Sistema	03/07/2025 às 11:46:29	Senhores Licitantes, recebidos os documentos referente ao Item 4, informo que os mesmos serão encaminhados à análise por parte do setor técnico deste Órgão Ministerial.
Sistema	03/07/2025 às 11:47:11	Senhores, considerando a proposta apresentada pela licitante E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 para o item 1, informo o seguinte:
Sistema	03/07/2025 às 11:48:53	Submetida a proposta e os documentos técnicos enviados pela licitante classificada, o setor técnico DTIC, através do Parecer Nº 15.2025.SIET.1661793.2025.001317, manifestou-se "pela aceitabilidade do produto ofertado".

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Responsável	Data/Hora	Mensagem
Sistema	03/07/2025 às 11:50:25	Informo que o referido Parecer encontra-se disponível no Portal do MPAM, acessível a todos os interessados, no seguinte endereço: https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	03/07/2025 às 11:53:21	Senhores, considerando a manifestação técnica expressa no Parecer Nª 15.2025.SIET e o atendimento a todas as exigências formais do Edital referente à proposta de preços, este Pregoeiro decide pela ACEITAÇÃO da oferta do licitante E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 para o item 1.
Sistema	07/07/2025 às 15:57:44	Prezados Licitantes, boa tarde.
Sistema	07/07/2025 às 15:58:26	Informo que retornaremos aos trabalhos deste certame amanhã (08/07/2025), a partir das 14h (horário de Brasília).
Sistema	07/07/2025 às 15:58:41	Aguardo a todos no dia e hora aqui agendados. Obrigado.
Sistema	08/07/2025 às 14:11:23	Prezados licitantes, boa tarde.
Sistema	08/07/2025 às 14:14:38	Prezados, retornamos aos trabalhos deste certame considerando as propostas dos seguintes licitantes:
Sistema	08/07/2025 às 14:16:14	a) TORINO INFORMÁTICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, para o Item 2; b) POSITIVO TECNOLOGIA S/A (Filial), CNPJ (MF) n.ª 81.243.735/0009-03, para o Item 3; e c) E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, para o Item 4
Sistema	08/07/2025 às 14:24:07	Encaminhadas as ofertas ao setor técnico para análise, o referido setor manifestou-se da seguinte forma:
Sistema	08/07/2025 às 14:26:15	Parecer Nª 16.2025.SIET.1661858.2025.001317 - TORINO INFORMÁTICA LTDA., ITEM 2 - Pela exposição de motivos, depreende-se que: a) O teclado não atende; b) O requisito de leitor biométrico no mouse e teclado não foi atendida; entre outros.
Sistema	08/07/2025 às 14:27:56	Parecer Nª 18.2025.SIET.1664620.2025.001317 - POSITIVO TECNOLOGIA S/A (FILIAL) - ITEM 3 - Recomenda-se, portanto, caso a licitante seja instada a reapresentar a proposta técnica, que ela esteja em conformidade com o disposto no subitem 18.14, informando marca, modelo e documentação comprobatória específica de todos os componentes, de modo a permitir a verificação inequívoca da compatibilidade do produto ofertado com o objeto licitado.
Sistema	08/07/2025 às 14:28:43	Parecer Nª 19.2025.SIET.1665305.2025.001317 - ER SOLUÇÕES INFORMÁTICA LTDA. - ITEM 4 - O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica OPINA pela aceitabilidade do produto ofertado.
Sistema	08/07/2025 às 14:30:03	Assim, com fundamento na análise dos Pareceres aqui apresentados, Este Pregoeiro decide:
Sistema	08/07/2025 às 14:32:07	a) Recusar a proposta de preços do licitante TORINO INFORMÁTICA LTDA., para o ITEM 2, em conformidade ao Parecer Nª 16.2025.SIET.1661858.2025.001317 e Item 10.3.2 do Edital do certame.
Sistema	08/07/2025 às 14:35:55	b) Diligenciar o licitante POSITIVO TECNOLOGIA S/A (FILIAL) - para que apresente nos documentos de proposta enviados para o Item 3, o pleno atendimento aos requisitos técnicos exigidos no Termo de Referência Nª 2.2025.DTIC.1525128.2025.001317, Anexo I ao Edital do certame.
Sistema	08/07/2025 às 14:37:36	Para tal, será aberto o prazo de 2 (duas horas para envio de documento complementar em providência à solicitação constante do Parecer Nª 18.2025.SIET.1664620.2025.001317.
Sistema	08/07/2025 às 14:39:05	c) Aceitar a proposta de preços apresentada pelo licitante ER SOLUÇÕES INFORMÁTICA LTDA., para o ITEM 4, em conformidade ao Parecer Nª 19.2025.SIET.1665305.2025.001317 e ao Item 10 do Edital do certame.
Sistema	08/07/2025 às 14:40:00	Prezados, informo que os pareceres mencionados encontram-se disponíveis e acessíveis a todos os interessados no Portal do MPAM no seguinte endereço:
Sistema	08/07/2025 às 14:40:33	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis

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Responsável	Data/Hora	Mensagem
Sistema	08/07/2025 às 14:54:06	Prezado licitante POSITIVO TECNOLOGIA S/A (FILIAL), em breve V. Sa. será convocado para providências conforme apresentado nesse chat e no Parecer Nª 18.2025.SIET.1664620.2025.001317.
Sistema	08/07/2025 às 14:54:24	Solicito atenção.
Sistema	08/07/2025 às 14:56:10	Prezados, considerando a desclassificação da proposta do licitante TORINO INFORMÁTICA LTDA., para o ITEM 2, informo que em breve será convocado novo licitante para envio de proposta para o Item. Solicito atenção aos interessados.
Sistema	08/07/2025 às 15:00:40	Prezados, tomadas as devidas providências e convocados os licitantes, fico no aguardo dos solicitados documentos.
Sistema	08/07/2025 às 17:25:18	Senhores, recebidos os documentos, informo que os mesmos serão encaminhados ao setor técnico para análise.
Sistema	08/07/2025 às 17:26:29	Assim, encerraremos os trabalhos por hoje, retornando em data posterior devidamente informada através desse chat, em tempo hábil ao acompanhamento de todos os interessados.
Sistema	08/07/2025 às 17:26:39	Agradeço a atenção dispensada.
Sistema	08/07/2025 às 17:26:52	Finalizo desejando uma excelente tarde a todos.
Sistema	10/07/2025 às 11:36:20	Prezados, bom dia.
Sistema	10/07/2025 às 11:36:57	Informo que retornaremos aos trabalhos deste certame amanhã (11/07/2025), a partir das 10h (horário Brasília).
Sistema	10/07/2025 às 11:37:33	Aguardo a todos no dia e hora aqui agendados.
Sistema	11/07/2025 às 10:00:40	Prezados Licitantes, bom dia.
Sistema	11/07/2025 às 10:21:39	Retornamos aos trabalhos deste certame considerando as propostas apresentadas pelos licitantes POSITIVO TECNOLOGIA S/A (Filial), para o Item 3 e E.R. SOLUCOES INFORMATICA LTDA., para o Item 2.
Sistema	11/07/2025 às 10:39:45	Senhores, recebidos os documentos de propostas e encaminhados ao setor técnico competente para análise, obtivemos os seguintes resultados:
Sistema	11/07/2025 às 10:40:56	a) Parecer Nª 21.2025.SIET.1668662.2025.001317 - ER SOLUÇÕES INFORMÁTICA LTDA., para o ITEM 2 - Conclusão - O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica OPINA pela aceitabilidade do produto ofertado.
Sistema	11/07/2025 às 10:43:00	b) Parecer Nª 22.2025.SIET.1668772.2025.001317 - POSITIVO TECNOLOGIA S/A (FILIAL), para o Item 3 - Conclusão - Após análise da documentação apresentada pela licitante [...] foram observados alguns pontos inconclusivos, marcados como . Os pontos marcados com , são exigências que não foi possível comprovar sua aderência na segunda oportunidade de envio de documentação técnica.
Sistema	11/07/2025 às 10:44:33	Senhores, informo que o Parecer Nª 21.2025.SIET.1668662.2025.001317 e o Parecer Nª 22.2025.SIET.1668772.2025.001317 encontram-se disponíveis no Portal do MPAM, no seguinte
Sistema	11/07/2025 às 10:44:40	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	11/07/2025 às 10:46:44	Senhores, considerando os resultados das análises apresentados nos pareceres, informo o seguinte:
Sistema	11/07/2025 às 11:18:42	a) para saneamento das pendências apontadas nos pareceres, as licitantes serão convocadas para envio de documentos que comprovem o atendimento às exigências apontadas.
Sistema	11/07/2025 às 11:19:44	Assim, em breve convocarei as licitantes no sistema. Solicito atenção aos interessados.
Sistema	11/07/2025 às 11:25:58	Estando os licitantes devidamente convocados, fico no aguardo dos solicitados documentos.
Sistema	11/07/2025 às 14:23:53	Senhores, boa tarde.
Sistema	11/07/2025 às 14:25:25	Considerando o envio dos documentos solicitados referentes ao Item 2 por parte do Licitante E.R. SOLUCOES INFORMATICA LTDA. e sendo os mesmos suficientes para o pleno atendimento da solicitação, informo que:

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Responsável	Data/Hora	Mensagem
Sistema	11/07/2025 às 14:27:08	Este Pregoeiro decide pela Aceitação da proposta de preços do licitante E.R. SOLUCOES INFORMATICA LTDA. para o Item 2, pelo pleno atendimento às exigências técnicas e formais do Edital, referentes à proposta e em conformidade ao Parecer Nª 21.2025.SIET.1668662.2025.001317.
Sistema	11/07/2025 às 16:52:49	Prezados, recebidos os documentos referente ao Item 3, informo que os mesmos serão encaminhados para análise do setor técnico competente.
Sistema	11/07/2025 às 16:54:57	Considerando a hora avançada, encerraremos os trabalhos por hoje, retornando na segunda-feira (14/07/2025), a partir das 11h (horário de Brasília), para continuação dos trabalhos.
Sistema	11/07/2025 às 16:55:26	Aguardo a todos no dia e hora aqui agendados.
Sistema	11/07/2025 às 16:55:54	Agradeço a atenção dispensada. Finalizo desejando uma boa tarde e um excelente fim de semana a todos.
Sistema	14/07/2025 às 11:15:08	Prezados Licitantes, bom dia.
Sistema	14/07/2025 às 11:45:13	Senhores, considerando os documentos de Habilitação apresentados pelo Licitante E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, informo que os mesmos atendem a todas as exigências estabelecidas no instrumento convocatório.
Sistema	14/07/2025 às 11:45:42	Nesse sentido, este Pregoeiro decide pela HABILITAÇÃO do licitante E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47.
Sistema	14/07/2025 às 12:02:53	Senhores, em breve estarei habilitando a licitante no próprio sistema. Solicito atenção.
Sistema	14/07/2025 às 15:26:33	Prezados Licitantes, recebidos os documentos apresentados pelo licitante POSITIVO TECNOLOGIA S/A (FILIAL), referente ao Item 3, em resposta às solicitações constantes do Ofício Nª 256.2025.CPL.1667127.2025.001317, informo o seguinte:
Sistema	14/07/2025 às 15:29:43	Senhores, apenas retificando, as solicitações constam do Parecer Nª 22.2025.SIET.1668772.2025.001317 e não do Ofício Nª 256.2025.CPL.1667127.2025.001317.
Sistema	14/07/2025 às 15:31:35	O setor técnico, através do PARECER Nª 22.2025.SIET.1668772.2025.001317, manifestou-se da seguinte forma:
Sistema	14/07/2025 às 15:40:50	Senhores, retificando, o setor técnico, através do PARECER Nª 25.2025.SIET.1671649.2025.001317, manifestou-se da seguinte forma:
Sistema	14/07/2025 às 15:42:58	3. Conclusão - Não sendo possível constatar os pontos controversos, e não sendo atendido a solicitação para que o licitante, em sua proposta, declare expressamente que a garantia abrange acidentes, inclusive danos não intencionais, tais como QUEDA, TELA QUEBRADA, DERRAMAMENTO DE LÍQUIDOS, OSCILAÇÃO DE ENERGIA, não se limitando às ocorrências supracitadas, sendo o rol apresentado uma lista não exaustiva.
Sistema	14/07/2025 às 15:43:42	Informo que o referido PARECER Nª 25.2025.SIET.1671649.2025.001317 encontra-se disponível no Portal do MPAM, no seguinte endereço:
Sistema	14/07/2025 às 15:44:09	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	14/07/2025 às 15:46:55	Prezados, considerando o Parecer Nª 25.2025.SIET.1671649.2025.001317 e o subitem 10.7.1. c/c 10.3.5. do Edital, informo que a proposta do licitante POSITIVO TECNOLOGIA S/A, CNPJ Nª. 81.243.735/0001-48 para o Item 3 será desclassificada.
Sistema	14/07/2025 às 15:47:58	Na oportunidade, informo que será convocado novo licitante para envio de proposta para o Item 3, nos termos do subitem 10.11 e 9.1. do Edital. Solicito atenção.
Sistema	15/07/2025 às 13:57:49	Prezados, boa tarde. Informo que amanhã (16/07/2025) retornaremos aos trabalhos deste certame, a partir das 14h (horário Brasília).
Sistema	15/07/2025 às 13:58:06	Aguardo a todos no dia e hora aqui agendados. Obrigado.
Sistema	16/07/2025 às 14:04:53	Prezados Licitantes, boa tarde.
Sistema	16/07/2025 às 14:05:31	Retornamos aos trabalhos deste certame considerando a convocação do licitante HOUSE LTDA, CNPJ 35.689.930/0001-89 para envio de proposta ajustada ao lance para o Item 3.

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Responsável	Data/Hora	Mensagem
Sistema	16/07/2025 às 14:07:35	A proposta não foi encaminhada, portanto, a proposta da licitante será recusada em conformidade ao subitem 9.11 c/c subitem 10.3.5 do Edital.
Sistema	16/07/2025 às 14:08:10	Na sequência, será convocado novo licitante para envio de proposta para o Item 3. Solicito atenção aos interessados.
Sistema	16/07/2025 às 14:11:08	Estando o licitante devidamente convocado, fico no aguardo dos solicitados documentos.
Sistema	16/07/2025 às 18:28:03	Prezados, encerraremos os trabalhos por hoje, retornando amanhã (17/07/2025), a partir das 11h (horário Brasília).
Sistema	16/07/2025 às 18:28:12	Aguardo a todos no dia e hora aqui agendados.
Sistema	17/07/2025 às 11:21:56	Prezados Licitantes, bom dia.
Sistema	17/07/2025 às 11:23:36	Prezados, retornamos aos trabalhos deste certame considerando o não envio de proposta de preços ajustada ao lance, por parte da licitante HOUSE LTDA. para o Item 3.
Sistema	17/07/2025 às 11:39:17	Perdão senhores, retificando, a última licitante convocada e que não enviou proposta para o Item 3 foi a empresa MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01.
Sistema	17/07/2025 às 11:40:12	Assim, informo que a proposta da licitante será recusada e convocado novo licitante para envio de proposta ajustada para o item 3. Solicito atenção ao interessado.
Sistema	17/07/2025 às 11:46:27	Prezados, antes da convocação de novo licitante, passaremos ao procedimento de desempate ficto entre licitantes.
Sistema	17/07/2025 às 11:46:37	Solicito atenção às interessadas. Obrigado!
Sistema	17/07/2025 às 11:59:22	Prezados, encerrado o desempate e mantida a classificação, informo que o novo licitante será convocado para envio de proposta ajustada ao lance para o Item 3. Solicito atenção ao interessado.
Sistema	17/07/2025 às 12:05:01	Estando a licitante devidamente convocado, fico no aguardo dos solicitados documentos.
Sistema	17/07/2025 às 12:16:20	Prezado, acolho a solicitação visto que a solicitação foi realizada na hora do almoço.
Sistema	18/07/2025 às 10:27:40	Prezados Licitantes, informo que tivemos problemas de conexão no sistema no dia de ontem e que retornaremos aos trabalhos deste certame na segunda feira (21/07/2025) , a partir das 10h (horário Brasília).
Sistema	18/07/2025 às 10:27:51	Aguardo a todos no dia e hora aqui agendados.
Sistema	18/07/2025 às 10:28:02	Um bom dia e um excelente fim de semana a todos.
Sistema	21/07/2025 às 10:54:36	Prezados, bom dia.
Sistema	21/07/2025 às 10:55:20	Infelizmente não foi possível reabrir no horário agendado por questões de problemas de conexão, já resolvidos.
Sistema	21/07/2025 às 10:56:02	Assim, informo que às 11h (Horário Brasília), retomaremos os trabalhos. Solicito atenção. Obrigado!
Sistema	21/07/2025 às 11:13:15	Senhores, considerando a solicitação de envio da licitante de apenas 1 (um) documento, informo que será solicitado a título de documento complementar (subitem 10.9) Edital.
Sistema	21/07/2025 às 11:13:24	Solicito atenção à interessada.
Sistema	21/07/2025 às 13:22:53	Prezados, recebidos os documentos, informo os mesmos serão encaminhados para o setor técnico para análise e manifestação.
Sistema	21/07/2025 às 13:23:36	Nesse sentido, informo que encerraremos os trabalhos por hoje, retornando em data posterior devidamente informado através desse chat e em tempo hábil para o acompanhamento de todos os interessados.
Sistema	21/07/2025 às 13:24:07	Agradeço a atenção de todos e finalizo desejando-lhes uma excelente semana.
Sistema	25/07/2025 às 10:24:29	Prezados, informo que retornaremos aos trabalhos deste certame segunda-feira (28/07/2025), a partir das 10h (horário Brasília).

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Responsável	Data/Hora	Mensagem
Sistema	25/07/2025 às 10:24:41	Aguardo a todos no dia e hora aqui agendados.
Sistema	25/07/2025 às 10:25:03	Obrigado! Um excelente fim de semana a todos.

Eventos da compra

Data/Hora	Descrição
30/06/2025 às 10:00:02	Abertura da sessão pública
30/06/2025 às 14:06:48	Início da etapa de julgamento de propostas

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Item 1 - Microcomputador all in one

Microcomputador All In One Tela: Até 21,5POL, Interatividade Da Tela: Sensível Ao Toque, Memória Ram: Até 4GB, Núcleos Por Processador: Até 4, Armazenamento Hdd: Até 500GB, Armazenamento Ssd: Sem Disco Ssd, Fonte Alimentação: Bivolt Automática, Sistema Operacional: Proprietário, Garantia On Site: 36MESES

Quantidade:	1000	Valor estimado:	R$ 11.411,8500 (unitário)
Unidade de fornecimento:	Unidade		R$ 11.411.850,0000 (total)
Intervalo mínimo entre lances:	R$ 10,0000	Situação:	Adjudicado e Homologado
Critério de julgamento:	Menor Preço		
Tratamento Diferenciado ME/EPP:	Sem benefícios ME/EPP (Art. 4ª, lei 14.133/2021)		

Adjudicado e Homologado por CPF ***.287.***-*3 - ANDRE VIRGILIO BELOTA SEFFAIR para E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, melhor lance: R$ 9.880,0000 (unitário) / R$ 9.880.000,0000 (total)

Propostas do Item 1

Benefício Me/Epp: Conforme Art. 3ª da Lei Complementar nª 123, de 14 de dezembro de 2006
Programa de integridade: Conforme termos previsos na Lei nª 14.133/2021 e no Decreto nª 12.304/2024

Fornecedor	Valor ofertado	Situação
42.816.024/0001-63 - 42.816.024 LEONARDO CATIVO SOUSA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: AM	R$ 10.000,0000 (unitário) R$ 10.000.000,0000 (total)	-

Marca/Fabricante:	Conf TR				
Modelo/versão:	Conf TR				
Valor proposta:	R$ 10.000,0000 (unitário) R$ 10.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	1000

Fornecedor	Valor ofertado	Situação
51.750.663/0001-64 - 51.750.663 THIERREZ MATHEUS ALVES SALES Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: DF	R$ 80.000,0000 (unitário) R$ 80.000.000,0000 (total)	-

Marca/Fabricante:	Microcomputador all in one				
Modelo/versão:	Microcomputador all in one				
Valor proposta:	R$ 80.000,0000 (unitário) R$ 80.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	1000

Fornecedor	Valor ofertado	Situação
01.319.640/0001-21 - AJL INDUSTRIA E COMERCIO LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: AM	R$ 17.070,0000 (unitário) R$ 17.070.000,0000 (total)	-

Marca/Fabricante:	LENOVO				
Modelo/versão:	THINKCENTRE M70Q GEN 5				
Valor proposta:	R$ 30.000,0000 (unitário) R$ 30.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	1000

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Fornecedor	Valor ofertado	Situação
52.593.051/0001-78 - CENTERDATA COMERCIO DE PRODUTOS DE INFORMATICA E SERVICOS LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 20.000,0000 (unitário) R$ 20.000.000,0000 (total)	-
Marca/Fabricante: Lenovo Modelo/versão: Lenovo Valor proposta: R$ 20.000,0000 (unitário) R$ 20.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 1000		
36.770.097/0001-69 - CIB EMPREENDIMENTOS IMOBILIARIOS LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: MG	R$ 102.120.000,0000 (unitário) R$ 102.120.000.000,0000 (total)	-
Marca/Fabricante: Microcomputador All In One Tela: Até 21,5POL, Inte Modelo/versão: Microcomputador All In One Tela: Até 21,5POL, Inte Valor proposta: R$ 102.120.000,0000 (unitário) R$ 102.120.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 1000		
05.778.325/0005-47 - E.R. SOLUCOES INFORMATICA LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: ES	R$ 9.880,0000 (unitário) R$ 9.880.000,0000 (total)	Proposta adjudicada
Marca/Fabricante: LENOVO Modelo/versão: TIO24 GEN 5 + TC M70Q GEN 5 + T24i-30 Valor proposta: R$ 13.000,0000 (unitário) R$ 13.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 1000		
53.571.459/0001-01 - ELLOELLA DISTRIBUIDORA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: PE	R$ 20.466,0000 (unitário) R$ 20.466.000,0000 (total)	-
Marca/Fabricante: DELL Modelo/versão: OPTIPLEX MICRO + C2423H + P2425H Valor proposta: R$ 22.740,0000 (unitário) R$ 22.740.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 1000		
35.689.930/0001-89 - HOUSE LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: AM	R$ 9.890,0000 (unitário) R$ 9.890.000,0000 (total)	-
Marca/Fabricante: Dell Modelo/versão: Conforme tr Valor proposta: R$ 15.000,0000 (unitário) R$ 15.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 1000		

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Fornecedor	Valor ofertado	Situação
08.528.076/0001-04 - MICROBUSINESS TECNOLOGIA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: SC	R$ 12.940,0000 (unitário) R$ 12.940.000,0000 (total)	-

Marca/Fabricante:	LENOVO				
Modelo/versão:	ThinkCentre Tiny M70Q G4				
Valor proposta:	R$ 15.000,0000 (unitário) R$ 15.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	1000

32.872.401/0001-28 - PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 12.970,0000 (unitário) R$ 12.970.000,0000 (total)	-

Marca/Fabricante:	Lenovo				
Modelo/versão:	ThinKCentre + Tiny in One				
Valor proposta:	R$ 13.998,0000 (unitário) R$ 13.998.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	1000

11.027.350/0003-20 - PROXYS COMERCIO ELETRONICO LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: SC	R$ 11.982,7100 (unitário) R$ 11.982.710,0000 (total)	-

Marca/Fabricante:	LENOVO				
Modelo/versão:	ThinkCentre M70q Intel Core i5-14400T 16GB 256GB S				
Valor proposta:	R$ 14.550,4400 (unitário) R$ 14.550.440,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	1000

49.264.057/0001-97 - T. D. A. S. Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 17.489,0000 (unitário) R$ 17.489.000,0000 (total)	-

Marca/Fabricante:	Microcomputador				
Modelo/versão:	all in one				
Valor proposta:	R$ 17.489,0000 (unitário) R$ 17.489.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	1000

28.880.531/0002-16 - TR TECNOLOGIA E COMERCIO LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: ES	R$ 12.950,0000 (unitário) R$ 12.950.000,0000 (total)	-

Marca/Fabricante:	DELL ALL IN ONE 24 16GB 256GB 23,8" WIN11P 05ANOS				
Modelo/versão:	DELL ALL IN ONE 24 16GB 256GB 23,8" WIN11P 05ANOS				
Valor proposta:	R$ 15.000,0000 (unitário) R$ 15.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	1000

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Fornecedor	Valor ofertado	Situação
41.680.761/0001-19 - TREER TECNOLOGY LTDA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: MG	R$ 14.990,0000 (unitário) R$ 14.990.000,0000 (total)	-

Marca/Fabricante:	Lenovo				
Modelo/versão:	Lenovo ThinkCentre + acessorios				
Valor proposta:	R$ 18.000,0000 (unitário) R$ 18.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	1000

Lances do Item 1

Data/hora	Participante	Lance
30/06/2025 às 10:10:04	53.571.459/0001-01	R$ 20.466,0000
30/06/2025 às 10:10:06	11.027.350/0003-20	R$ 11.982,7100
30/06/2025 às 10:11:32	32.872.401/0001-28	R$ 13.988,0000
30/06/2025 às 10:12:28	01.319.640/0001-21	R$ 17.070,0000
30/06/2025 às 10:16:43	05.778.325/0005-47	R$ 9.990,0000
30/06/2025 às 10:17:32	41.680.761/0001-19	R$ 17.000,0000
30/06/2025 às 10:18:23	08.528.076/0001-04	R$ 13.978,0000
30/06/2025 às 10:20:08	41.680.761/0001-19	R$ 14.990,0000
30/06/2025 às 10:20:17	28.880.531/0002-16	R$ 13.880,0000
30/06/2025 às 10:20:35	08.528.076/0001-04	R$ 13.870,0000
30/06/2025 às 10:21:24	28.880.531/0002-16	R$ 13.850,0000
30/06/2025 às 10:21:28	35.689.930/0001-89	R$ 9.890,0000
30/06/2025 às 10:21:47	08.528.076/0001-04	R$ 13.840,0000
30/06/2025 às 10:21:48	28.880.531/0002-16	R$ 12.990,0000
30/06/2025 às 10:21:49	05.778.325/0005-47	R$ 9.880,0000
30/06/2025 às 10:22:08	08.528.076/0001-04	R$ 12.980,0000
30/06/2025 às 10:23:40	32.872.401/0001-28	R$ 12.970,0000
30/06/2025 às 10:23:42	08.528.076/0001-04	R$ 12.960,0000
30/06/2025 às 10:25:36	28.880.531/0002-16	R$ 12.950,0000
30/06/2025 às 10:25:36	08.528.076/0001-04	R$ 12.940,0000

Mensagens do chat do Item 1

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 10:00:02	A abertura do item 1 para lances está agendada para daqui a 10 minutos. Mantenham-se conectados.
Sistema	30/06/2025 às 10:10:02	O item 1 foi aberto. Solicitamos o envio de lances.

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Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 10:27:37	O item 1 está encerrado.
Sistema para o participante 05.778.325/0005-47	01/07/2025 às 10:39:48	Sr. Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, você foi convocado para enviar anexos para o item 1. Prazo para encerrar o envio: 12:42:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Pelo participante 05.778.325/0005-47	01/07/2025 às 11:08:40	O item 1 teve a convocação para envio de anexos encerrada às 11:08:40 de 01/07/2025. 4 anexos foram enviados pelo fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47.
Pelo participante 05.778.325/0005-47	01/07/2025 às 11:13:27	Prezado Sr. Pregoeiro, bom dia! Informo que os documentos solicitados foram enviados. Ficamos à disposição para quaisquer dúvidas.
Sistema	03/07/2025 às 11:55:33	O item 1 está na etapa de julgamento de proposta no período de intenção de recursos, com acréscimo de 10 minutos a partir de agora - até 03/07/2025 12:05:33.
Sistema	14/07/2025 às 12:05:02	O item 1 está na etapa de habilitação de fornecedores no período de intenção de recursos, com acréscimo de 10 minutos a partir de agora - até 14/07/2025 12:15:02.
Sistema	14/07/2025 às 15:18:10	A fase de recurso do item 1 está aberta até 17/07/2025.
Sistema	18/07/2025 às 00:00:00	A fase de recurso do item 1 foi finalizada no prazo previsto. Não houve registro de recursos.

Eventos do Item 1

Data/Hora	Descrição
01/07/2025 às 10:39:48	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 convocado para o envio de anexo. Prazo para encerrar o envio: 12:42:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
01/07/2025 às 11:08:40	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 finalizou o envio de anexo.
17/07/2025 às 22:14:14	Fornecedor TREER TECNOLOGY LTDA, CNPJ 41.680.761/0001-19 registra a desistência de cadastrar recurso.
25/07/2025 às 14:33:08	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 teve a proposta adjudicada, melhor lance: R$ 9.880,0000.
25/07/2025 às 14:34:54	Item homologado.

Fase Recursal do Item/Grupo *

* Maiores detalhes sobre recursos, contrarrazões, decisões e revisões deverão ser consultados no sistema.

Sessão 1

Prazos:

Intenção de recurso no julgamento:	03/07/2025 12:05:33
Intenção de recurso na habilitação:	14/07/2025 12:15:02
Recurso:	17/07/2025 23:59:59
Contrarrazão:	22/07/2025 23:59:59

Recursos realizados:

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41.680.761/0001-19 - TREER TECNOLOGY LTDA

Intenção de recurso no julgamento:		03/07/2025 12:00:53
Recurso:	(Desistiu Cadastro)	17/07/2025 22:14:14
Contrarrazões:	Não foi realizado cadastro	

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PROCURADORIA GERAL DE JUSTIÇA

TERMO DE HOMOLOGAÇÃO

UASG 925849 - PROCURADORIA GERAL DE JUSTIÇA - AM

PREGÃO 94010/2025

Às 14:35 horas do dia 25 de julho do ano de 2025, após constatada a regularidade dos atos procedimentais, a autoridade competente, ANDRE VIRGILIO BELOTA SEFFAIR, HOMOLOGA a adjudicação referente ao Processo nª 2025.001317, Pregão nª 94010/2025.

Fundamentação legal:	Lei 14.133/2021	Característica:	SRP - Registro de Preço
Critério de julgamento:	Menor Preço / Maior Desconto	Modo de disputa:	Aberto
Compra emergencial:	Não	UF da UASG:	AM
Objeto da compra:	Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 mes		
Entrega de propostas:	De 12/06/2025 às 08:00 até 30/06/2025 às 10:00		
Abertura da sessão pública:	Dia 30/06/2025 às 10:00 (horário de Brasília)		

Mensagens do chat da compra

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 10:00:02	A sessão pública está aberta. Até 1 item poderá estar em disputa simultaneamente e o período de abertura para disputa será entre 08:00 e 18:00. Haverá aviso prévio de abertura dos itens de 10 minutos. Mantenham-se conectados.
Sistema	30/06/2025 às 10:15:46	Prezados Licitantes, bom dia.
Sistema	30/06/2025 às 10:15:50	Sejam bem vindos à sessão pública do Pregão Eletrônico 94.010/2025 que tem por objeto o registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses.
Sistema	30/06/2025 às 10:15:59	Prezados, em breve será aberta a fase de disputa. Solicito atenção e comprometimento aos valores apresentados nos lances, visto que vinculam a empresa à manutenção do preço por um período de 12 meses, incumbindo a ela, portanto, a responsabilidade pela correta precificação da sua oferta.
Sistema	30/06/2025 às 10:16:10	Solicito atenção ao subitem 6.10 do Instrumento Convocatório no intuito do adequado acompanhamento do procedimento por parte de todos os interessados.
Sistema	30/06/2025 às 10:16:20	Boa disputa.
Sistema	30/06/2025 às 14:06:48	A etapa de julgamento de propostas foi iniciada. Para acompanhá-la acesse a opção "Seleção de fornecedores" na linha do tempo.
Sistema	30/06/2025 às 14:24:10	Prezados, encerrada a fase de disputa, passaremos à análise das ofertas apresentadas pelas licitantes mais bem colocadas na ordem de classificação.
Sistema	30/06/2025 às 14:26:29	No entanto, cabe tratar com os primeiros colocados para o Item 2. Solicito atenção aos interessados.
Sistema	30/06/2025 às 14:58:29	Senhores, considerando a desclassificação da proposta da licitante TROGON COMERCIO DE INFORMATICA LTDA SP para o item 2, passaremos a tratar com os licitantes seguintes. Solicito atenção aos interessados.

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Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 15:24:14	Prezados, considerando que o licitante HOUSE LTDA. não se manifestou, passaremos a tratativa com a licitante 42.816.024 LEONARDO CATIVO SOUSA. Solicito atenção à interessada.
Sistema	30/06/2025 às 15:36:05	Senhor licitante, solicito manifestação.
Sistema	30/06/2025 às 15:52:50	Senhores, em breve estarei convocando as licitantes mais bem colocadas na ordem de classificação, para envio de nova proposta ajustada ao valor dos lances para cada item.
Sistema	30/06/2025 às 15:53:19	O prazo para envio é de 2 (duas) horas contadas a partir da convocação no sistema.
Sistema	30/06/2025 às 15:57:21	Com fundamento na letra "k" do subitem 9.2 do Edital, deverá ser enviada junto à proposta de preços "documentação técnica (manuais, catálogos ou prospectos), com as características detalhadas (marca, modelo, cor, tipo de material e medidas) e imagens ilustrativas dos produtos propostos, que possibilitem a completa averiguação de conformidade com as especificações, visando facilitar a avaliação a ser realizada por técnicos deste Órgão."
Sistema	30/06/2025 às 15:59:25	Poderá ser apresentado na proposta ou junto dela, links do fabricante/fornecedor, desde que atenda, no mínimo, as exigências do dispositivo mencionado.
Sistema	30/06/2025 às 16:01:38	Em breve as licitantes mais bem classificadas serão convocadas no sistema. Solicito atenção às interessadas.
Sistema	30/06/2025 às 16:04:57	Senhores, considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retornando amanhã (01/07/2025), a partir das 10h (horário Brasília) para as convocações.
Sistema	30/06/2025 às 16:05:13	Aguardo a todos no dia e hora aqui agendados.
Sistema	30/06/2025 às 16:05:28	Obrigado pela atenção e uma excelente tarde a todos.
Sistema	01/07/2025 às 10:05:27	Prezados Licitantes, bom dia.
Sistema	01/07/2025 às 10:16:19	Retornamos aos trabalhos deste certame, considerando a convocação dos licitantes mais bem classificados na ordem dos lances para envio de propostas.
Sistema	01/07/2025 às 10:27:59	Senhores, informo que o Quadro-Resumo do Processo de Compra Nª 195.2025.SCOMS.1609045.2025.001317 com os valores estimados para cada item já se encontra disponível no Portal do MPAM, no seguinte endereço:
Sistema	01/07/2025 às 10:28:11	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	01/07/2025 às 10:29:55	Senhores, em breve estarei convocando as licitantes para envio das proposta de preços ajustadas aos lances. Solicito atenção.
Sistema	01/07/2025 às 10:54:59	Senhores, considerando a solicitação de desclassificação de proposta para o Item 4 por parte do licitante MR COMERCIO DE PECAS E ACESSORIOS LTDA., será convocado para envio de proposta o próximo licitante na ordem de classificação. Solicito atenção.
Sistema	01/07/2025 às 13:39:54	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 13:43:26	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 2 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 14:32:39	Na sequência, considerando a desclassificação das licitantes 42.816.024 LEONARDO CATIVO SOUSA (Item 2) e HOUSE LTDA. (Item 4), serão convocados novos licitantes para envio de proposta de preços. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:00:55	Prezados, em breve serão convocados licitantes para envio de propostas para os itens 2 e 4. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:08:04	Prezados, será promovido um desempate para o Item 4 entre os licitantes A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA. e 42.816.024 LEONARDO CATIVO SOUSA. Solicito atenção aos interessados.

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Responsável	Data/Hora	Mensagem
Sistema	01/07/2025 às 15:15:30	Realizado o desempate, passaremos à convocação de novo licitante para o Item 4. Solicito atenção.
Sistema	01/07/2025 às 15:17:15	Será convocado também novo licitante para o Item 2. Solicito atenção.
Sistema	01/07/2025 às 15:18:12	Estando os licitantes devidamente convocados, fico no aguardo dos solicitados documentos.
Sistema	01/07/2025 às 18:31:24	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 18:32:20	Considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retomando-os amanhã (02/07/2025), a partir das 10h (horário de Brasília).
Sistema	01/07/2025 às 18:32:44	Aguardo a todos no dia e hora aqui agendados.
Sistema	01/07/2025 às 18:33:01	Agradeço a atenção dispensada e desejo a todos um excelente fim de tarde.
Sistema	02/07/2025 às 10:02:34	Prezados, bom dia.
Sistema	02/07/2025 às 10:08:35	Senhores, informo que em breve será convocado novo licitante para envio de proposta para o item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 12:37:06	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	02/07/2025 às 12:38:31	Na sequência, será convocado novo licitante para envio de proposta para o Item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 14:52:01	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	02/07/2025 às 14:52:14	Na sequência, será convocado novo licitante para envio de proposta para o Item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 16:50:23	Prezados, considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retornando amanhã (03/07/2025), a partir das 10h (horário Brasília).
Sistema	02/07/2025 às 16:50:49	Aguardo a todos no dia e hora aqui agendados.
Sistema	02/07/2025 às 16:51:05	Finalizo desejando a todos uma excelente tarde.
Sistema	03/07/2025 às 10:11:15	Prezados Licitantes, bom dia.
Sistema	03/07/2025 às 10:11:53	Retornamos aos trabalhos deste certame considerando a convocação de novo licitante para envio de proposta para o Item 4.
Sistema	03/07/2025 às 10:12:35	Em breve estarei convocando novo licitante para envio de proposta ajusta ao lance para o Item 4. Solicito atenção ao interessado.
Sistema	03/07/2025 às 10:24:21	Prezados, em breve estarei convocando novo licitante para envio de proposta ajusta ao lance para o Item 4. Solicito atenção ao interessado.
Sistema	03/07/2025 às 10:38:26	Estando o Licitante devidamente convocado, fico no aguardo dos solicitados documentos. Obrigado!
Sistema	03/07/2025 às 11:46:29	Senhores Licitantes, recebidos os documentos referente ao Item 4, informo que os mesmos serão encaminhados à análise por parte do setor técnico deste Órgão Ministerial.
Sistema	03/07/2025 às 11:47:11	Senhores, considerando a proposta apresentada pela licitante E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 para o item 1, informo o seguinte:
Sistema	03/07/2025 às 11:48:53	Submetida a proposta e os documentos técnicos enviados pela licitante classificada, o setor técnico DTIC, através do Parecer Nº 15.2025.SIET.1661793.2025.001317, manifestou-se "pela aceitabilidade do produto ofertado".

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Responsável	Data/Hora	Mensagem
Sistema	03/07/2025 às 11:50:25	Informo que o referido Parecer encontra-se disponível no Portal do MPAM, acessível a todos os interessados, no seguinte endereço: https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	03/07/2025 às 11:53:21	Senhores, considerando a manifestação técnica expressa no Parecer Nª 15.2025.SIET e o atendimento a todas as exigências formais do Edital referente à proposta de preços, este Pregoeiro decide pela ACEITAÇÃO da oferta do licitante E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 para o item 1.
Sistema	07/07/2025 às 15:57:44	Prezados Licitantes, boa tarde.
Sistema	07/07/2025 às 15:58:26	Informo que retornaremos aos trabalhos deste certame amanhã (08/07/2025), a partir das 14h (horário de Brasília).
Sistema	07/07/2025 às 15:58:41	Aguardo a todos no dia e hora aqui agendados. Obrigado.
Sistema	08/07/2025 às 14:11:23	Prezados licitantes, boa tarde.
Sistema	08/07/2025 às 14:14:38	Prezados, retornamos aos trabalhos deste certame considerando as propostas dos seguintes licitantes:
Sistema	08/07/2025 às 14:16:14	a) TORINO INFORMÁTICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, para o Item 2; b) POSITIVO TECNOLOGIA S/A (Filial), CNPJ (MF) n.ª 81.243.735/0009-03, para o Item 3; e c) E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, para o Item 4
Sistema	08/07/2025 às 14:24:07	Encaminhadas as ofertas ao setor técnico para análise, o referido setor manifestou-se da seguinte forma:
Sistema	08/07/2025 às 14:26:15	Parecer Nª 16.2025.SIET.1661858.2025.001317 - TORINO INFORMÁTICA LTDA., ITEM 2 - Pela exposição de motivos, depreende-se que: a) O teclado não atende; b) O requisito de leitor biométrico no mouse e teclado não foi atendida; entre outros.
Sistema	08/07/2025 às 14:27:56	Parecer Nª 18.2025.SIET.1664620.2025.001317 - POSITIVO TECNOLOGIA S/A (FILIAL) - ITEM 3 - Recomenda-se, portanto, caso a licitante seja instada a reapresentar a proposta técnica, que ela esteja em conformidade com o disposto no subitem 18.14, informando marca, modelo e documentação comprobatória específica de todos os componentes, de modo a permitir a verificação inequívoca da compatibilidade do produto ofertado com o objeto licitado.
Sistema	08/07/2025 às 14:28:43	Parecer Nª 19.2025.SIET.1665305.2025.001317 - ER SOLUÇÕES INFORMÁTICA LTDA. - ITEM 4 - O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica OPINA pela aceitabilidade do produto ofertado.
Sistema	08/07/2025 às 14:30:03	Assim, com fundamento na análise dos Pareceres aqui apresentados, Este Pregoeiro decide:
Sistema	08/07/2025 às 14:32:07	a) Recusar a proposta de preços do licitante TORINO INFORMÁTICA LTDA., para o ITEM 2, em conformidade ao Parecer Nª 16.2025.SIET.1661858.2025.001317 e Item 10.3.2 do Edital do certame.
Sistema	08/07/2025 às 14:35:55	b) Diligenciar o licitante POSITIVO TECNOLOGIA S/A (FILIAL) - para que apresente nos documentos de proposta enviados para o Item 3, o pleno atendimento aos requisitos técnicos exigidos no Termo de Referência Nª 2.2025.DTIC.1525128.2025.001317, Anexo I ao Edital do certame.
Sistema	08/07/2025 às 14:37:36	Para tal, será aberto o prazo de 2 (duas horas para envio de documento complementar em providência à solicitação constante do Parecer Nª 18.2025.SIET.1664620.2025.001317.
Sistema	08/07/2025 às 14:39:05	c) Aceitar a proposta de preços apresentada pelo licitante ER SOLUÇÕES INFORMÁTICA LTDA., para o ITEM 4, em conformidade ao Parecer Nª 19.2025.SIET.1665305.2025.001317 e ao Item 10 do Edital do certame.
Sistema	08/07/2025 às 14:40:00	Prezados, informo que os pareceres mencionados encontram-se disponíveis e acessíveis a todos os interessados no Portal do MPAM no seguinte endereço:
Sistema	08/07/2025 às 14:40:33	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis

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Responsável	Data/Hora	Mensagem
Sistema	08/07/2025 às 14:54:06	Prezado licitante POSITIVO TECNOLOGIA S/A (FILIAL), em breve V. Sa. será convocado para providências conforme apresentado nesse chat e no Parecer Nª 18.2025.SIET.1664620.2025.001317.
Sistema	08/07/2025 às 14:54:24	Solicito atenção.
Sistema	08/07/2025 às 14:56:10	Prezados, considerando a desclassificação da proposta do licitante TORINO INFORMÁTICA LTDA., para o ITEM 2, informo que em breve será convocado novo licitante para envio de proposta para o Item. Solicito atenção aos interessados.
Sistema	08/07/2025 às 15:00:40	Prezados, tomadas as devidas providências e convocados os licitantes, fico no aguardo dos solicitados documentos.
Sistema	08/07/2025 às 17:25:18	Senhores, recebidos os documentos, informo que os mesmos serão encaminhados ao setor técnico para análise.
Sistema	08/07/2025 às 17:26:29	Assim, encerraremos os trabalhos por hoje, retornando em data posterior devidamente informada através desse chat, em tempo hábil ao acompanhamento de todos os interessados.
Sistema	08/07/2025 às 17:26:39	Agradeço a atenção dispensada.
Sistema	08/07/2025 às 17:26:52	Finalizo desejando uma excelente tarde a todos.
Sistema	10/07/2025 às 11:36:20	Prezados, bom dia.
Sistema	10/07/2025 às 11:36:57	Informo que retornaremos aos trabalhos deste certame amanhã (11/07/2025), a partir das 10h (horário Brasília).
Sistema	10/07/2025 às 11:37:33	Aguardo a todos no dia e hora aqui agendados.
Sistema	11/07/2025 às 10:00:40	Prezados Licitantes, bom dia.
Sistema	11/07/2025 às 10:21:39	Retornamos aos trabalhos deste certame considerando as propostas apresentadas pelos licitantes POSITIVO TECNOLOGIA S/A (Filial), para o Item 3 e E.R. SOLUCOES INFORMATICA LTDA., para o Item 2.
Sistema	11/07/2025 às 10:39:45	Senhores, recebidos os documentos de propostas e encaminhados ao setor técnico competente para análise, obtivemos os seguintes resultados:
Sistema	11/07/2025 às 10:40:56	a) Parecer Nª 21.2025.SIET.1668662.2025.001317 - ER SOLUÇÕES INFORMÁTICA LTDA., para o ITEM 2 - Conclusão - O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica OPINA pela aceitabilidade do produto ofertado.
Sistema	11/07/2025 às 10:43:00	b) Parecer Nª 22.2025.SIET.1668772.2025.001317 - POSITIVO TECNOLOGIA S/A (FILIAL), para o Item 3 - Conclusão - Após análise da documentação apresentada pela licitante [...] foram observados alguns pontos inconclusivos, marcados como . Os pontos marcados com , são exigências que não foi possível comprovar sua aderência na segunda oportunidade de envio de documentação técnica.
Sistema	11/07/2025 às 10:44:33	Senhores, informo que o Parecer Nª 21.2025.SIET.1668662.2025.001317 e o Parecer Nª 22.2025.SIET.1668772.2025.001317 encontram-se disponíveis no Portal do MPAM, no seguinte
Sistema	11/07/2025 às 10:44:40	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	11/07/2025 às 10:46:44	Senhores, considerando os resultados das análises apresentados nos pareceres, informo o seguinte:
Sistema	11/07/2025 às 11:18:42	a) para saneamento das pendências apontadas nos pareceres, as licitantes serão convocadas para envio de documentos que comprovem o atendimento às exigências apontadas.
Sistema	11/07/2025 às 11:19:44	Assim, em breve convocarei as licitantes no sistema. Solicito atenção aos interessados.
Sistema	11/07/2025 às 11:25:58	Estando os licitantes devidamente convocados, fico no aguardo dos solicitados documentos.
Sistema	11/07/2025 às 14:23:53	Senhores, boa tarde.
Sistema	11/07/2025 às 14:25:25	Considerando o envio dos documentos solicitados referentes ao Item 2 por parte do Licitante E.R. SOLUCOES INFORMATICA LTDA. e sendo os mesmos suficientes para o pleno atendimento da solicitação, informo que:

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Responsável	Data/Hora	Mensagem
Sistema	11/07/2025 às 14:27:08	Este Pregoeiro decide pela Aceitação da proposta de preços do licitante E.R. SOLUCOES INFORMATICA LTDA. para o Item 2, pelo pleno atendimento às exigências técnicas e formais do Edital, referentes à proposta e em conformidade ao Parecer Nª 21.2025.SIET.1668662.2025.001317.
Sistema	11/07/2025 às 16:52:49	Prezados, recebidos os documentos referente ao Item 3, informo que os mesmos serão encaminhados para análise do setor técnico competente.
Sistema	11/07/2025 às 16:54:57	Considerando a hora avançada, encerraremos os trabalhos por hoje, retornando na segunda-feira (14/07/2025), a partir das 11h (horário de Brasília), para continuação dos trabalhos.
Sistema	11/07/2025 às 16:55:26	Aguardo a todos no dia e hora aqui agendados.
Sistema	11/07/2025 às 16:55:54	Agradeço a atenção dispensada. Finalizo desejando uma boa tarde e um excelente fim de semana a todos.
Sistema	14/07/2025 às 11:15:08	Prezados Licitantes, bom dia.
Sistema	14/07/2025 às 11:45:13	Senhores, considerando os documentos de Habilitação apresentados pelo Licitante E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, informo que os mesmos atendem a todas as exigências estabelecidas no instrumento convocatório.
Sistema	14/07/2025 às 11:45:42	Nesse sentido, este Pregoeiro decide pela HABILITAÇÃO do licitante E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47.
Sistema	14/07/2025 às 12:02:53	Senhores, em breve estarei habilitando a licitante no próprio sistema. Solicito atenção.
Sistema	14/07/2025 às 15:26:33	Prezados Licitantes, recebidos os documentos apresentados pelo licitante POSITIVO TECNOLOGIA S/A (FILIAL), referente ao Item 3, em resposta às solicitações constantes do Ofício Nª 256.2025.CPL.1667127.2025.001317, informo o seguinte:
Sistema	14/07/2025 às 15:29:43	Senhores, apenas retificando, as solicitações constam do Parecer Nª 22.2025.SIET.1668772.2025.001317 e não do Ofício Nª 256.2025.CPL.1667127.2025.001317.
Sistema	14/07/2025 às 15:31:35	O setor técnico, através do PARECER Nª 22.2025.SIET.1668772.2025.001317, manifestou-se da seguinte forma:
Sistema	14/07/2025 às 15:40:50	Senhores, retificando, o setor técnico, através do PARECER Nª 25.2025.SIET.1671649.2025.001317, manifestou-se da seguinte forma:
Sistema	14/07/2025 às 15:42:58	3. Conclusão - Não sendo possível constatar os pontos controversos, e não sendo atendido a solicitação para que o licitante, em sua proposta, declare expressamente que a garantia abrange acidentes, inclusive danos não intencionais, tais como QUEDA, TELA QUEBRADA, DERRAMAMENTO DE LÍQUIDOS, OSCILAÇÃO DE ENERGIA, não se limitando às ocorrências supracitadas, sendo o rol apresentado uma lista não exaustiva.
Sistema	14/07/2025 às 15:43:42	Informo que o referido PARECER Nª 25.2025.SIET.1671649.2025.001317 encontra-se disponível no Portal do MPAM, no seguinte endereço:
Sistema	14/07/2025 às 15:44:09	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	14/07/2025 às 15:46:55	Prezados, considerando o Parecer Nª 25.2025.SIET.1671649.2025.001317 e o subitem 10.7.1. c/c 10.3.5. do Edital, informo que a proposta do licitante POSITIVO TECNOLOGIA S/A, CNPJ Nª. 81.243.735/0001-48 para o Item 3 será desclassificada.
Sistema	14/07/2025 às 15:47:58	Na oportunidade, informo que será convocado novo licitante para envio de proposta para o Item 3, nos termos do subitem 10.11 e 9.1. do Edital. Solicito atenção.
Sistema	15/07/2025 às 13:57:49	Prezados, boa tarde. Informo que amanhã (16/07/2025) retornaremos aos trabalhos deste certame, a partir das 14h (horário Brasília).
Sistema	15/07/2025 às 13:58:06	Aguardo a todos no dia e hora aqui agendados. Obrigado.
Sistema	16/07/2025 às 14:04:53	Prezados Licitantes, boa tarde.
Sistema	16/07/2025 às 14:05:31	Retornamos aos trabalhos deste certame considerando a convocação do licitante HOUSE LTDA, CNPJ 35.689.930/0001-89 para envio de proposta ajustada ao lance para o Item 3.

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Responsável	Data/Hora	Mensagem
Sistema	16/07/2025 às 14:07:35	A proposta não foi encaminhada, portanto, a proposta da licitante será recusada em conformidade ao subitem 9.11 c/c subitem 10.3.5 do Edital.
Sistema	16/07/2025 às 14:08:10	Na sequência, será convocado novo licitante para envio de proposta para o Item 3. Solicito atenção aos interessados.
Sistema	16/07/2025 às 14:11:08	Estando o licitante devidamente convocado, fico no aguardo dos solicitados documentos.
Sistema	16/07/2025 às 18:28:03	Prezados, encerraremos os trabalhos por hoje, retornando amanhã (17/07/2025), a partir das 11h (horário Brasília).
Sistema	16/07/2025 às 18:28:12	Aguardo a todos no dia e hora aqui agendados.
Sistema	17/07/2025 às 11:21:56	Prezados Licitantes, bom dia.
Sistema	17/07/2025 às 11:23:36	Prezados, retornamos aos trabalhos deste certame considerando o não envio de proposta de preços ajustada ao lance, por parte da licitante HOUSE LTDA. para o Item 3.
Sistema	17/07/2025 às 11:39:17	Perdão senhores, retificando, a última licitante convocada e que não enviou proposta para o Item 3 foi a empresa MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01.
Sistema	17/07/2025 às 11:40:12	Assim, informo que a proposta da licitante será recusada e convocado novo licitante para envio de proposta ajustada para o item 3. Solicito atenção ao interessado.
Sistema	17/07/2025 às 11:46:27	Prezados, antes da convocação de novo licitante, passaremos ao procedimento de desempate ficto entre licitantes.
Sistema	17/07/2025 às 11:46:37	Solicito atenção às interessadas. Obrigado!
Sistema	17/07/2025 às 11:59:22	Prezados, encerrado o desempate e mantida a classificação, informo que o novo licitante será convocado para envio de proposta ajustada ao lance para o Item 3. Solicito atenção ao interessado.
Sistema	17/07/2025 às 12:05:01	Estando a licitante devidamente convocado, fico no aguardo dos solicitados documentos.
Sistema	17/07/2025 às 12:16:20	Prezado, acolho a solicitação visto que a solicitação foi realizada na hora do almoço.
Sistema	18/07/2025 às 10:27:40	Prezados Licitantes, informo que tivemos problemas de conexão no sistema no dia de ontem e que retornaremos aos trabalhos deste certame na segunda feira (21/07/2025) , a partir das 10h (horário Brasília).
Sistema	18/07/2025 às 10:27:51	Aguardo a todos no dia e hora aqui agendados.
Sistema	18/07/2025 às 10:28:02	Um bom dia e um excelente fim de semana a todos.
Sistema	21/07/2025 às 10:54:36	Prezados, bom dia.
Sistema	21/07/2025 às 10:55:20	Infelizmente não foi possível reabrir no horário agendado por questões de problemas de conexão, já resolvidos.
Sistema	21/07/2025 às 10:56:02	Assim, informo que às 11h (Horário Brasília), retomaremos os trabalhos. Solicito atenção. Obrigado!
Sistema	21/07/2025 às 11:13:15	Senhores, considerando a solicitação de envio da licitante de apenas 1 (um) documento, informo que será solicitado a título de documento complementar (subitem 10.9) Edital.
Sistema	21/07/2025 às 11:13:24	Solicito atenção à interessada.
Sistema	21/07/2025 às 13:22:53	Prezados, recebidos os documentos, informo os mesmos serão encaminhados para o setor técnico para análise e manifestação.
Sistema	21/07/2025 às 13:23:36	Nesse sentido, informo que encerraremos os trabalhos por hoje, retornando em data posterior devidamente informado através desse chat e em tempo hábil para o acompanhamento de todos os interessados.
Sistema	21/07/2025 às 13:24:07	Agradeço a atenção de todos e finalizo desejando-lhes uma excelente semana.
Sistema	25/07/2025 às 10:24:29	Prezados, informo que retornaremos aos trabalhos deste certame segunda-feira (28/07/2025), a partir das 10h (horário Brasília).

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Responsável	Data/Hora	Mensagem
Sistema	25/07/2025 às 10:24:41	Aguardo a todos no dia e hora aqui agendados.
Sistema	25/07/2025 às 10:25:03	Obrigado! Um excelente fim de semana a todos.

Eventos da compra

Data/Hora	Descrição
30/06/2025 às 10:00:02	Abertura da sessão pública
30/06/2025 às 14:06:48	Início da etapa de julgamento de propostas

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Item 2 - Microcomputador

Microcomputador Memória Ram: 32GB, Núcleos Por Processador: Superior A 8, Armazenamento Hdd: Sem Disco HddGB, Armazenamento Ssd: Até 2 Tb, Monitor: Sem MonitorPOL, Componentes Adicionais: Com Teclado E Mouse, Sistema Operacional: Proprietário, Garantia On Site: 36MESES, Gabinete: Torre, Outros Recursos: Conforme Edital

Quantidade:	50	Valor estimado:	R$ 25.160,6300 (unitário)
Unidade de fornecimento:	Unidade		R$ 1.258.031,5000 (total)
Intervalo mínimo entre lances:	R$ 10,0000	Situação:	Adjudicado e Homologado
Critério de julgamento:	Menor Preço		

Adjudicado e Homologado por CPF ***.287.***-*3 - ANDRE VIRGILIO BELOTA SEFFAIR para E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, melhor lance: R$ 20.300,0000 (unitário) / R$ 1.015.000,0000 (total)

Propostas do Item 2

Benefício Me/Epp: Conforme Art. 3ª da Lei Complementar nª 123, de 14 de dezembro de 2006
Programa de integridade: Conforme termos previsos na Lei nª 14.133/2021 e no Decreto nª 12.304/2024

Fornecedor	Valor ofertado	Situação
42.816.024/0001-63 - 42.816.024 LEONARDO CATIVO SOUSA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: AM	R$ 10.000,0000 (unitário) R$ 500.000,0000 (total)	Proposta desclassificada

Marca/Fabricante:	Conf TR				
Modelo/versão:	Conf tR				
Valor proposta:	R$ 10.000,0000 (unitário) R$ 500.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	50

Fornecedor	Valor ofertado	Situação
51.750.663/0001-64 - 51.750.663 THIERREZ MATHEUS ALVES SALES Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: DF	R$ 80.000,0000 (unitário) R$ 4.000.000,0000 (total)	-

Marca/Fabricante:	Microcomputador				
Modelo/versão:	Microcomputador				
Valor proposta:	R$ 80.000,0000 (unitário) R$ 4.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	50

Fornecedor	Valor ofertado	Situação
01.319.640/0001-21 - AJL INDUSTRIA E COMERCIO LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: AM	R$ 55.342,0000 (unitário) R$ 2.767.100,0000 (total)	-

Marca/Fabricante:	LENOVO				
Modelo/versão:	THINKSTATION P3 TORRE				
Valor proposta:	R$ 75.000,0000 (unitário) R$ 3.750.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	50

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Fornecedor	Valor ofertado	Situação
52.593.051/0001-78 - CENTERDATA COMERCIO DE PRODUTOS DE INFORMATICA E SERVICOS LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 31.000,0000 (unitário) R$ 1.550.000,0000 (total)	-

Marca/Fabricante: Lenovo
Modelo/versão: Lenovo
Valor proposta: R$ 50.000,0000 (unitário) R$ 2.500.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

36.770.097/0001-69 - CIB EMPREENDIMENTOS IMOBILIARIOS LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: MG	R$ 102.099.999,9999 (unitário) R$ 5.104.999.999,9950 (total)	-

Marca/Fabricante: Microcomputador Memória Ram: 32GB, Núcleos Por Pro
Modelo/versão: Microcomputador Memória Ram: 32GB, Núcleos Por Pro
Valor proposta: R$ 102.099.999,9999 (unitário) R$ 5.104.999.999,9950 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

05.778.325/0005-47 - E.R. SOLUCOES INFORMATICA LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: ES	R$ 20.300,0000 (unitário) R$ 1.015.000,0000 (total)	Proposta adjudicada

Marca/Fabricante: LENOVO
Modelo/versão: P3 TW + T27hv-30 + T27i-30
Valor proposta: R$ 22.000,0000 (unitário) R$ 1.100.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

53.571.459/0001-01 - ELLOELLA DISTRIBUIDORA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: PE	R$ 58.159,8000 (unitário) R$ 2.907.990,0000 (total)	-

Marca/Fabricante: DELL
Modelo/versão: PRECISION 3680 + P2724DEB + P2725H
Valor proposta: R$ 64.622,0000 (unitário) R$ 3.231.100,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

35.689.930/0001-89 - HOUSE LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: AM	R$ 10.000,0000 (unitário) R$ 500.000,0000 (total)	Proposta desclassificada

Marca/Fabricante: Dell
Modelo/versão: Conforme tr
Valor proposta: R$ 10.000,0000 (unitário) R$ 500.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50

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Fornecedor	Valor ofertado	Situação
08.528.076/0001-04 - MICROBUSINESS TECNOLOGIA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: SC	R$ 31.990,0000 (unitário) R$ 1.599.500,0000 (total)	-

Marca/Fabricante:	DELL				
Modelo/versão:	PRECISION 3680				
Valor proposta:	R$ 45.000,0000 (unitário) R$ 2.250.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	50

32.872.401/0001-28 - PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 29.490,0000 (unitário) R$ 1.474.500,0000 (total)	-

Marca/Fabricante:	Lenovo				
Modelo/versão:	ThinkStation Série P				
Valor proposta:	R$ 29.998,0000 (unitário) R$ 1.499.900,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	50

47.172.975/0001-60 - RENATO PALLADINO DE FREITAS 41131128869 Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: SP	R$ 28.999,0000 (unitário) R$ 1.449.950,0000 (total)	-

Marca/Fabricante:	DELL				
Modelo/versão:	Workstation Precision + Monitor				
Valor proposta:	R$ 29.500,0000 (unitário) R$ 1.475.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	50

30.948.812/0001-24 - RL INFORMATICA LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: PE	R$ 35.990,0000 (unitário) R$ 1.799.500,0000 (total)	-

Marca/Fabricante:	Lenovo				
Modelo/versão:	P3 Tower + Acessórios				
Valor proposta:	R$ 40.000,0000 (unitário) R$ 2.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	50

49.853.502/0001-54 - SNT SOLUCOES TECNOLOGICAS LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 44.850,0000 (unitário) R$ 2.242.500,0000 (total)	-

Marca/Fabricante:	LENOVO				
Modelo/versão:	Lenovo THINKSTATION P3 TW				
Valor proposta:	R$ 45.000,0000 (unitário) R$ 2.250.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	50

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Fornecedor	Valor ofertado	Situação
49.264.057/0001-97 - T. D. A. S. Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 23.489,0000 (unitário) R$ 1.174.450,0000 (total)	-
Marca/Fabricante: Microcomputador Modelo/versão: pc Valor proposta: R$ 23.489,0000 (unitário) R$ 1.174.450,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50		
03.619.767/0005-15 - TORINO INFORMATICA LTDA.. Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: ES	R$ 20.280,0000 (unitário) R$ 1.014.000,0000 (total)	Proposta desclassificada
Marca/Fabricante: HP Modelo/versão: WORK HP Valor proposta: R$ 30.000,0000 (unitário) R$ 1.500.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50		
28.880.531/0002-16 - TR TECNOLOGIA E COMERCIO LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: ES	R$ 42.498,0000 (unitário) R$ 2.124.900,0000 (total)	-
Marca/Fabricante: DELL PRECISION 3680 32GB 256GB+1TB GPU 8GB WIN11P Modelo/versão: DELL PRECISION 3680 32GB 256GB+1TB GPU 8GB WIN11P Valor proposta: R$ 50.000,0000 (unitário) R$ 2.500.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50		
41.680.761/0001-19 - TREER TECNOLOGY LTDA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: MG	R$ 42.488,0000 (unitário) R$ 2.124.400,0000 (total)	-
Marca/Fabricante: Dell Modelo/versão: Precision Valor proposta: R$ 52.000,0000 (unitário) R$ 2.600.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50		
18.563.457/0001-70 - TROGON COMERCIO DE INFORMATICA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: SP	R$ 2.000,0000 (unitário) R$ 100.000,0000 (total)	Proposta desclassificada
Marca/Fabricante: DELL Modelo/versão: DELL P2425H Valor proposta: R$ 2.000,0000 (unitário) R$ 100.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 50		

Lances do Item 2

Data/hora	Participante	Lance
30/06/2025 às 10:37:38	53.571.459/0001-01	R$ 58.159,8000
30/06/2025 às 10:41:21	01.319.640/0001-21	R$ 55.342,0000

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Data/hora	Participante	Lance
30/06/2025 às 10:44:07	28.880.531/0002-16	R$ 44.888,0000
30/06/2025 às 10:44:54	03.619.767/0005-15	R$ 29.000,0000
30/06/2025 às 10:45:16	49.853.502/0001-54	R$ 44.850,0000
30/06/2025 às 10:45:58	08.528.076/0001-04	R$ 39.990,0000
30/06/2025 às 10:46:01	30.948.812/0001-24	R$ 39.980,0000
30/06/2025 às 10:46:15	28.880.531/0002-16	R$ 43.500,0000
30/06/2025 às 10:46:31	08.528.076/0001-04	R$ 39.970,0000
30/06/2025 às 10:46:33	32.872.401/0001-28	R$ 29.490,0000
30/06/2025 às 10:46:34	30.948.812/0001-24	R$ 39.960,0000
30/06/2025 às 10:46:35	41.680.761/0001-19	R$ 49.990,0000
30/06/2025 às 10:46:52	08.528.076/0001-04	R$ 39.950,0000
30/06/2025 às 10:46:53	30.948.812/0001-24	R$ 39.940,0000
30/06/2025 às 10:47:22	08.528.076/0001-04	R$ 39.930,0000
30/06/2025 às 10:47:23	30.948.812/0001-24	R$ 39.920,0000
30/06/2025 às 10:47:41	08.528.076/0001-04	R$ 39.910,0000
30/06/2025 às 10:47:43	30.948.812/0001-24	R$ 39.900,0000
30/06/2025 às 10:48:01	08.528.076/0001-04	R$ 39.890,0000
30/06/2025 às 10:48:02	30.948.812/0001-24	R$ 39.880,0000
30/06/2025 às 10:48:19	08.528.076/0001-04	R$ 39.870,0000
30/06/2025 às 10:48:21	30.948.812/0001-24	R$ 39.860,0000
30/06/2025 às 10:48:31	47.172.975/0001-60	R$ 28.999,0000
30/06/2025 às 10:48:49	08.528.076/0001-04	R$ 39.850,0000
30/06/2025 às 10:48:54	30.948.812/0001-24	R$ 39.840,0000
30/06/2025 às 10:49:13	08.528.076/0001-04	R$ 39.830,0000
30/06/2025 às 10:49:19	30.948.812/0001-24	R$ 39.820,0000
30/06/2025 às 10:49:37	08.528.076/0001-04	R$ 39.810,0000
30/06/2025 às 10:49:38	30.948.812/0001-24	R$ 39.800,0000
30/06/2025 às 10:49:55	08.528.076/0001-04	R$ 39.790,0000
30/06/2025 às 10:49:58	30.948.812/0001-24	R$ 39.780,0000
30/06/2025 às 10:50:01	35.689.930/0001-89	R$ 2.100,0000 *
30/06/2025 às 10:50:19	08.528.076/0001-04	R$ 39.770,0000
30/06/2025 às 10:50:24	30.948.812/0001-24	R$ 39.760,0000
30/06/2025 às 10:50:40	08.528.076/0001-04	R$ 39.750,0000
30/06/2025 às 10:50:43	30.948.812/0001-24	R$ 39.740,0000

(lances com * foram excluídos)

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Data/hora	Participante	Lance
30/06/2025 às 10:51:02	08.528.076/0001-04	R$ 39.730,0000
30/06/2025 às 10:51:08	30.948.812/0001-24	R$ 39.720,0000
30/06/2025 às 10:51:26	08.528.076/0001-04	R$ 39.710,0000
30/06/2025 às 10:51:27	30.948.812/0001-24	R$ 39.700,0000
30/06/2025 às 10:51:44	08.528.076/0001-04	R$ 39.690,0000
30/06/2025 às 10:51:46	30.948.812/0001-24	R$ 39.680,0000
30/06/2025 às 10:52:05	08.528.076/0001-04	R$ 39.670,0000
30/06/2025 às 10:52:11	30.948.812/0001-24	R$ 39.660,0000
30/06/2025 às 10:52:29	08.528.076/0001-04	R$ 39.650,0000
30/06/2025 às 10:52:30	30.948.812/0001-24	R$ 39.640,0000
30/06/2025 às 10:52:47	08.528.076/0001-04	R$ 39.630,0000
30/06/2025 às 10:52:50	30.948.812/0001-24	R$ 39.620,0000
30/06/2025 às 10:53:08	08.528.076/0001-04	R$ 39.610,0000
30/06/2025 às 10:53:09	30.948.812/0001-24	R$ 39.600,0000
30/06/2025 às 10:53:26	08.528.076/0001-04	R$ 39.590,0000
30/06/2025 às 10:53:28	30.948.812/0001-24	R$ 39.580,0000
30/06/2025 às 10:53:44	08.528.076/0001-04	R$ 39.570,0000
30/06/2025 às 10:53:47	30.948.812/0001-24	R$ 39.560,0000
30/06/2025 às 10:54:05	08.528.076/0001-04	R$ 39.550,0000
30/06/2025 às 10:54:05	30.948.812/0001-24	R$ 39.540,0000
30/06/2025 às 10:54:29	08.528.076/0001-04	R$ 39.530,0000
30/06/2025 às 10:54:31	30.948.812/0001-24	R$ 39.520,0000
30/06/2025 às 10:54:47	08.528.076/0001-04	R$ 39.510,0000
30/06/2025 às 10:54:49	30.948.812/0001-24	R$ 39.500,0000
30/06/2025 às 10:55:05	08.528.076/0001-04	R$ 39.490,0000
30/06/2025 às 10:55:08	30.948.812/0001-24	R$ 39.480,0000
30/06/2025 às 10:55:26	08.528.076/0001-04	R$ 39.470,0000
30/06/2025 às 10:55:27	30.948.812/0001-24	R$ 39.460,0000
30/06/2025 às 10:55:44	08.528.076/0001-04	R$ 39.450,0000
30/06/2025 às 10:55:46	30.948.812/0001-24	R$ 39.440,0000
30/06/2025 às 10:56:02	08.528.076/0001-04	R$ 39.430,0000
30/06/2025 às 10:56:05	30.948.812/0001-24	R$ 39.420,0000
30/06/2025 às 10:56:16	05.778.325/0005-47	R$ 21.990,0000
30/06/2025 às 10:56:32	08.528.076/0001-04	R$ 39.410,0000

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Data/hora	Participante	Lance
30/06/2025 às 10:56:37	30.948.812/0001-24	R$ 39.400,0000
30/06/2025 às 10:56:37	03.619.767/0005-15	R$ 25.000,0000
30/06/2025 às 10:56:53	08.528.076/0001-04	R$ 39.390,0000
30/06/2025 às 10:56:55	30.948.812/0001-24	R$ 39.380,0000
30/06/2025 às 10:57:11	08.528.076/0001-04	R$ 39.370,0000
30/06/2025 às 10:57:14	30.948.812/0001-24	R$ 39.360,0000
30/06/2025 às 10:57:19	03.619.767/0005-15	R$ 22.000,0000
30/06/2025 às 10:57:36	08.528.076/0001-04	R$ 39.350,0000
30/06/2025 às 10:57:39	30.948.812/0001-24	R$ 39.340,0000
30/06/2025 às 10:57:57	08.528.076/0001-04	R$ 39.330,0000
30/06/2025 às 10:57:59	30.948.812/0001-24	R$ 39.320,0000
30/06/2025 às 10:58:05	03.619.767/0005-15	R$ 21.800,0000
30/06/2025 às 10:58:24	08.528.076/0001-04	R$ 39.310,0000
30/06/2025 às 10:58:25	30.948.812/0001-24	R$ 39.300,0000
30/06/2025 às 10:58:42	08.528.076/0001-04	R$ 39.290,0000
30/06/2025 às 10:58:44	30.948.812/0001-24	R$ 39.280,0000
30/06/2025 às 10:59:00	08.528.076/0001-04	R$ 39.270,0000
30/06/2025 às 10:59:03	41.680.761/0001-19	R$ 43.490,0000
30/06/2025 às 10:59:04	30.948.812/0001-24	R$ 39.260,0000
30/06/2025 às 10:59:21	08.528.076/0001-04	R$ 39.250,0000
30/06/2025 às 10:59:23	05.778.325/0005-47	R$ 21.790,0000
30/06/2025 às 10:59:29	30.948.812/0001-24	R$ 39.240,0000
30/06/2025 às 10:59:48	08.528.076/0001-04	R$ 39.230,0000
30/06/2025 às 10:59:55	30.948.812/0001-24	R$ 39.220,0000
30/06/2025 às 11:00:03	03.619.767/0005-15	R$ 21.700,0000
30/06/2025 às 11:00:21	08.528.076/0001-04	R$ 39.210,0000
30/06/2025 às 11:00:26	30.948.812/0001-24	R$ 39.200,0000
30/06/2025 às 11:00:42	08.528.076/0001-04	R$ 39.190,0000
30/06/2025 às 11:00:45	30.948.812/0001-24	R$ 39.180,0000
30/06/2025 às 11:01:02	05.778.325/0005-47	R$ 21.690,0000
30/06/2025 às 11:01:10	03.619.767/0005-15	R$ 21.500,0000
30/06/2025 às 11:01:27	08.528.076/0001-04	R$ 39.170,0000
30/06/2025 às 11:01:29	30.948.812/0001-24	R$ 39.160,0000
30/06/2025 às 11:01:44	05.778.325/0005-47	R$ 21.490,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:02:00	08.528.076/0001-04	R$ 39.150,0000
30/06/2025 às 11:02:04	30.948.812/0001-24	R$ 39.140,0000
30/06/2025 às 11:02:21	08.528.076/0001-04	R$ 39.130,0000
30/06/2025 às 11:02:23	30.948.812/0001-24	R$ 39.120,0000
30/06/2025 às 11:02:39	08.528.076/0001-04	R$ 39.110,0000
30/06/2025 às 11:02:42	30.948.812/0001-24	R$ 39.100,0000
30/06/2025 às 11:02:57	08.528.076/0001-04	R$ 39.090,0000
30/06/2025 às 11:03:01	30.948.812/0001-24	R$ 39.080,0000
30/06/2025 às 11:03:18	08.528.076/0001-04	R$ 39.070,0000
30/06/2025 às 11:03:20	30.948.812/0001-24	R$ 39.060,0000
30/06/2025 às 11:03:37	08.528.076/0001-04	R$ 39.050,0000
30/06/2025 às 11:03:39	30.948.812/0001-24	R$ 39.040,0000
30/06/2025 às 11:03:53	03.619.767/0005-15	R$ 21.450,0000
30/06/2025 às 11:04:10	08.528.076/0001-04	R$ 39.030,0000
30/06/2025 às 11:04:10	30.948.812/0001-24	R$ 39.020,0000
30/06/2025 às 11:04:13	05.778.325/0005-47	R$ 21.400,0000
30/06/2025 às 11:04:31	08.528.076/0001-04	R$ 39.010,0000
30/06/2025 às 11:04:35	30.948.812/0001-24	R$ 39.000,0000
30/06/2025 às 11:04:52	08.528.076/0001-04	R$ 38.990,0000
30/06/2025 às 11:04:54	30.948.812/0001-24	R$ 38.980,0000
30/06/2025 às 11:05:10	08.528.076/0001-04	R$ 38.970,0000
30/06/2025 às 11:05:13	30.948.812/0001-24	R$ 38.960,0000
30/06/2025 às 11:05:31	08.528.076/0001-04	R$ 38.950,0000
30/06/2025 às 11:05:32	30.948.812/0001-24	R$ 38.940,0000
30/06/2025 às 11:05:49	08.528.076/0001-04	R$ 38.930,0000
30/06/2025 às 11:05:51	30.948.812/0001-24	R$ 38.920,0000
30/06/2025 às 11:06:07	08.528.076/0001-04	R$ 38.910,0000
30/06/2025 às 11:06:10	30.948.812/0001-24	R$ 38.900,0000
30/06/2025 às 11:06:24	03.619.767/0005-15	R$ 21.380,0000
30/06/2025 às 11:06:39	05.778.325/0005-47	R$ 21.370,0000
30/06/2025 às 11:06:58	08.528.076/0001-04	R$ 38.890,0000
30/06/2025 às 11:07:00	30.948.812/0001-24	R$ 38.880,0000
30/06/2025 às 11:07:21	08.528.076/0001-04	R$ 38.870,0000
30/06/2025 às 11:07:27	30.948.812/0001-24	R$ 38.860,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:07:43	08.528.076/0001-04	R$ 38.850,0000
30/06/2025 às 11:07:43	03.619.767/0005-15	R$ 21.350,0000
30/06/2025 às 11:07:46	30.948.812/0001-24	R$ 38.840,0000
30/06/2025 às 11:08:04	05.778.325/0005-47	R$ 21.340,0000
30/06/2025 às 11:08:08	08.528.076/0001-04	R$ 38.830,0000
30/06/2025 às 11:08:11	30.948.812/0001-24	R$ 38.820,0000
30/06/2025 às 11:08:22	08.528.076/0001-04	R$ 38.810,0000
30/06/2025 às 11:08:23	30.948.812/0001-24	R$ 38.800,0000
30/06/2025 às 11:08:40	08.528.076/0001-04	R$ 38.790,0000
30/06/2025 às 11:08:42	30.948.812/0001-24	R$ 38.780,0000
30/06/2025 às 11:08:43	03.619.767/0005-15	R$ 21.330,0000
30/06/2025 às 11:08:55	05.778.325/0005-47	R$ 21.250,0000
30/06/2025 às 11:09:11	03.619.767/0005-15	R$ 21.220,0000
30/06/2025 às 11:09:27	05.778.325/0005-47	R$ 21.100,0000
30/06/2025 às 11:09:43	08.528.076/0001-04	R$ 38.770,0000
30/06/2025 às 11:09:45	30.948.812/0001-24	R$ 38.760,0000
30/06/2025 às 11:10:02	08.528.076/0001-04	R$ 38.750,0000
30/06/2025 às 11:10:04	30.948.812/0001-24	R$ 38.740,0000
30/06/2025 às 11:10:19	03.619.767/0005-15	R$ 21.080,0000
30/06/2025 às 11:10:38	08.528.076/0001-04	R$ 38.730,0000
30/06/2025 às 11:10:38	05.778.325/0005-47	R$ 21.050,0000
30/06/2025 às 11:10:42	30.948.812/0001-24	R$ 38.720,0000
30/06/2025 às 11:10:59	08.528.076/0001-04	R$ 38.710,0000
30/06/2025 às 11:11:00	30.948.812/0001-24	R$ 38.700,0000
30/06/2025 às 11:11:20	08.528.076/0001-04	R$ 38.690,0000
30/06/2025 às 11:11:26	30.948.812/0001-24	R$ 38.680,0000
30/06/2025 às 11:11:27	03.619.767/0005-15	R$ 21.020,0000
30/06/2025 às 11:11:44	08.528.076/0001-04	R$ 38.670,0000
30/06/2025 às 11:11:44	30.948.812/0001-24	R$ 38.660,0000
30/06/2025 às 11:11:55	05.778.325/0005-47	R$ 20.990,0000
30/06/2025 às 11:12:14	08.528.076/0001-04	R$ 38.650,0000
30/06/2025 às 11:12:15	03.619.767/0005-15	R$ 20.980,0000
30/06/2025 às 11:12:16	30.948.812/0001-24	R$ 38.640,0000
30/06/2025 às 11:12:32	08.528.076/0001-04	R$ 38.630,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:12:35	30.948.812/0001-24	R$ 38.620,0000
30/06/2025 às 11:12:36	05.778.325/0005-47	R$ 20.970,0000
30/06/2025 às 11:12:53	08.528.076/0001-04	R$ 38.610,0000
30/06/2025 às 11:13:00	30.948.812/0001-24	R$ 38.600,0000
30/06/2025 às 11:13:17	08.528.076/0001-04	R$ 38.590,0000
30/06/2025 às 11:13:21	30.948.812/0001-24	R$ 38.580,0000
30/06/2025 às 11:13:38	08.528.076/0001-04	R$ 38.570,0000
30/06/2025 às 11:13:40	30.948.812/0001-24	R$ 38.560,0000
30/06/2025 às 11:13:56	08.528.076/0001-04	R$ 38.550,0000
30/06/2025 às 11:13:58	30.948.812/0001-24	R$ 38.540,0000
30/06/2025 às 11:14:17	08.528.076/0001-04	R$ 38.530,0000
30/06/2025 às 11:14:23	30.948.812/0001-24	R$ 38.520,0000
30/06/2025 às 11:14:41	03.619.767/0005-15	R$ 20.950,0000
30/06/2025 às 11:14:58	05.778.325/0005-47	R$ 20.900,0000
30/06/2025 às 11:15:14	08.528.076/0001-04	R$ 38.510,0000
30/06/2025 às 11:15:21	03.619.767/0005-15	R$ 20.850,0000
30/06/2025 às 11:15:24	30.948.812/0001-24	R$ 38.500,0000
30/06/2025 às 11:15:38	05.778.325/0005-47	R$ 20.800,0000
30/06/2025 às 11:15:57	08.528.076/0001-04	R$ 38.490,0000
30/06/2025 às 11:16:03	30.948.812/0001-24	R$ 38.480,0000
30/06/2025 às 11:16:08	03.619.767/0005-15	R$ 20.780,0000
30/06/2025 às 11:16:27	08.528.076/0001-04	R$ 38.470,0000
30/06/2025 às 11:16:27	05.778.325/0005-47	R$ 20.760,0000
30/06/2025 às 11:16:28	30.948.812/0001-24	R$ 38.460,0000
30/06/2025 às 11:16:45	08.528.076/0001-04	R$ 38.450,0000
30/06/2025 às 11:16:47	30.948.812/0001-24	R$ 38.440,0000
30/06/2025 às 11:17:00	03.619.767/0005-15	R$ 20.720,0000
30/06/2025 às 11:17:15	05.778.325/0005-47	R$ 20.500,0000
30/06/2025 às 11:17:30	03.619.767/0005-15	R$ 20.450,0000
30/06/2025 às 11:17:47	05.778.325/0005-47	R$ 20.440,0000
30/06/2025 às 11:18:03	08.528.076/0001-04	R$ 38.430,0000
30/06/2025 às 11:18:04	30.948.812/0001-24	R$ 38.420,0000
30/06/2025 às 11:18:21	08.528.076/0001-04	R$ 38.410,0000
30/06/2025 às 11:18:23	30.948.812/0001-24	R$ 38.400,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:18:30	03.619.767/0005-15	R$ 20.420,0000
30/06/2025 às 11:18:41	05.778.325/0005-47	R$ 20.400,0000
30/06/2025 às 11:18:57	08.528.076/0001-04	R$ 38.390,0000
30/06/2025 às 11:19:00	30.948.812/0001-24	R$ 38.380,0000
30/06/2025 às 11:19:05	03.619.767/0005-15	R$ 20.390,0000
30/06/2025 às 11:19:21	08.528.076/0001-04	R$ 38.370,0000
30/06/2025 às 11:19:26	05.778.325/0005-47	R$ 20.370,0000
30/06/2025 às 11:19:26	30.948.812/0001-24	R$ 38.360,0000
30/06/2025 às 11:19:41	03.619.767/0005-15	R$ 20.350,0000
30/06/2025 às 11:19:50	52.593.051/0001-78	R$ 43.450,0000
30/06/2025 às 11:20:14	08.528.076/0001-04	R$ 38.350,0000
30/06/2025 às 11:20:17	30.948.812/0001-24	R$ 38.340,0000
30/06/2025 às 11:20:20	28.880.531/0002-16	R$ 42.998,0000
30/06/2025 às 11:20:22	05.778.325/0005-47	R$ 20.300,0000
30/06/2025 às 11:20:39	08.528.076/0001-04	R$ 38.330,0000
30/06/2025 às 11:20:42	30.948.812/0001-24	R$ 38.320,0000
30/06/2025 às 11:21:02	08.528.076/0001-04	R$ 38.310,0000
30/06/2025 às 11:21:07	30.948.812/0001-24	R$ 38.300,0000
30/06/2025 às 11:21:24	08.528.076/0001-04	R$ 38.290,0000
30/06/2025 às 11:21:25	30.948.812/0001-24	R$ 38.280,0000
30/06/2025 às 11:21:42	08.528.076/0001-04	R$ 38.270,0000
30/06/2025 às 11:21:44	30.948.812/0001-24	R$ 38.260,0000
30/06/2025 às 11:21:57	03.619.767/0005-15	R$ 20.280,0000
30/06/2025 às 11:22:16	08.528.076/0001-04	R$ 38.250,0000
30/06/2025 às 11:22:16	30.948.812/0001-24	R$ 38.240,0000
30/06/2025 às 11:22:34	08.528.076/0001-04	R$ 38.230,0000
30/06/2025 às 11:22:35	30.948.812/0001-24	R$ 38.220,0000
30/06/2025 às 11:22:54	08.528.076/0001-04	R$ 38.210,0000
30/06/2025 às 11:23:00	30.948.812/0001-24	R$ 38.200,0000
30/06/2025 às 11:23:19	08.528.076/0001-04	R$ 38.190,0000
30/06/2025 às 11:23:19	30.948.812/0001-24	R$ 38.180,0000
30/06/2025 às 11:23:37	08.528.076/0001-04	R$ 38.170,0000
30/06/2025 às 11:23:38	30.948.812/0001-24	R$ 38.160,0000
30/06/2025 às 11:23:55	08.528.076/0001-04	R$ 38.150,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:23:56	30.948.812/0001-24	R$ 38.140,0000
30/06/2025 às 11:24:14	08.528.076/0001-04	R$ 38.130,0000
30/06/2025 às 11:24:15	30.948.812/0001-24	R$ 38.120,0000
30/06/2025 às 11:24:34	08.528.076/0001-04	R$ 38.110,0000
30/06/2025 às 11:24:40	30.948.812/0001-24	R$ 38.100,0000
30/06/2025 às 11:24:58	08.528.076/0001-04	R$ 38.090,0000
30/06/2025 às 11:24:59	30.948.812/0001-24	R$ 38.080,0000
30/06/2025 às 11:25:16	08.528.076/0001-04	R$ 38.070,0000
30/06/2025 às 11:25:18	30.948.812/0001-24	R$ 38.060,0000
30/06/2025 às 11:25:37	08.528.076/0001-04	R$ 38.050,0000
30/06/2025 às 11:25:43	30.948.812/0001-24	R$ 38.040,0000
30/06/2025 às 11:26:01	08.528.076/0001-04	R$ 38.030,0000
30/06/2025 às 11:26:02	30.948.812/0001-24	R$ 38.020,0000
30/06/2025 às 11:26:19	08.528.076/0001-04	R$ 38.010,0000
30/06/2025 às 11:26:21	30.948.812/0001-24	R$ 38.000,0000
30/06/2025 às 11:26:37	08.528.076/0001-04	R$ 37.990,0000
30/06/2025 às 11:26:40	30.948.812/0001-24	R$ 37.980,0000
30/06/2025 às 11:26:58	08.528.076/0001-04	R$ 37.970,0000
30/06/2025 às 11:26:59	30.948.812/0001-24	R$ 37.960,0000
30/06/2025 às 11:27:16	08.528.076/0001-04	R$ 37.950,0000
30/06/2025 às 11:27:17	30.948.812/0001-24	R$ 37.940,0000
30/06/2025 às 11:27:34	08.528.076/0001-04	R$ 37.930,0000
30/06/2025 às 11:27:36	30.948.812/0001-24	R$ 37.920,0000
30/06/2025 às 11:27:55	08.528.076/0001-04	R$ 37.910,0000
30/06/2025 às 11:28:01	30.948.812/0001-24	R$ 37.900,0000
30/06/2025 às 11:28:20	08.528.076/0001-04	R$ 37.890,0000
30/06/2025 às 11:28:20	30.948.812/0001-24	R$ 37.880,0000
30/06/2025 às 11:28:37	08.528.076/0001-04	R$ 37.870,0000
30/06/2025 às 11:28:38	41.680.761/0001-19	R$ 42.988,0000
30/06/2025 às 11:28:39	30.948.812/0001-24	R$ 37.860,0000
30/06/2025 às 11:28:55	08.528.076/0001-04	R$ 37.850,0000
30/06/2025 às 11:28:58	30.948.812/0001-24	R$ 37.840,0000
30/06/2025 às 11:29:14	08.528.076/0001-04	R$ 37.830,0000
30/06/2025 às 11:29:16	30.948.812/0001-24	R$ 37.820,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:29:35	08.528.076/0001-04	R$ 37.810,0000
30/06/2025 às 11:29:36	30.948.812/0001-24	R$ 37.800,0000
30/06/2025 às 11:29:54	08.528.076/0001-04	R$ 37.790,0000
30/06/2025 às 11:29:54	30.948.812/0001-24	R$ 37.780,0000
30/06/2025 às 11:30:05	28.880.531/0002-16	R$ 42.498,0000
30/06/2025 às 11:30:23	08.528.076/0001-04	R$ 37.770,0000
30/06/2025 às 11:30:26	30.948.812/0001-24	R$ 37.760,0000
30/06/2025 às 11:30:44	08.528.076/0001-04	R$ 37.750,0000
30/06/2025 às 11:30:45	30.948.812/0001-24	R$ 37.740,0000
30/06/2025 às 11:31:02	08.528.076/0001-04	R$ 37.730,0000
30/06/2025 às 11:31:03	30.948.812/0001-24	R$ 37.720,0000
30/06/2025 às 11:31:20	08.528.076/0001-04	R$ 37.710,0000
30/06/2025 às 11:31:22	30.948.812/0001-24	R$ 37.700,0000
30/06/2025 às 11:31:41	08.528.076/0001-04	R$ 37.690,0000
30/06/2025 às 11:31:41	30.948.812/0001-24	R$ 37.680,0000
30/06/2025 às 11:31:59	08.528.076/0001-04	R$ 37.670,0000
30/06/2025 às 11:32:06	30.948.812/0001-24	R$ 37.660,0000
30/06/2025 às 11:32:23	08.528.076/0001-04	R$ 37.650,0000
30/06/2025 às 11:32:25	30.948.812/0001-24	R$ 37.640,0000
30/06/2025 às 11:32:41	08.528.076/0001-04	R$ 37.630,0000
30/06/2025 às 11:32:44	30.948.812/0001-24	R$ 37.620,0000
30/06/2025 às 11:33:09	08.528.076/0001-04	R$ 37.610,0000
30/06/2025 às 11:33:09	30.948.812/0001-24	R$ 37.600,0000
30/06/2025 às 11:33:26	08.528.076/0001-04	R$ 37.590,0000
30/06/2025 às 11:33:28	30.948.812/0001-24	R$ 37.580,0000
30/06/2025 às 11:33:47	08.528.076/0001-04	R$ 37.570,0000
30/06/2025 às 11:33:53	30.948.812/0001-24	R$ 37.560,0000
30/06/2025 às 11:34:14	08.528.076/0001-04	R$ 37.550,0000
30/06/2025 às 11:34:19	30.948.812/0001-24	R$ 37.540,0000
30/06/2025 às 11:34:36	08.528.076/0001-04	R$ 37.530,0000
30/06/2025 às 11:34:38	30.948.812/0001-24	R$ 37.520,0000
30/06/2025 às 11:34:54	08.528.076/0001-04	R$ 37.510,0000
30/06/2025 às 11:34:56	30.948.812/0001-24	R$ 37.500,0000
30/06/2025 às 11:35:15	08.528.076/0001-04	R$ 37.490,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:35:16	30.948.812/0001-24	R$ 37.480,0000
30/06/2025 às 11:35:35	08.528.076/0001-04	R$ 37.470,0000
30/06/2025 às 11:35:41	30.948.812/0001-24	R$ 37.460,0000
30/06/2025 às 11:36:00	08.528.076/0001-04	R$ 37.450,0000
30/06/2025 às 11:36:06	30.948.812/0001-24	R$ 37.440,0000
30/06/2025 às 11:36:24	08.528.076/0001-04	R$ 37.430,0000
30/06/2025 às 11:36:25	30.948.812/0001-24	R$ 37.420,0000
30/06/2025 às 11:36:42	08.528.076/0001-04	R$ 37.410,0000
30/06/2025 às 11:36:44	30.948.812/0001-24	R$ 37.400,0000
30/06/2025 às 11:37:00	08.528.076/0001-04	R$ 37.390,0000
30/06/2025 às 11:37:03	30.948.812/0001-24	R$ 37.380,0000
30/06/2025 às 11:37:21	08.528.076/0001-04	R$ 37.370,0000
30/06/2025 às 11:37:22	30.948.812/0001-24	R$ 37.360,0000
30/06/2025 às 11:37:39	08.528.076/0001-04	R$ 37.350,0000
30/06/2025 às 11:37:41	30.948.812/0001-24	R$ 37.340,0000
30/06/2025 às 11:38:00	08.528.076/0001-04	R$ 37.330,0000
30/06/2025 às 11:38:06	30.948.812/0001-24	R$ 37.320,0000
30/06/2025 às 11:38:31	08.528.076/0001-04	R$ 37.310,0000
30/06/2025 às 11:38:31	30.948.812/0001-24	R$ 37.300,0000
30/06/2025 às 11:38:48	08.528.076/0001-04	R$ 37.290,0000
30/06/2025 às 11:38:50	30.948.812/0001-24	R$ 37.280,0000
30/06/2025 às 11:39:14	08.528.076/0001-04	R$ 37.270,0000
30/06/2025 às 11:39:15	30.948.812/0001-24	R$ 37.260,0000
30/06/2025 às 11:39:34	08.528.076/0001-04	R$ 37.250,0000
30/06/2025 às 11:39:47	30.948.812/0001-24	R$ 37.240,0000
30/06/2025 às 11:40:03	08.528.076/0001-04	R$ 37.230,0000
30/06/2025 às 11:40:06	30.948.812/0001-24	R$ 37.220,0000
30/06/2025 às 11:40:21	08.528.076/0001-04	R$ 37.210,0000
30/06/2025 às 11:40:25	30.948.812/0001-24	R$ 37.200,0000
30/06/2025 às 11:40:43	08.528.076/0001-04	R$ 37.190,0000
30/06/2025 às 11:40:44	30.948.812/0001-24	R$ 37.180,0000
30/06/2025 às 11:41:01	08.528.076/0001-04	R$ 37.170,0000
30/06/2025 às 11:41:03	30.948.812/0001-24	R$ 37.160,0000
30/06/2025 às 11:41:22	08.528.076/0001-04	R$ 37.150,0000

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Data/hora	Participante	Lance
30/06/2025 às 11:41:22	30.948.812/0001-24	R$ 37.140,0000
30/06/2025 às 11:41:40	08.528.076/0001-04	R$ 37.130,0000
30/06/2025 às 11:41:41	30.948.812/0001-24	R$ 37.120,0000
30/06/2025 às 11:41:58	08.528.076/0001-04	R$ 37.110,0000
30/06/2025 às 11:42:00	30.948.812/0001-24	R$ 37.100,0000
30/06/2025 às 11:42:22	08.528.076/0001-04	R$ 37.090,0000
30/06/2025 às 11:42:25	30.948.812/0001-24	R$ 37.080,0000
30/06/2025 às 11:42:43	08.528.076/0001-04	R$ 37.070,0000
30/06/2025 às 11:42:44	30.948.812/0001-24	R$ 37.060,0000
30/06/2025 às 11:43:01	08.528.076/0001-04	R$ 37.050,0000
30/06/2025 às 11:43:03	30.948.812/0001-24	R$ 37.040,0000
30/06/2025 às 11:43:15	52.593.051/0001-78	R$ 37.000,0000
30/06/2025 às 11:43:15	30.948.812/0001-24	R$ 36.990,0000
30/06/2025 às 11:43:32	52.593.051/0001-78	R$ 36.000,0000
30/06/2025 às 11:43:34	30.948.812/0001-24	R$ 35.990,0000
30/06/2025 às 11:43:48	52.593.051/0001-78	R$ 35.000,0000
30/06/2025 às 11:44:07	08.528.076/0001-04	R$ 34.990,0000
30/06/2025 às 11:44:18	52.593.051/0001-78	R$ 34.000,0000
30/06/2025 às 11:44:37	08.528.076/0001-04	R$ 33.990,0000
30/06/2025 às 11:44:48	52.593.051/0001-78	R$ 33.000,0000
30/06/2025 às 11:45:04	08.528.076/0001-04	R$ 32.990,0000
30/06/2025 às 11:45:47	41.680.761/0001-19	R$ 42.488,0000
30/06/2025 às 11:46:04	52.593.051/0001-78	R$ 32.000,0000
30/06/2025 às 11:46:22	08.528.076/0001-04	R$ 31.990,0000
30/06/2025 às 11:46:54	52.593.051/0001-78	R$ 31.000,0000

Mensagens do chat do Item 2

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 10:27:37	A abertura do item 2 para lances está agendada para daqui a 10 minutos. Mantenham-se conectados.
Sistema	30/06/2025 às 10:37:37	O item 2 foi aberto. Solicitamos o envio de lances.
Sistema	30/06/2025 às 10:50:09	O lance no valor de R$ 2.100,0000 do item 2 foi excluído pelo fornecedor.
Sistema	30/06/2025 às 11:48:55	O item 2 está aguardando decisão de reinício ou encerramento da etapa aberta pelo comprador.
Sistema	30/06/2025 às 12:04:14	O item 2 está encerrado.

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Responsável	Data/Hora	Mensagem
Sistema para o participante 18.563.457/0001-70	30/06/2025 às 14:27:38	Prezado Licitante, boa tarde.
Sistema para o participante 18.563.457/0001-70	30/06/2025 às 14:29:00	Considerando a descrição do Item 2 e o preço unitário apresentado em sua proposta, pergunto se V. Sa. pretende manter a proposta, visto que o preço encontra-se bem inferior ao preço de mercado para o item em foco.
Sistema para o participante 18.563.457/0001-70	30/06/2025 às 14:30:19	Será concedido o prazo de 15 minutos para vossa manifestação. No caso de encerramento do prazo informado, a proposta apresentada poderá ser recusada.
Sistema para o participante 18.563.457/0001-70	30/06/2025 às 14:31:05	O prazo se encerra às 14h37minutos.
Pelo participante 18.563.457/0001-70	30/06/2025 às 14:34:07	Um momento
Pelo participante 18.563.457/0001-70	30/06/2025 às 14:35:15	Estamos verificando
Pelo participante 18.563.457/0001-70	30/06/2025 às 14:38:56	Vamos manter o valor
Sistema para o participante 18.563.457/0001-70	30/06/2025 às 14:43:01	Prezados, pergunto novamente, os senhores pretendem manter a proposta de fornecer MICROCOMPUTADOR TIPO 2 - "WORKSTATION COM MONITOR PRINCIPAL E MONITOR AUXILIAR pelo preço unitário de R$ 2.000,00 (dois mil reais)?
Pelo participante 18.563.457/0001-70	30/06/2025 às 14:46:35	Creio que cotamos apenas o monitor e não o workstation sendo assim solicitamos nossa desclassificação
Sistema para o participante 18.563.457/0001-70	30/06/2025 às 14:57:03	Entendido senhor licitante. Agradeço a informação. A proposta será recusada.
Sistema para o participante 35.689.930/0001-89	30/06/2025 às 15:00:45	Prezado licitante, boa tarde.
Sistema para o participante 35.689.930/0001-89	30/06/2025 às 15:00:55	Considerando a descrição do Item 2 e o preço unitário apresentado em sua proposta, pergunto se V. Sa. pretende manter a proposta, visto que o preço encontra-se bem inferior ao preço de mercado para o item em foco.
Sistema para o participante 35.689.930/0001-89	30/06/2025 às 15:01:20	Será concedido o prazo de 15 minutos para vossa manifestação. No caso de encerramento do prazo informado, a proposta apresentada poderá ser recusada.
Sistema para o participante 35.689.930/0001-89	30/06/2025 às 15:01:50	O prazo se encerra às 15h17minutos.
Sistema para o participante 42.816.024/0001-63	30/06/2025 às 15:24:35	Prezado licitante, boa tarde.
Sistema para o participante 42.816.024/0001-63	30/06/2025 às 15:24:43	Considerando a descrição do Item 2 e o preço unitário apresentado em sua proposta, pergunto se V. Sa. pretende manter a proposta, visto que o preço encontra-se bem inferior ao preço de mercado para o item em foco.
Sistema para o participante 35.689.930/0001-89	30/06/2025 às 15:25:01	Será concedido o prazo de 15 minutos para vossa manifestação. No caso de encerramento do prazo informado, a proposta apresentada poderá ser recusada.
Sistema para o participante 42.816.024/0001-63	30/06/2025 às 15:25:19	Será concedido o prazo de 15 minutos para vossa manifestação. No caso de encerramento do prazo informado, a proposta apresentada poderá ser recusada.

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Responsável	Data/Hora	Mensagem
Sistema para o participante 42.816.024/0001-63	30/06/2025 às 15:27:23	O prazo para vossa manifestação se encerrará às 15h43min.
Pelo participante 42.816.024/0001-63	30/06/2025 às 15:27:24	Boa tarde Sr Pregoeiro
Pelo participante 42.816.024/0001-63	30/06/2025 às 15:28:11	Podemos entrar em negociação
Sistema para o participante 42.816.024/0001-63	30/06/2025 às 15:33:58	Prezado, a proposta apresentada para o Item 2 - "WORKSTATION COM MONITOR PRINCIPAL E MONITOR AUXILIAR" no preço unitário de R$ 10.000,00 (dez mil reais). V. Sa. mantém a oferta?
Sistema para o participante 42.816.024/0001-63	30/06/2025 às 15:37:06	Senhor licitante, solicito manifestação.
Pelo participante 42.816.024/0001-63	30/06/2025 às 15:38:14	Sim, mantenho valor
Sistema para o participante 42.816.024/0001-63	01/07/2025 às 10:40:21	Sr. Fornecedor 42.816.024 LEONARDO CATIVO SOUSA, CNPJ 42.816.024/0001-63, você foi convocado para enviar anexos para o item 2. Prazo para encerrar o envio: 12:44:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Sistema para o participante 42.816.024/0001-63	01/07/2025 às 12:44:00	O item 2 teve a convocação para envio de anexos encerrada às 12:44:00 de 01/07/2025. Nenhum anexo foi enviado pelo fornecedor 42.816.024 LEONARDO CATIVO SOUSA, CNPJ 42.816.024/0001-63.
Sistema para o participante 03.619.767/0005-15	01/07/2025 às 15:17:41	Sr. Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, você foi convocado para enviar anexos para o item 2. Prazo para encerrar o envio: 17:20:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Pelo participante 03.619.767/0005-15	01/07/2025 às 16:23:23	O item 2 teve a convocação para envio de anexos encerrada às 16:23:23 de 01/07/2025. 8 anexos foram enviados pelo fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15.
Pelo participante 03.619.767/0005-15	01/07/2025 às 16:29:34	Sr pregoeiro, por favor poderia reabrir o envio de anexo, para anexar um arquivo complementar que faltou?
Sistema para o participante 05.778.325/0005-47	08/07/2025 às 15:00:07	Sr. Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, você foi convocado para enviar anexos para o item 2. Prazo para encerrar o envio: 17:05:00 do dia 08/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital.. .
Pelo participante 05.778.325/0005-47	08/07/2025 às 16:04:37	O item 2 teve a convocação para envio de anexos encerrada às 16:04:37 de 08/07/2025. 3 anexos foram enviados pelo fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47.
Sistema para o participante 05.778.325/0005-47	11/07/2025 às 11:22:43	Sr. Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, você foi convocado para enviar anexos para o item 2. Prazo para encerrar o envio: 13:25:00 do dia 11/07/2025. Justificativa: Solicito envio de documentos que comprovem o atendimento da oferta aos pontos levantados no Parecer Nº 21.2025.SIET.1668662.2025.001317..
Pelo participante 05.778.325/0005-47	11/07/2025 às 12:00:54	O item 2 teve a convocação para envio de anexos encerrada às 12:00:54 de 11/07/2025. 4 anexos foram enviados pelo fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47.
Sistema	11/07/2025 às 14:29:50	O item 2 está na etapa de julgamento de proposta no período de intenção de recursos, com acréscimo de 10 minutos a partir de agora - até 11/07/2025 14:39:50.
Sistema	14/07/2025 às 12:05:22	O item 2 está na etapa de habilitação de fornecedores no período de intenção de recursos, com acréscimo de 10 minutos a partir de agora - até 14/07/2025 12:15:22.
Sistema	14/07/2025 às 15:18:10	A fase de recurso do item 2 está aberta até 17/07/2025.
Sistema	18/07/2025 às 00:00:00	A fase de recurso do item 2 foi finalizada no prazo previsto. Não houve registro de recursos.

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Eventos do Item 2

Data/Hora	Descrição
01/07/2025 às 10:40:21	Fornecedor 42.816.024 LEONARDO CATIVO SOUSA, CNPJ 42.816.024/0001-63 convocado para o envio de anexo. Prazo para encerrar o envio: 12:44:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
01/07/2025 às 15:17:41	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 convocado para o envio de anexo. Prazo para encerrar o envio: 17:20:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
01/07/2025 às 16:23:23	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 finalizou o envio de anexo.
08/07/2025 às 15:00:07	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 convocado para o envio de anexo. Prazo para encerrar o envio: 17:05:00 do dia 08/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital.. .
08/07/2025 às 16:04:37	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 finalizou o envio de anexo.
11/07/2025 às 11:22:43	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 convocado para o envio de anexo. Prazo para encerrar o envio: 13:25:00 do dia 11/07/2025. Justificativa: Solicito envio de documentos que comprovem o atendimento da oferta aos pontos levantados no Parecer Nª 21.2025.SIET.1668662.2025.001317..
11/07/2025 às 12:00:54	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 finalizou o envio de anexo.
17/07/2025 às 22:14:22	Fornecedor TREER TECNOLOGY LTDA, CNPJ 41.680.761/0001-19 registra a desistência de cadastrar recurso.
25/07/2025 às 14:34:08	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 teve a proposta adjudicada, melhor lance: R$ 20.300,0000.
25/07/2025 às 14:35:09	Item homologado.

Fase Recursal do Item/Grupo *

* Maiores detalhes sobre recursos, contrarrazões, decisões e revisões deverão ser consultados no sistema.

Sessão 1

Prazos:

Intenção de recurso no julgamento:	11/07/2025 14:39:50
Intenção de recurso na habilitação:	14/07/2025 12:15:22
Recurso:	17/07/2025 23:59:59
Contrarrazão:	22/07/2025 23:59:59

Recursos realizados:

30.948.812/0001-24 - RL INFORMATICA LTDA

Intenção de recurso no julgamento:	11/07/2025 14:37:25
Intenção de recurso na habilitação:	14/07/2025 12:10:50
Recurso:	(Desistiu Cadastro)
Contrarrazões:	Não foi realizado cadastro

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41.680.761/0001-19 - TREER TECNOLOGY LTDA

Intenção de recurso no julgamento:		11/07/2025 14:32:01
Recurso:	(Desistiu Cadastro)	17/07/2025 22:14:22
Contrarrazões:	Não foi realizado cadastro	

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PROCURADORIA GERAL DE JUSTIÇA

TERMO DE HOMOLOGAÇÃO

UASG 925849 - PROCURADORIA GERAL DE JUSTIÇA - AM

PREGÃO 94010/2025

Às 14:35 horas do dia 25 de julho do ano de 2025, após constatada a regularidade dos atos procedimentais, a autoridade competente, ANDRE VIRGILIO BELOTA SEFFAIR, HOMOLOGA a adjudicação referente ao Processo nª 2025.001317, Pregão nª 94010/2025.

Fundamentação legal:	Lei 14.133/2021	Característica:	SRP - Registro de Preço
Critério de julgamento:	Menor Preço / Maior Desconto	Modo de disputa:	Aberto
Compra emergencial:	Não	UF da UASG:	AM
Objeto da compra:	Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 mes		
Entrega de propostas:	De 12/06/2025 às 08:00 até 30/06/2025 às 10:00		
Abertura da sessão pública:	Dia 30/06/2025 às 10:00 (horário de Brasília)		

Mensagens do chat da compra

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 10:00:02	A sessão pública está aberta. Até 1 item poderá estar em disputa simultaneamente e o período de abertura para disputa será entre 08:00 e 18:00. Haverá aviso prévio de abertura dos itens de 10 minutos. Mantenham-se conectados.
Sistema	30/06/2025 às 10:15:46	Prezados Licitantes, bom dia.
Sistema	30/06/2025 às 10:15:50	Sejam bem vindos à sessão pública do Pregão Eletrônico 94.010/2025 que tem por objeto o registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses.
Sistema	30/06/2025 às 10:15:59	Prezados, em breve será aberta a fase de disputa. Solicito atenção e comprometimento aos valores apresentados nos lances, visto que vinculam a empresa à manutenção do preço por um período de 12 meses, incumbindo a ela, portanto, a responsabilidade pela correta precificação da sua oferta.
Sistema	30/06/2025 às 10:16:10	Solicito atenção ao subitem 6.10 do Instrumento Convocatório no intuito do adequado acompanhamento do procedimento por parte de todos os interessados.
Sistema	30/06/2025 às 10:16:20	Boa disputa.
Sistema	30/06/2025 às 14:06:48	A etapa de julgamento de propostas foi iniciada. Para acompanhá-la acesse a opção "Seleção de fornecedores" na linha do tempo.
Sistema	30/06/2025 às 14:24:10	Prezados, encerrada a fase de disputa, passaremos à análise das ofertas apresentadas pelas licitantes mais bem colocadas na ordem de classificação.
Sistema	30/06/2025 às 14:26:29	No entanto, cabe tratar com os primeiros colocados para o Item 2. Solicito atenção aos interessados.
Sistema	30/06/2025 às 14:58:29	Senhores, considerando a desclassificação da proposta da licitante TROGON COMERCIO DE INFORMATICA LTDA SP para o item 2, passaremos a tratar com os licitantes seguintes. Solicito atenção aos interessados.

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Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 15:24:14	Prezados, considerando que o licitante HOUSE LTDA. não se manifestou, passaremos a tratativa com a licitante 42.816.024 LEONARDO CATIVO SOUSA. Solicito atenção à interessada.
Sistema	30/06/2025 às 15:36:05	Senhor licitante, solicito manifestação.
Sistema	30/06/2025 às 15:52:50	Senhores, em breve estarei convocando as licitantes mais bem colocadas na ordem de classificação, para envio de nova proposta ajustada ao valor dos lances para cada item.
Sistema	30/06/2025 às 15:53:19	O prazo para envio é de 2 (duas) horas contadas a partir da convocação no sistema.
Sistema	30/06/2025 às 15:57:21	Com fundamento na letra "k" do subitem 9.2 do Edital, deverá ser enviada junto à proposta de preços "documentação técnica (manuais, catálogos ou prospectos), com as características detalhadas (marca, modelo, cor, tipo de material e medidas) e imagens ilustrativas dos produtos propostos, que possibilitem a completa averiguação de conformidade com as especificações, visando facilitar a avaliação a ser realizada por técnicos deste Órgão."
Sistema	30/06/2025 às 15:59:25	Poderá ser apresentado na proposta ou junto dela, links do fabricante/fornecedor, desde que atenda, no mínimo, as exigências do dispositivo mencionado.
Sistema	30/06/2025 às 16:01:38	Em breve as licitantes mais bem classificadas serão convocadas no sistema. Solicito atenção às interessadas.
Sistema	30/06/2025 às 16:04:57	Senhores, considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retornando amanhã (01/07/2025), a partir das 10h (horário Brasília) para as convocações.
Sistema	30/06/2025 às 16:05:13	Aguardo a todos no dia e hora aqui agendados.
Sistema	30/06/2025 às 16:05:28	Obrigado pela atenção e uma excelente tarde a todos.
Sistema	01/07/2025 às 10:05:27	Prezados Licitantes, bom dia.
Sistema	01/07/2025 às 10:16:19	Retornamos aos trabalhos deste certame, considerando a convocação dos licitantes mais bem classificados na ordem dos lances para envio de propostas.
Sistema	01/07/2025 às 10:27:59	Senhores, informo que o Quadro-Resumo do Processo de Compra Nª 195.2025.SCOMS.1609045.2025.001317 com os valores estimados para cada item já se encontra disponível no Portal do MPAM, no seguinte endereço:
Sistema	01/07/2025 às 10:28:11	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	01/07/2025 às 10:29:55	Senhores, em breve estarei convocando as licitantes para envio das proposta de preços ajustadas aos lances. Solicito atenção.
Sistema	01/07/2025 às 10:54:59	Senhores, considerando a solicitação de desclassificação de proposta para o Item 4 por parte do licitante MR COMERCIO DE PECAS E ACESSORIOS LTDA., será convocado para envio de proposta o próximo licitante na ordem de classificação. Solicito atenção.
Sistema	01/07/2025 às 13:39:54	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 13:43:26	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 2 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 14:32:39	Na sequência, considerando a desclassificação das licitantes 42.816.024 LEONARDO CATIVO SOUSA (Item 2) e HOUSE LTDA. (Item 4), serão convocados novos licitantes para envio de proposta de preços. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:00:55	Prezados, em breve serão convocados licitantes para envio de propostas para os itens 2 e 4. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:08:04	Prezados, será promovido um desempate para o Item 4 entre os licitantes A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA. e 42.816.024 LEONARDO CATIVO SOUSA. Solicito atenção aos interessados.

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Responsável	Data/Hora	Mensagem
Sistema	01/07/2025 às 15:15:30	Realizado o desempate, passaremos à convocação de novo licitante para o Item 4. Solicito atenção.
Sistema	01/07/2025 às 15:17:15	Será convocado também novo licitante para o Item 2. Solicito atenção.
Sistema	01/07/2025 às 15:18:12	Estando os licitantes devidamente convocados, fico no aguardo dos solicitados documentos.
Sistema	01/07/2025 às 18:31:24	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 18:32:20	Considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retomando-os amanhã (02/07/2025), a partir das 10h (horário de Brasília).
Sistema	01/07/2025 às 18:32:44	Aguardo a todos no dia e hora aqui agendados.
Sistema	01/07/2025 às 18:33:01	Agradeço a atenção dispensada e desejo a todos um excelente fim de tarde.
Sistema	02/07/2025 às 10:02:34	Prezados, bom dia.
Sistema	02/07/2025 às 10:08:35	Senhores, informo que em breve será convocado novo licitante para envio de proposta para o item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 12:37:06	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	02/07/2025 às 12:38:31	Na sequência, será convocado novo licitante para envio de proposta para o Item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 14:52:01	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	02/07/2025 às 14:52:14	Na sequência, será convocado novo licitante para envio de proposta para o Item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 16:50:23	Prezados, considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retornando amanhã (03/07/2025), a partir das 10h (horário Brasília).
Sistema	02/07/2025 às 16:50:49	Aguardo a todos no dia e hora aqui agendados.
Sistema	02/07/2025 às 16:51:05	Finalizo desejando a todos uma excelente tarde.
Sistema	03/07/2025 às 10:11:15	Prezados Licitantes, bom dia.
Sistema	03/07/2025 às 10:11:53	Retornamos aos trabalhos deste certame considerando a convocação de novo licitante para envio de proposta para o Item 4.
Sistema	03/07/2025 às 10:12:35	Em breve estarei convocando novo licitante para envio de proposta ajusta ao lance para o Item 4. Solicito atenção ao interessado.
Sistema	03/07/2025 às 10:24:21	Prezados, em breve estarei convocando novo licitante para envio de proposta ajusta ao lance para o Item 4. Solicito atenção ao interessado.
Sistema	03/07/2025 às 10:38:26	Estando o Licitante devidamente convocado, fico no aguardo dos solicitados documentos. Obrigado!
Sistema	03/07/2025 às 11:46:29	Senhores Licitantes, recebidos os documentos referente ao Item 4, informo que os mesmos serão encaminhados à análise por parte do setor técnico deste Órgão Ministerial.
Sistema	03/07/2025 às 11:47:11	Senhores, considerando a proposta apresentada pela licitante E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 para o item 1, informo o seguinte:
Sistema	03/07/2025 às 11:48:53	Submetida a proposta e os documentos técnicos enviados pela licitante classificada, o setor técnico DTIC, através do Parecer Nª 15.2025.SIET.1661793.2025.001317, manifestou-se "pela aceitabilidade do produto ofertado".

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Responsável	Data/Hora	Mensagem
Sistema	03/07/2025 às 11:50:25	Informo que o referido Parecer encontra-se disponível no Portal do MPAM, acessível a todos os interessados, no seguinte endereço: https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	03/07/2025 às 11:53:21	Senhores, considerando a manifestação técnica expressa no Parecer Nª 15.2025.SIET e o atendimento a todas as exigências formais do Edital referente à proposta de preços, este Pregoeiro decide pela ACEITAÇÃO da oferta do licitante E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 para o item 1.
Sistema	07/07/2025 às 15:57:44	Prezados Licitantes, boa tarde.
Sistema	07/07/2025 às 15:58:26	Informo que retornaremos aos trabalhos deste certame amanhã (08/07/2025), a partir das 14h (horário de Brasília).
Sistema	07/07/2025 às 15:58:41	Aguardo a todos no dia e hora aqui agendados. Obrigado.
Sistema	08/07/2025 às 14:11:23	Prezados licitantes, boa tarde.
Sistema	08/07/2025 às 14:14:38	Prezados, retornamos aos trabalhos deste certame considerando as propostas dos seguintes licitantes:
Sistema	08/07/2025 às 14:16:14	a) TORINO INFORMÁTICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, para o Item 2; b) POSITIVO TECNOLOGIA S/A (Filial), CNPJ (MF) n.ª 81.243.735/0009-03, para o Item 3; e c) E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, para o Item 4
Sistema	08/07/2025 às 14:24:07	Encaminhadas as ofertas ao setor técnico para análise, o referido setor manifestou-se da seguinte forma:
Sistema	08/07/2025 às 14:26:15	Parecer Nª 16.2025.SIET.1661858.2025.001317 - TORINO INFORMÁTICA LTDA., ITEM 2 - Pela exposição de motivos, depreende-se que: a) O teclado não atende; b) O requisito de leitor biométrico no mouse e teclado não foi atendida; entre outros.
Sistema	08/07/2025 às 14:27:56	Parecer Nª 18.2025.SIET.1664620.2025.001317 - POSITIVO TECNOLOGIA S/A (FILIAL) - ITEM 3 - Recomenda-se, portanto, caso a licitante seja instada a reapresentar a proposta técnica, que ela esteja em conformidade com o disposto no subitem 18.14, informando marca, modelo e documentação comprobatória específica de todos os componentes, de modo a permitir a verificação inequívoca da compatibilidade do produto ofertado com o objeto licitado.
Sistema	08/07/2025 às 14:28:43	Parecer Nª 19.2025.SIET.1665305.2025.001317 - ER SOLUÇÕES INFORMÁTICA LTDA. - ITEM 4 - O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica OPINA pela aceitabilidade do produto ofertado.
Sistema	08/07/2025 às 14:30:03	Assim, com fundamento na análise dos Pareceres aqui apresentados, Este Pregoeiro decide:
Sistema	08/07/2025 às 14:32:07	a) Recusar a proposta de preços do licitante TORINO INFORMÁTICA LTDA., para o ITEM 2, em conformidade ao Parecer Nª 16.2025.SIET.1661858.2025.001317 e Item 10.3.2 do Edital do certame.
Sistema	08/07/2025 às 14:35:55	b) Diligenciar o licitante POSITIVO TECNOLOGIA S/A (FILIAL) - para que apresente nos documentos de proposta enviados para o Item 3, o pleno atendimento aos requisitos técnicos exigidos no Termo de Referência Nª 2.2025.DTIC.1525128.2025.001317, Anexo I ao Edital do certame.
Sistema	08/07/2025 às 14:37:36	Para tal, será aberto o prazo de 2 (duas horas para envio de documento complementar em providência à solicitação constante do Parecer Nª 18.2025.SIET.1664620.2025.001317.
Sistema	08/07/2025 às 14:39:05	c) Aceitar a proposta de preços apresentada pelo licitante ER SOLUÇÕES INFORMÁTICA LTDA., para o ITEM 4, em conformidade ao Parecer Nª 19.2025.SIET.1665305.2025.001317 e ao Item 10 do Edital do certame.
Sistema	08/07/2025 às 14:40:00	Prezados, informo que os pareceres mencionados encontram-se disponíveis e acessíveis a todos os interessados no Portal do MPAM no seguinte endereço:
Sistema	08/07/2025 às 14:40:33	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis

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Responsável	Data/Hora	Mensagem
Sistema	08/07/2025 às 14:54:06	Prezado licitante POSITIVO TECNOLOGIA S/A (FILIAL), em breve V. Sa. será convocado para providências conforme apresentado nesse chat e no Parecer Nª 18.2025.SIET.1664620.2025.001317.
Sistema	08/07/2025 às 14:54:24	Solicito atenção.
Sistema	08/07/2025 às 14:56:10	Prezados, considerando a desclassificação da proposta do licitante TORINO INFORMÁTICA LTDA., para o ITEM 2, informo que em breve será convocado novo licitante para envio de proposta para o Item. Solicito atenção aos interessados.
Sistema	08/07/2025 às 15:00:40	Prezados, tomadas as devidas providências e convocados os licitantes, fico no aguardo dos solicitados documentos.
Sistema	08/07/2025 às 17:25:18	Senhores, recebidos os documentos, informo que os mesmos serão encaminhados ao setor técnico para análise.
Sistema	08/07/2025 às 17:26:29	Assim, encerraremos os trabalhos por hoje, retornando em data posterior devidamente informada através desse chat, em tempo hábil ao acompanhamento de todos os interessados.
Sistema	08/07/2025 às 17:26:39	Agradeço a atenção dispensada.
Sistema	08/07/2025 às 17:26:52	Finalizo desejando uma excelente tarde a todos.
Sistema	10/07/2025 às 11:36:20	Prezados, bom dia.
Sistema	10/07/2025 às 11:36:57	Informo que retornaremos aos trabalhos deste certame amanhã (11/07/2025), a partir das 10h (horário Brasília).
Sistema	10/07/2025 às 11:37:33	Aguardo a todos no dia e hora aqui agendados.
Sistema	11/07/2025 às 10:00:40	Prezados Licitantes, bom dia.
Sistema	11/07/2025 às 10:21:39	Retornamos aos trabalhos deste certame considerando as propostas apresentadas pelos licitantes POSITIVO TECNOLOGIA S/A (Filial), para o Item 3 e E.R. SOLUCOES INFORMATICA LTDA., para o Item 2.
Sistema	11/07/2025 às 10:39:45	Senhores, recebidos os documentos de propostas e encaminhados ao setor técnico competente para análise, obtivemos os seguintes resultados:
Sistema	11/07/2025 às 10:40:56	a) Parecer Nª 21.2025.SIET.1668662.2025.001317 - ER SOLUÇÕES INFORMÁTICA LTDA., para o ITEM 2 - Conclusão - O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica OPINA pela aceitabilidade do produto ofertado.
Sistema	11/07/2025 às 10:43:00	b) Parecer Nª 22.2025.SIET.1668772.2025.001317 - POSITIVO TECNOLOGIA S/A (FILIAL), para o Item 3 - Conclusão - Após análise da documentação apresentada pela licitante [...] foram observados alguns pontos inconclusivos, marcados como . Os pontos marcados com , são exigências que não foi possível comprovar sua aderência na segunda oportunidade de envio de documentação técnica.
Sistema	11/07/2025 às 10:44:33	Senhores, informo que o Parecer Nª 21.2025.SIET.1668662.2025.001317 e o Parecer Nª 22.2025.SIET.1668772.2025.001317 encontram-se disponíveis no Portal do MPAM, no seguinte
Sistema	11/07/2025 às 10:44:40	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	11/07/2025 às 10:46:44	Senhores, considerando os resultados das análises apresentados nos pareceres, informo o seguinte:
Sistema	11/07/2025 às 11:18:42	a) para saneamento das pendências apontadas nos pareceres, as licitantes serão convocadas para envio de documentos que comprovem o atendimento às exigências apontadas.
Sistema	11/07/2025 às 11:19:44	Assim, em breve convocarei as licitantes no sistema. Solicito atenção aos interessados.
Sistema	11/07/2025 às 11:25:58	Estando os licitantes devidamente convocados, fico no aguardo dos solicitados documentos.
Sistema	11/07/2025 às 14:23:53	Senhores, boa tarde.
Sistema	11/07/2025 às 14:25:25	Considerando o envio dos documentos solicitados referentes ao Item 2 por parte do Licitante E.R. SOLUCOES INFORMATICA LTDA. e sendo os mesmos suficientes para o pleno atendimento da solicitação, informo que:

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Responsável	Data/Hora	Mensagem
Sistema	11/07/2025 às 14:27:08	Este Pregoeiro decide pela Aceitação da proposta de preços do licitante E.R. SOLUCOES INFORMATICA LTDA. para o Item 2, pelo pleno atendimento às exigências técnicas e formais do Edital, referentes à proposta e em conformidade ao Parecer Nª 21.2025.SIET.1668662.2025.001317.
Sistema	11/07/2025 às 16:52:49	Prezados, recebidos os documentos referente ao Item 3, informo que os mesmos serão encaminhados para análise do setor técnico competente.
Sistema	11/07/2025 às 16:54:57	Considerando a hora avançada, encerraremos os trabalhos por hoje, retornando na segunda-feira (14/07/2025), a partir das 11h (horário de Brasília), para continuação dos trabalhos.
Sistema	11/07/2025 às 16:55:26	Aguardo a todos no dia e hora aqui agendados.
Sistema	11/07/2025 às 16:55:54	Agradeço a atenção dispensada. Finalizo desejando uma boa tarde e um excelente fim de semana a todos.
Sistema	14/07/2025 às 11:15:08	Prezados Licitantes, bom dia.
Sistema	14/07/2025 às 11:45:13	Senhores, considerando os documentos de Habilitação apresentados pelo Licitante E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, informo que os mesmos atendem a todas as exigências estabelecidas no instrumento convocatório.
Sistema	14/07/2025 às 11:45:42	Nesse sentido, este Pregoeiro decide pela HABILITAÇÃO do licitante E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47.
Sistema	14/07/2025 às 12:02:53	Senhores, em breve estarei habilitando a licitante no próprio sistema. Solicito atenção.
Sistema	14/07/2025 às 15:26:33	Prezados Licitantes, recebidos os documentos apresentados pelo licitante POSITIVO TECNOLOGIA S/A (FILIAL), referente ao Item 3, em resposta às solicitações constantes do Ofício Nª 256.2025.CPL.1667127.2025.001317, informo o seguinte:
Sistema	14/07/2025 às 15:29:43	Senhores, apenas retificando, as solicitações constam do Parecer Nª 22.2025.SIET.1668772.2025.001317 e não do Ofício Nª 256.2025.CPL.1667127.2025.001317.
Sistema	14/07/2025 às 15:31:35	O setor técnico, através do PARECER Nª 22.2025.SIET.1668772.2025.001317, manifestou-se da seguinte forma:
Sistema	14/07/2025 às 15:40:50	Senhores, retificando, o setor técnico, através do PARECER Nª 25.2025.SIET.1671649.2025.001317, manifestou-se da seguinte forma:
Sistema	14/07/2025 às 15:42:58	3. Conclusão - Não sendo possível constatar os pontos controversos, e não sendo atendido a solicitação para que o licitante, em sua proposta, declare expressamente que a garantia abrange acidentes, inclusive danos não intencionais, tais como QUEDA, TELA QUEBRADA, DERRAMAMENTO DE LÍQUIDOS, OSCILAÇÃO DE ENERGIA, não se limitando às ocorrências supracitadas, sendo o rol apresentado uma lista não exaustiva.
Sistema	14/07/2025 às 15:43:42	Informo que o referido PARECER Nª 25.2025.SIET.1671649.2025.001317 encontra-se disponível no Portal do MPAM, no seguinte endereço:
Sistema	14/07/2025 às 15:44:09	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	14/07/2025 às 15:46:55	Prezados, considerando o Parecer Nª 25.2025.SIET.1671649.2025.001317 e o subitem 10.7.1. c/c 10.3.5. do Edital, informo que a proposta do licitante POSITIVO TECNOLOGIA S/A, CNPJ Nª. 81.243.735/0001-48 para o Item 3 será desclassificada.
Sistema	14/07/2025 às 15:47:58	Na oportunidade, informo que será convocado novo licitante para envio de proposta para o Item 3, nos termos do subitem 10.11 e 9.1. do Edital. Solicito atenção.
Sistema	15/07/2025 às 13:57:49	Prezados, boa tarde. Informo que amanhã (16/07/2025) retornaremos aos trabalhos deste certame, a partir das 14h (horário Brasília).
Sistema	15/07/2025 às 13:58:06	Aguardo a todos no dia e hora aqui agendados. Obrigado.
Sistema	16/07/2025 às 14:04:53	Prezados Licitantes, boa tarde.
Sistema	16/07/2025 às 14:05:31	Retornamos aos trabalhos deste certame considerando a convocação do licitante HOUSE LTDA, CNPJ 35.689.930/0001-89 para envio de proposta ajustada ao lance para o Item 3.

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Responsável	Data/Hora	Mensagem
Sistema	16/07/2025 às 14:07:35	A proposta não foi encaminhada, portanto, a proposta da licitante será recusada em conformidade ao subitem 9.11 c/c subitem 10.3.5 do Edital.
Sistema	16/07/2025 às 14:08:10	Na sequência, será convocado novo licitante para envio de proposta para o Item 3. Solicito atenção aos interessados.
Sistema	16/07/2025 às 14:11:08	Estando o licitante devidamente convocado, fico no aguardo dos solicitados documentos.
Sistema	16/07/2025 às 18:28:03	Prezados, encerraremos os trabalhos por hoje, retornando amanhã (17/07/2025), a partir das 11h (horário Brasília).
Sistema	16/07/2025 às 18:28:12	Aguardo a todos no dia e hora aqui agendados.
Sistema	17/07/2025 às 11:21:56	Prezados Licitantes, bom dia.
Sistema	17/07/2025 às 11:23:36	Prezados, retornamos aos trabalhos deste certame considerando o não envio de proposta de preços ajustada ao lance, por parte da licitante HOUSE LTDA. para o Item 3.
Sistema	17/07/2025 às 11:39:17	Perdão senhores, retificando, a última licitante convocada e que não enviou proposta para o Item 3 foi a empresa MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01.
Sistema	17/07/2025 às 11:40:12	Assim, informo que a proposta da licitante será recusada e convocado novo licitante para envio de proposta ajustada para o item 3. Solicito atenção ao interessado.
Sistema	17/07/2025 às 11:46:27	Prezados, antes da convocação de novo licitante, passaremos ao procedimento de desempate ficto entre licitantes.
Sistema	17/07/2025 às 11:46:37	Solicito atenção às interessadas. Obrigado!
Sistema	17/07/2025 às 11:59:22	Prezados, encerrado o desempate e mantida a classificação, informo que o novo licitante será convocado para envio de proposta ajustada ao lance para o Item 3. Solicito atenção ao interessado.
Sistema	17/07/2025 às 12:05:01	Estando a licitante devidamente convocado, fico no aguardo dos solicitados documentos.
Sistema	17/07/2025 às 12:16:20	Prezado, acolho a solicitação visto que a solicitação foi realizada na hora do almoço.
Sistema	18/07/2025 às 10:27:40	Prezados Licitantes, informo que tivemos problemas de conexão no sistema no dia de ontem e que retornaremos aos trabalhos deste certame na segunda feira (21/07/2025) , a partir das 10h (horário Brasília).
Sistema	18/07/2025 às 10:27:51	Aguardo a todos no dia e hora aqui agendados.
Sistema	18/07/2025 às 10:28:02	Um bom dia e um excelente fim de semana a todos.
Sistema	21/07/2025 às 10:54:36	Prezados, bom dia.
Sistema	21/07/2025 às 10:55:20	Infelizmente não foi possível reabrir no horário agendado por questões de problemas de conexão, já resolvidos.
Sistema	21/07/2025 às 10:56:02	Assim, informo que às 11h (Horário Brasília), retomaremos os trabalhos. Solicito atenção. Obrigado!
Sistema	21/07/2025 às 11:13:15	Senhores, considerando a solicitação de envio da licitante de apenas 1 (um) documento, informo que será solicitado a título de documento complementar (subitem 10.9) Edital.
Sistema	21/07/2025 às 11:13:24	Solicito atenção à interessada.
Sistema	21/07/2025 às 13:22:53	Prezados, recebidos os documentos, informo os mesmos serão encaminhados para o setor técnico para análise e manifestação.
Sistema	21/07/2025 às 13:23:36	Nesse sentido, informo que encerraremos os trabalhos por hoje, retornando em data posterior devidamente informado através desse chat e em tempo hábil para o acompanhamento de todos os interessados.
Sistema	21/07/2025 às 13:24:07	Agradeço a atenção de todos e finalizo desejando-lhes uma excelente semana.
Sistema	25/07/2025 às 10:24:29	Prezados, informo que retornaremos aos trabalhos deste certame segunda-feira (28/07/2025), a partir das 10h (horário Brasília).

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Responsável	Data/Hora	Mensagem
Sistema	25/07/2025 às 10:24:41	Aguardo a todos no dia e hora aqui agendados.
Sistema	25/07/2025 às 10:25:03	Obrigado! Um excelente fim de semana a todos.

Eventos da compra

Data/Hora	Descrição
30/06/2025 às 10:00:02	Abertura da sessão pública
30/06/2025 às 14:06:48	Início da etapa de julgamento de propostas

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Item 4 - Notebook

Notebook Tela: Superior A 14POL, Interatividade Da Tela: Sem Interatividade, Memória Ram: Superior A 8GB, Núcleos Por Processador: 4 A 8, Armazenamento Hdd: 480 A 1.000GB, Armazenamento Ssd: Minimo De 1 Tb, Bateria: Definido Pelo Fabricante, Alimentação: Bivolt Automática, Sistema Operacional: Proprietário, Garantia On Site: 36MESES

Quantidade:	20	Valor estimado:	R$ 17.305,3200 (unitário)
Unidade de fornecimento:	Unidade		R$ 346.106,4000 (total)
Intervalo mínimo entre lances:	R$ 10,0000	Situação:	Adjudicado e Homologado
Critério de julgamento:	Menor Preço		

Adjudicado e Homologado por CPF ***.287.***-*3 - ANDRE VIRGILIO BELOTA SEFFAIR para E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, melhor lance: R$ 19.000,0000 (unitário) / R$ 380.000,0000 (total), valor negociado: R$ 16.990,0000 (unitário) / R$ 339.800,0000 (total)

Propostas do Item 4

Benefício Me/Epp: Conforme Art. 3ª da Lei Complementar nª 123, de 14 de dezembro de 2006
Programa de integridade: Conforme termos previsos na Lei nª 14.133/2021 e no Decreto nª 12.304/2024

Fornecedor	Valor ofertado	Situação
42.816.024/0001-63 - 42.816.024 LEONARDO CATIVO SOUSA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: AM	R$ 10.000,0000 (unitário) R$ 200.000,0000 (total)	Proposta desclassificada

Marca/Fabricante:	Conf TR				
Modelo/versão:	Conf TR				
Valor proposta:	R$ 10.000,0000 (unitário) R$ 200.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	20

Fornecedor	Valor ofertado	Situação
51.750.663/0001-64 - 51.750.663 THIERREZ MATHEUS ALVES SALES Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: DF	R$ 50.000,0000 (unitário) R$ 1.000.000,0000 (total)	-

Marca/Fabricante:	Notebook				
Modelo/versão:	Notebook				
Valor proposta:	R$ 50.000,0000 (unitário) R$ 1.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	20

Fornecedor	Valor ofertado	Situação
39.577.541/0001-12 - A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 10.000,0000 (unitário) R$ 200.000,0000 (total)	Proposta desclassificada

Marca/Fabricante:	Dell				
Modelo/versão:	Dell				
Valor proposta:	R$ 10.000,0000 (unitário) R$ 200.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	20

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Fornecedor	Valor ofertado	Situação
01.319.640/0001-21 - AJL INDUSTRIA E COMERCIO LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: AM	R$ 31.650,0000 (unitário) R$ 633.000,0000 (total)	-

Marca/Fabricante: LENOVO
Modelo/versão: THINKPAD P16V
Valor proposta: R$ 45.000,0000 (unitário) R$ 900.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

52.593.051/0001-78 - CENTERDATA COMERCIO DE PRODUTOS DE INFORMATICA E SERVICOS LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 45.000,0000 (unitário) R$ 900.000,0000 (total)	-

Marca/Fabricante: Lenovo
Modelo/versão: Lenovo
Valor proposta: R$ 45.000,0000 (unitário) R$ 900.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

36.770.097/0001-69 - CIB EMPREENDIMENTOS IMOBILIARIOS LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: MG	R$ 101.190.000,0000 (unitário) R$ 2.023.800.000,0000 (total)	-

Marca/Fabricante: Notebook Tela: Superior A 14POL, Interatividade Da
Modelo/versão: Notebook Tela: Superior A 14POL, Interatividade Da
Valor proposta: R$ 101.190.000,0000 (unitário) R$ 2.023.800.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

05.778.325/0005-47 - E.R. SOLUCOES INFORMATICA LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: ES	R$ 19.000,0000 (unitário) R$ 380.000,0000 (total)	Proposta adjudicada

Marca/Fabricante: LENOVO
Modelo/versão: P16v Intel GEN 2
Valor proposta: R$ 19.000,0000 (unitário) R$ 380.000,0000 (total) Valor negociado: R$ 16.990,0000 (unitário) R$ 339.800,0000 (total) Quantidade ofertada: 20

53.571.459/0001-01 - ELLOELLA DISTRIBUIDORA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: PE	R$ 34.678,9800 (unitário) R$ 693.579,6000 (total)	-

Marca/Fabricante: LENOVO
Modelo/versão: THINKPAD P16V
Valor proposta: R$ 38.532,2000 (unitário) R$ 770.644,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

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Fornecedor	Valor ofertado	Situação
35.689.930/0001-89 - HOUSE LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: AM	R$ 8.000,0000 (unitário) R$ 160.000,0000 (total)	Proposta desclassificada

Marca/Fabricante: Dell
Modelo/versão: Conforme TR
Valor proposta: R$ 8.000,0000 (unitário) R$ 160.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

20.380.331/0001-01 - MR COMERCIO DE PECAS E ACESSORIOS LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: AM	R$ 5.000,0000 (unitário) R$ 100.000,0000 (total)	Proposta desclassificada

Marca/Fabricante: NOT ASPIRE 3 I3
Modelo/versão: 3 I3
Valor proposta: R$ 5.000,0000 (unitário) R$ 100.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

32.872.401/0001-28 - PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 13.980,0000 (unitário) R$ 279.600,0000 (total)	Proposta desclassificada

Marca/Fabricante: Lenovo
Modelo/versão: ThinkPad P16 V
Valor proposta: R$ 13.990,0000 (unitário) R$ 279.800,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

47.172.975/0001-60 - RENATO PALLADINO DE FREITAS 41131128869 Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: SP	R$ 24.990,0000 (unitário) R$ 499.800,0000 (total)	-

Marca/Fabricante: Dell
Modelo/versão: Mobile Precision
Valor proposta: R$ 25.000,0000 (unitário) R$ 500.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

30.948.812/0001-24 - RL INFORMATICA LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: PE	R$ 31.640,0000 (unitário) R$ 632.800,0000 (total)	-

Marca/Fabricante: Lenovo
Modelo/versão: P16v Gen 2
Valor proposta: R$ 35.000,0000 (unitário) R$ 700.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20

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Fornecedor	Valor ofertado	Situação
53.276.627/0001-36 - SB EMPREENDIMENTOS LTDA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: MA	R$ 15.000,0000 (unitário) R$ 300.000,0000 (total)	Proposta desclassificada
Marca/Fabricante: dell Modelo/versão: Notebook Inspiron 16 Plus Valor proposta: R$ 15.000,0000 (unitário) R$ 300.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20		
49.264.057/0001-97 - T. D. A. S. Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 25.489,0000 (unitário) R$ 509.780,0000 (total)	-
Marca/Fabricante: Notebook Modelo/versão: pc Valor proposta: R$ 25.489,0000 (unitário) R$ 509.780,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20		
03.619.767/0005-15 - TORINO INFORMATICA LTDA.. Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: ES	R$ 25.000,0000 (unitário) R$ 500.000,0000 (total)	-
Marca/Fabricante: HP Modelo/versão: Zbook HP Valor proposta: R$ 30.000,0000 (unitário) R$ 600.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20		
28.880.531/0002-16 - TR TECNOLOGIA E COMERCIO LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: ES	R$ 29.980,0000 (unitário) R$ 599.600,0000 (total)	-
Marca/Fabricante: NOTEBOOK DELL CORE ULTRA 7 32GB 1TB WIN11 PRO Modelo/versão: NOTEBOOK DELL CORE ULTRA 7 32GB 1TB WIN11 PRO Valor proposta: R$ 32.000,0000 (unitário) R$ 640.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20		
41.680.761/0001-19 - TREER TECNOLOGY LTDA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: MG	R$ 14.000,0000 (unitário) R$ 280.000,0000 (total)	Proposta desclassificada
Marca/Fabricante: Lenovo Modelo/versão: Thinkpad Valor proposta: R$ 14.000,0000 (unitário) R$ 280.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 20		

Lances do Item 4

Data/hora	Participante	Lance
30/06/2025 às 13:23:33	30.948.812/0001-24	R$ 31.990,0000
30/06/2025 às 13:23:33	53.571.459/0001-01	R$ 34.678,9800
30/06/2025 às 13:24:48	01.319.640/0001-21	R$ 31.650,0000

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Data/hora	Participante	Lance
30/06/2025 às 13:24:48	30.948.812/0001-24	R$ 31.640,0000
30/06/2025 às 13:27:56	03.619.767/0005-15	R$ 25.000,0000
30/06/2025 às 13:30:53	47.172.975/0001-60	R$ 24.990,0000
30/06/2025 às 13:31:07	28.880.531/0002-16	R$ 29.980,0000
30/06/2025 às 13:31:14	32.872.401/0001-28	R$ 13.980,0000

Mensagens do chat do Item 4

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 13:13:30	A abertura do item 4 para lances está agendada para daqui a 10 minutos. Mantenham-se conectados.
Sistema	30/06/2025 às 13:23:30	O item 4 foi aberto. Solicitamos o envio de lances.
Sistema	30/06/2025 às 13:33:31	O item 4 está aguardando decisão de reinício ou encerramento da etapa aberta pelo comprador.
Sistema	30/06/2025 às 14:05:34	O item 4 está encerrado.
Sistema para o participante 20.380.331/0001-01	01/07/2025 às 10:41:40	Sr. Fornecedor MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01, você foi convocado para enviar anexos para o item 4. Prazo para encerrar o envio: 12:46:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Pelo participante 20.380.331/0001-01	01/07/2025 às 10:43:12	Prezado Sr. Pregoeiro, Durante a fase de lances, identificamos um equívoco no valor ofertado para o Item 04, o que inviabiliza o seu fornecimento nas condições registradas. Diante disso, foi inserido, de forma equivocada, um lance que tornou a proposta inexequível. Assim, solicitamos, respeitosamente, a desclassificação do referido item na fase de aceitação, permitindo a convocação do licitante subsequente. Pedimos desculpas pelo transtorno e
Sistema para o participante 20.380.331/0001-01	01/07/2025 às 10:53:35	Prezado Licitante, Bom dia. Agradeço a informação. Acato a solicitação e informo que a proposta será devidamente recusada.
Sistema para o participante 20.380.331/0001-01	01/07/2025 às 10:57:20	O item 4 teve a convocação para envio de anexo(s) CANCELADA às 10:57:20 de 01/07/2025. Anexos vinculados à esta convocação e enviados pelo fornecedor MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01 foram excluídos. Motivo: Proposta desclassificada.
Sistema para o participante 35.689.930/0001-89	01/07/2025 às 10:58:01	Sr. Fornecedor HOUSE LTDA, CNPJ 35.689.930/0001-89, você foi convocado para enviar anexos para o item 4. Prazo para encerrar o envio: 13:00:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Sistema para o participante 35.689.930/0001-89	01/07/2025 às 13:00:02	O item 4 teve a convocação para envio de anexos encerrada às 13:00:02 de 01/07/2025. Nenhum anexo foi enviado pelo fornecedor HOUSE LTDA, CNPJ 35.689.930/0001-89.
Sistema	01/07/2025 às 15:08:25	O desempate por disputa final do art. 60 da lei 14.133/2021 foi iniciado para o item 4. Fornecedores ME/EPP declarantes que apresentaram lance no valor de R$ 10.000,0000 poderão enviar um lance único e fechado até às 15:13:25 do dia 01/07/2025.
Sistema	01/07/2025 às 15:13:26	O desempate por disputa final do art. 60 da lei 14.133/2021 do item 4 foi encerrado. Nenhum fornecedor convocado registrou lance.
Sistema	01/07/2025 às 15:13:26	O item 4 está encerrado.
Sistema	01/07/2025 às 15:13:26	O desempate ref. ao inciso IV do Art. 60 da lei 14.133/2021 foi realizado para o item 4. Foi identificada melhor proposta para o fornecedor 39.577.541/0001-12.

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Responsável	Data/Hora	Mensagem
Sistema para o participante 39.577.541/0001-12	01/07/2025 às 15:16:16	Sr. Fornecedor A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA, CNPJ 39.577.541/0001-12, você foi convocado para enviar anexos para o item 4. Prazo para encerrar o envio: 17:20:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Sistema para o participante 39.577.541/0001-12	01/07/2025 às 17:20:00	O item 4 teve a convocação para envio de anexos encerrada às 17:20:00 de 01/07/2025. Nenhum anexo foi enviado pelo fornecedor A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA, CNPJ 39.577.541/0001-12.
Sistema para o participante 42.816.024/0001-63	02/07/2025 às 10:11:38	Sr. Fornecedor 42.816.024 LEONARDO CATIVO SOUSA, CNPJ 42.816.024/0001-63, você foi convocado para enviar anexos para o item 4. Prazo para encerrar o envio: 12:15:00 do dia 02/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital. .
Sistema para o participante 42.816.024/0001-63	02/07/2025 às 12:15:00	O item 4 teve a convocação para envio de anexos encerrada às 12:15:00 de 02/07/2025. Nenhum anexo foi enviado pelo fornecedor 42.816.024 LEONARDO CATIVO SOUSA, CNPJ 42.816.024/0001-63.
Sistema para o participante 32.872.401/0001-28	02/07/2025 às 12:41:52	Sr. Fornecedor PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA, CNPJ 32.872.401/0001-28, você foi convocado para enviar anexos para o item 4. Prazo para encerrar o envio: 14:45:00 do dia 02/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Sistema para o participante 32.872.401/0001-28	02/07/2025 às 14:45:00	O item 4 teve a convocação para envio de anexos encerrada às 14:45:00 de 02/07/2025. Nenhum anexo foi enviado pelo fornecedor PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA, CNPJ 32.872.401/0001-28.
Sistema para o participante 41.680.761/0001-19	02/07/2025 às 14:53:20	Sr. Fornecedor TREER TECNOLOGY LTDA, CNPJ 41.680.761/0001-19, você foi convocado para enviar anexos para o item 4. Prazo para encerrar o envio: 16:55:00 do dia 02/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Pelo participante 41.680.761/0001-19	02/07/2025 às 14:55:43	Boa tarde
Pelo participante 41.680.761/0001-19	02/07/2025 às 16:16:20	Prezado (a) pregoeiro (a) verificamos e o produto cotado não atende o TR, sendo assim, solicitamos nossa desclassificação.
Sistema para o participante 41.680.761/0001-19	02/07/2025 às 16:48:23	Grato pela informação senhor licitante. Acato a solicitação e informo que a proposta será devidamente recusada.
Sistema para o participante 41.680.761/0001-19	02/07/2025 às 16:49:17	O item 4 teve a convocação para envio de anexo(s) CANCELADA às 16:49:17 de 02/07/2025. Anexos vinculados à esta convocação e enviados pelo fornecedor TREER TECNOLOGY LTDA, CNPJ 41.680.761/0001-19 foram excluídos. Motivo: Proposta desclassificada.
Sistema para o participante 53.276.627/0001-36	03/07/2025 às 10:14:50	Sr. Fornecedor SB EMPREENDIMENTOS LTDA, CNPJ 53.276.627/0001-36, você foi convocado para enviar anexos para o item 4. Prazo para encerrar o envio: 12:16:00 do dia 03/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Sistema para o participante 53.276.627/0001-36	03/07/2025 às 10:18:30	Prezado Licitante, bom dia.
Sistema para o participante 53.276.627/0001-36	03/07/2025 às 10:20:48	Verificou-se que a sua empresa encontra-se com ocorrência de impedimento de licitar vigente, o que afronta diretamente o subitem 5.6 e 5.6.4. do Edital.
Sistema para o participante 53.276.627/0001-36	03/07/2025 às 10:21:40	Assim, com conformidade aos subitens mencionados e o subitem 10.3.5 do Edital, a proposta será recusada.
Sistema para o participante 53.276.627/0001-36	03/07/2025 às 10:22:45	O item 4 teve a convocação para envio de anexo(s) CANCELADA às 10:22:45 de 03/07/2025. Anexos vinculados à esta convocação e enviados pelo fornecedor SB EMPREENDIMENTOS LTDA, CNPJ 53.276.627/0001-36 foram excluídos. Motivo: Proposta desclassificada.

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Responsável	Data/Hora	Mensagem
Sistema para o participante 05.778.325/0005-47	03/07/2025 às 10:24:49	Senhor Licitante, bom dia.
Pelo participante 05.778.325/0005-47	03/07/2025 às 10:28:10	Bom dia, Sr. Pregoeiro!
Sistema para o participante 05.778.325/0005-47	03/07/2025 às 10:29:24	Verificou-se que sua proposta para o Item 4 encontra-se acima do valor estimado pela Administração, apresentado no Quadro-Resumo do Processo de Compra Nª 195.2025.SCOMS.1609045.2025.001317, disponível no Portal do MPAM, no endereço eletrônico já apresentado nesse chat.
Pelo participante 05.778.325/0005-47	03/07/2025 às 10:30:45	Iremos conceder desconto!
Pelo participante 05.778.325/0005-47	03/07/2025 às 10:31:01	Precisa que atualize no sistema ou podemos enviar em nossa proposta direto?
Sistema para o participante 05.778.325/0005-47	03/07/2025 às 10:31:13	Nesse sentido, V. Sa. poderia ajustar o preço de sua Proposta para 17.000,00?
Pelo participante 05.778.325/0005-47	03/07/2025 às 10:32:02	Podemos chegar em R$16990,00
Sistema para o participante 05.778.325/0005-47	03/07/2025 às 10:32:55	V. Sa. será convocada para envio de proposta no prazo de 2 (duas) horas. Caso concorde com o ajuste, basta enviar a proposta com o preço ajustado à negociação. Caso contrário, para garantir celeridade ao procedimento, solicito informar o desinteresse. Obrigado!
Pelo participante 05.778.325/0005-47	03/07/2025 às 10:34:05	Iremos providenciar o envio
Sistema para o participante 05.778.325/0005-47	03/07/2025 às 10:34:13	Prezados, atualizada a página, vi que convergimos nos preços, de forma que o preço proposto ficou melhor do que o solicitado por este Pregoeiro.
Sistema para o participante 05.778.325/0005-47	03/07/2025 às 10:34:44	Assim, informo que V. Sa. será convocada para envio de proposta ajustada ao preço de R$ 16.990,00.
Sistema para o participante 05.778.325/0005-47	03/07/2025 às 10:35:29	Agradeço a disponibilidade de negociação. Solicito atenção à convocação.
Sistema para o participante 05.778.325/0005-47	03/07/2025 às 10:37:35	Sr. Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, você foi convocado para enviar anexos para o item 4. Prazo para encerrar o envio: 12:40:00 do dia 03/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Pelo participante 05.778.325/0005-47	03/07/2025 às 11:24:38	O item 4 teve a convocação para envio de anexos encerrada às 11:24:38 de 03/07/2025. 3 anexos foram enviados pelo fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47.
Sistema para o participante 05.778.325/0005-47	08/07/2025 às 14:43:22	Prezado Licitante, boa tarde.
Pelo participante 05.778.325/0005-47	08/07/2025 às 14:43:59	Boa tarde, Sr. Pregoeiro!
Sistema para o participante 05.778.325/0005-47	08/07/2025 às 14:44:24	Para aceitação da proposta no sistema, precisamos ajustar a proposta nos termos da negociação realizada. Solicito atenção.
Sistema para o participante 05.778.325/0005-47	08/07/2025 às 14:46:05	Sr. Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, você foi convocado para negociação de valor do item 4. Justificativa: Solicito ajustar o valor da proposta inicial ao negociado via chat do sistema ao preço unitário sugerido. .

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Responsável	Data/Hora	Mensagem
Pelo participante 05.778.325/0005-47	08/07/2025 às 14:46:43	O item 4 teve a negociação de valor encerrada pelo fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47. A negociação do item 4 foi aceita pelo fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, tendo informado R$ 16.990,0000.
Sistema para o participante 05.778.325/0005-47	08/07/2025 às 14:47:20	Agradeço a atenção e diligência.
Pelo participante 05.778.325/0005-47	08/07/2025 às 14:47:28	Conforme solicitado, o valor foi alterado no sistema.
Sistema	08/07/2025 às 14:48:00	O item 4 está na etapa de julgamento de proposta no período de intenção de recursos, com acréscimo de 10 minutos a partir de agora - até 08/07/2025 14:58:00.
Sistema	14/07/2025 às 12:05:43	O item 4 está na etapa de habilitação de fornecedores no período de intenção de recursos, com acréscimo de 10 minutos a partir de agora - até 14/07/2025 12:15:43.
Sistema	14/07/2025 às 15:18:10	A fase de recurso do item 4 está aberta até 17/07/2025.
Sistema	18/07/2025 às 00:00:01	A fase de recurso do item 4 foi finalizada no prazo previsto. Não houve registro de recursos.

Eventos do Item 4

Data/Hora	Descrição
01/07/2025 às 10:41:40	Fornecedor MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01 convocado para o envio de anexo. Prazo para encerrar o envio: 12:46:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
01/07/2025 às 10:58:01	Fornecedor HOUSE LTDA, CNPJ 35.689.930/0001-89 convocado para o envio de anexo. Prazo para encerrar o envio: 13:00:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
01/07/2025 às 15:16:16	Fornecedor A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA, CNPJ 39.577.541/0001-12 convocado para o envio de anexo. Prazo para encerrar o envio: 17:20:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
02/07/2025 às 10:11:38	Fornecedor 42.816.024 LEONARDO CATIVO SOUSA, CNPJ 42.816.024/0001-63 convocado para o envio de anexo. Prazo para encerrar o envio: 12:15:00 do dia 02/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital. .
02/07/2025 às 12:41:52	Fornecedor PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA, CNPJ 32.872.401/0001-28 convocado para o envio de anexo. Prazo para encerrar o envio: 14:45:00 do dia 02/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
02/07/2025 às 14:53:20	Fornecedor TREER TECNOLOGY LTDA, CNPJ 41.680.761/0001-19 convocado para o envio de anexo. Prazo para encerrar o envio: 16:55:00 do dia 02/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
03/07/2025 às 10:14:50	Fornecedor SB EMPREENDIMENTOS LTDA, CNPJ 53.276.627/0001-36 convocado para o envio de anexo. Prazo para encerrar o envio: 12:16:00 do dia 03/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
03/07/2025 às 10:37:35	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 convocado para o envio de anexo. Prazo para encerrar o envio: 12:40:00 do dia 03/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
03/07/2025 às 11:24:38	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 finalizou o envio de anexo.
25/07/2025 às 14:34:23	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 teve a proposta adjudicada, melhor lance: R$ 19.000,0000, valor negociado: R$ 16.990,0000.
25/07/2025 às 14:35:09	Item homologado.

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Fase Recursal do Item/Grupo *

* Maiores detalhes sobre recursos, contrarrazões, decisões e revisões deverão ser consultados no sistema.

Sessão 1

Prazos:

Intenção de recurso no julgamento:	08/07/2025 14:58:00
Intenção de recurso na habilitação:	14/07/2025 12:15:43
Recurso:	17/07/2025 23:59:59
Contrarrazão:	22/07/2025 23:59:59

Recursos realizados:

30.948.812/0001-24 - RL INFORMATICA LTDA

Intenção de recurso no julgamento:	08/07/2025 14:56:41
Intenção de recurso na habilitação:	14/07/2025 12:10:58
Recurso:	(Desistiu Cadastro)
Contrarrazões:	Não foi realizado cadastro

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MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

ATA DE REGISTRO DE PREÇO Nº 13.2025.CPL.1679330.2025.001317

PREGÃO ELETRÔNICO N.° 94.010/2025-CPL/MP/PGJ-SRP
PROCEDIMENTO INTERNO N.º 2025.001317

Pelo presente instrumento, o **MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS**, órgão gerenciador deste Registro de Preços, situado na Avenida Coronel Teixeira, n.º 7995, Bairro Nova Esperança, CEP: 69037-473, representado neste ato por seu Subprocurador-Geral de Justiça para Assuntos Administrativos, Dr. **ANDRÉ VIRGÍLIO BELOTA SEFFAIR** , inscrito no CPF sob nº 590.287.772-53, portador da Identidade Funcional nº 239 PGJ/AM, residente e domiciliado nesta Capital, e a empresa **E.R. SOLUCOES INFORMATICA LTDA.** , inscrita no CNPJ N.º 05.778.325/0005-47, DORAVANTE denominada **FORNECEDORA**, firmam a presente **ATA DE REGISTRO DE PREÇOS** , mediante as cláusulas e condições a seguir estabelecidas:

CLÁUSULA PRIMEIRA – DO OBJETO

A presente Ata tem por objeto registrar os preços das empresas vencedoras do certame licitatório referente ao **Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP**, na modalidade de Sistema de Registro de Preços, para *fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses*, conforme as especificações mínimas e os quantitativos constantes do Edital do cotejo em epígrafe, descritos e qualificados na forma de seu Anexo.

I. Eis os itens registrados em favor da Fornecedora:

E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.º 05.778.325/0005-47

ITEM 1 - COMPUTADOR TIPO 1 - “ALL IN ONE COM MONITOR AUXILIAR”.

Quantidade registrada: 1000 (um mil) unidades.

Marca/Modelo: LENOVO TC TINY-IN-ONE 23.8" TIO24 GEN 5.

Valor Unitário do Item: R$ 9.880,00 (*nove mil oitocentos e oitenta reais*).

ITEM 2 - COMPUTADOR TIPO 2 - “WORKSTATION COM MONITOR”.

Quantidade registrada: 50 (cinquenta) unidades.

Marca/Modelo: LENOVO THINKSTATION P3 TW.

Valor Unitário do Item: R$ 20.300,00 (*vinte mil e trezentos reais*).

ITEM 4 - COMPUTADOR TIPO 4 - "WORKSTATION MÓVEL".

Quantidade registrada: 20 (vinte) unidades

Marca/Modelo: THINKPAD P16v GEN 2 (INTEL).

Valor Unitário do Item: R$ 16.990,00 (*dezesseis mil novecentos e noventa reais*).

CLÁUSULA SEGUNDA – DA VALIDADE DA ATA

A presente **Ata de Registro de Preços terá validade de 12 (doze) meses**, contados a partir de sua publicação no Portal Nacional das Contratações Públicas - PNCP.

Subcláusula Primeira. O prazo de vigência da ata de registro de preços poderá ser prorrogado, por igual período de 12 (doze) meses, desde que comprovado o preço vantajoso.

Subcláusula Segunda. Durante o prazo de validade desta Ata de Registro de Preço, o MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS não será obrigado a firmar as contratações que dela poderão advir, facultando-se-lhe a realização de licitação específica para a aquisição pretendida, sendo assegurado ao beneficiário do registro preferência de fornecimento em igualdade de condições.

CLÁUSULA TERCEIRA – DA UTILIZAÇÃO DA ATA DE REGISTRO DE PREÇOS

A presente Ata de Registro de Preço poderá ser usada por todos os órgãos da Administração Pública, desde que autorizados pelo **MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS**.

Subcláusula Primeira. O preço ofertado pela(s) empresa(s) signatária(s) da presente Ata de Registro de Preços é o especificado nesta Ata.

Subcláusula Segunda. Em cada fornecimento decorrente desta Ata, serão observadas, quanto ao preço, as cláusulas e condições constantes do Edital referente a mesma.

Subcláusula Terceira. Em cada fornecimento, o preço unitário a ser pago será o constante da proposta apresentada pelas empresas detentoras da presente Ata, as quais também a integram.

CLÁUSULA QUARTA – DA CLASSIFICAÇÃO DAS PROPOSTAS

A ordem de classificação dos licitantes observará suas propostas finais ofertadas durante o certame, conforme exposto na Ata da Sessão, para fins de formação de cadastro de reserva no caso de impossibilidade de atendimento pelo primeiro colocado da ata.

CLÁUSULA QUINTA – DO FORNECIMENTO E EXECUÇÃO

A FORNECEDORA deverá efetuar a entrega do objeto contratado dentro do prazo e de acordo com as especificações constantes do Edital da licitação e deste Instrumento, observando estreitamente as prescrições e as recomendações do fabricante, a legislação estadual ou municipal, se houver, bem como outras normas correlatas, ainda que não estejam explicitamente aqui citadas.

Subcláusula Primeira. Os materiais deverão ser industrializados, de primeiro uso, novos, sem qualquer vício ou avaria, entregues acondicionados adequadamente em suas embalagens originais lacradas, acompanhados de guias e manuais de utilização, se for o caso, com garantia do fabricante, devendo, se for o caso, constar em suas embalagens suas respectivas especificações, sob pena de ser recusado.

Subcláusula Segunda. Responsabilizar-se pelo transporte dos produtos, desde o local da embalagem até a sua entrega no horário e endereço indicados pela ADQUIRENTE.

Subcláusula Terceira. Apresentar justificativa por escrito, devidamente comprovada, nos casos de ocorrência de fato superveniente, excepcional ou imprevisível, estranho à vontade das partes, e de impedimento de execução por fato ou ato de terceiro reconhecido pela ADQUIRENTE em documento contemporâneo a sua ocorrência, quando não puder cumprir os prazos estipulados para a execução, total ou parcial, do objeto.

Subcláusula Quarta. Aceitar todas as decisões, métodos de inspeção, verificação e controle, obrigando-se a fornecer todos os dados, elementos e explicações que o MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS julgar necessário.

Subcláusula Quinta. Manter, durante toda a execução da Ata de Registro de Preços, em compatibilidade com as obrigações assumidas, todas as condições de habilitação e qualificação exigidas na licitação.

Subcláusula Sexta. A empresa vencedora, quando da solicitação do material, deverá retirar a nota de empenho no prazo de 5 (cinco) dias úteis a contar da comunicação efetivada, **sob pena de decair o direito à contratação.**

I - Como condição inafastável para que seja emitida Nota de Empenho à Fornecedora, esta deverá, também, estar cadastrada junto ao **SISTEMA DE ADMINISTRAÇÃO FINANCEIRA E CONTABILIDADE – CADASTRAMENTO DE CREDORES – da SECRETARIA DA FAZENDO DO ESTADO DO AMAZONAS – SEFAZ.**

II - Como condição para emissão da nota de empenho a licitante vencedora deverá manter as mesmas condições de habilitação, cuja confirmação será feita através de consulta ao SICAF ou através da internet nos respectivos sites dos órgãos emissores das certidões de regularidade fiscal.

III - O prazo de convocação poderá ser prorrogado uma vez, por igual período, quando solicitado pela vencedora durante o seu transcurso, desde que ocorra motivo justificado e aceito pela Administração.

IV - Se a licitante vencedora não apresentar situação de regularidade documental, no ato da emissão da nota de empenho, ou recusar-se injustificadamente a receber a nota de empenho no prazo estabelecido, os demais licitantes serão convocados para celebrar o contrato, observada a ordem de classificação, e assim sucessivamente, sem prejuízo da aplicação das sanções cabíveis.

Subcláusula Sétima. Alternativamente à convocação para comparecer perante o órgão ou entidade para a assinatura do Termo de Contrato ou aceite do instrumento equivalente, a Administração poderá encaminhá-lo para assinatura ou aceite da

Adjudicatária, mediante correspondência eletrônica no e-mail constante da proposta, para que seja assinado eletronicamente pelo Sistema SEI ou aceito no prazo de 05 (cinco) dias, a contar da data de seu recebimento.

CLÁUSULA SEXTA – DA ENTREGA E DO RECEBIMENTO

As solicitações do material serão efetuadas pela **DIRETORIA DE TECNOLOGIA DE INFORMAÇÃO E COMUNICAÇÃO - DTIC**, mediante Nota de Autorização de Fornecimento, ou documento equivalente, disponibilizada e enviada, preferencialmente de forma eletrônica, à FORNECEDORA, devendo ser assinada eletronicamente via Sistema SEI por funcionário/representante da FORNECEDORA. As autorizações de fornecimento para a prestação dos serviços objeto do contrato serão expedidas conforme necessidade da ADQUIRENTE.

Subcláusula Primeira. O material solicitado deverá ser entregue **n o prazo máximo de 90 (noventa) dias corridos**, contados a partir do recebimento da autorização de fornecimento de materiais e serviços ou a partir da aprovação da amostra, conforme o caso.

Subcláusula Segunda. O recebimento dos produtos será realizado pelo **SETOR DE PATRIMÔNIO E MATERIAL - SPAT** , na forma prevista no art. 140 da Lei nº 14.133/2021, mediante Nota de Entrega ou documento equivalente, que deverá conter apenas os materiais e/ou serviços nas quantidades efetivamente solicitadas e entregues, observando-se as disposições constantes do item 5 e 10 do TERMO DE REFERÊNCIA Nº 2.2025.DTIC.1525128.2025.001317

Subcláusula Terceira. O RECEBIMENTO PROVISÓRIO dos materiais não constitui aceitação deles.

Subcláusula Quarta. AO RECEBIMENTO PROVISÓRIO ou DEFINITIVO do objeto não exclui a responsabilidade civil a ele relativa, nem a ético-profissional, pela perfeita execução do objeto desta Ata.

Subcláusula Quinta. A descoberta de defeitos, falhas ou imperfeições ocultas que impeçam ou reduzam a usabilidade dos materiais, verificados após o seu pagamento, implicará na obrigação da FORNECEDORA de substituí-los/refazê-los no prazo máximo de 3 (três) dias corridos a contar da comunicação pela ADQUIRENTE.

Subcláusula Sexta. A FORNECEDORA será responsável pelo transporte dos produtos, desde o local de sua fabricação/embalagem, conforme o caso, até o local de sua entrega, em dias úteis, no horário das 9h00 às 15h00 (horário de Brasília), no seguinte endereço: **Av. Coronel Teixeira, n.º 7.995 – Nova Esperança, CEP. 69037- 473 / Manaus-AM.**

Subcláusula Sétima. A entrega dos materiais deverá ser previamente agendada com o **SETOR DE PATRIMÔNIO E MATERIAL – SPAT, pelo telefone (92) 3655-0766 ou e-mail** *material@mpam.mp.br*.

Subcláusula Oitava. A FORNECEDORA ficará obrigado a atender a todos os pedidos efetuados durante a vigência desta ata, mesmo se a entrega deles decorrente estiver prevista para data posterior a do seu vencimento.

Subcláusula Nona. A FORNECEDORA deverá, obrigatoriamente, entregar a totalidade do produto solicitado, não sendo admitido o parcelamento, sob pena das sanções legais cabíveis, acompanhados dos manuais correspondentes e termos de garantia, quando necessário.

Subcláusula Décima. O não cumprimento do prazo de entrega poderá caracterizar inexecução contratual, parcial ou total, e acarretar a aplicação de sanções administrativas previstas em Edital.

Subcláusula Onze. Não será obrigação da ADQUIRENTE aguardar mais demandas para agrupar solicitações de mais de uma unidade nos processos de compra.

CLÁUSULA SÉTIMA – DO PAGAMENTO

O pagamento devido à CONTRATADA será creditado em conta-corrente por meio de ordem bancária, efetuado mediante apresentação de nota fiscal/fatura atestada e visada pelos órgãos de fiscalização e acompanhamento do fornecimento do material, no prazo não superior a trinta dias, contados a partir do atesto da Administração na fatura apresentada.

I – A respectiva nota fiscal/fatura dos produtos, emitidas em conformidade com o Protocolo ICMS 42/2009 (NF-e), deverá estar devidamente discriminada, em nome da **PROCURADORIA-GERAL DE JUSTIÇA, CNPJ n.º 04.153.748/0001-85**, e acompanhada das respectivas Certidões Negativas de Débito para com a Seguridade Social, para com o Fundo de Garantia por Tempo de Serviço, e ainda, Certidão Negativa de Débito Trabalhista, Certidão de regularidade junto a Fazenda Federal, Estadual e Municipal;

II – Nenhum pagamento será efetuado à CONTRATADA enquanto pendente de liquidação qualquer obrigação financeira que lhe for imposta, em virtude de penalidade ou inadimplência.

Subcláusula Primeira. Qualquer atraso ocorrido na apresentação da nota fiscal/fatura, ou dos documentos exigidos como condição de pagamento por parte da CONTRATADA, importará em prorrogação automática do prazo de vencimento da obrigação do Contratante.

Subcláusula Segunda. Nenhum pagamento isentará o fornecedor das responsabilidades atinentes ao produto, nem tampouco implicará a aprovação definitiva da entrega, total ou parcialmente.

Subcláusula Terceira. Nos casos de eventuais atrasos de pagamento, desde que a CONTRATADA não tenha concorrido de alguma forma para tanto, fica convencionado que os encargos moratórios devidos pela CONTRATANTE, entre a data de vencimento e a do dia do efetivo pagamento da Fatura/Nota Fiscal, a serem incluídos na fatura do mês seguinte ao da ocorrência, serão calculados por meio da aplicação da seguinte fórmula:

EM = I x N x VP, onde:

EM = Encargos moratórios;

N = Número de dias entre a data prevista para o pagamento e a do efetivo pagamento;

VP = Valor da parcela em atraso.

I = Índice de compensação financeira = 0,00016438, assim apurado:

$$I = \frac{i}{365} = I = \frac{6/100}{365} = I = 0,00016438$$

Onde i = taxa percentual anual no valor de 6%”.

Subcláusula Quarta. Nenhum pagamento será efetivado sem que a área solicitante, emita o Termo de Recebimento Definitivo e ateste que o objeto

contratado está integralmente sendo entregue/disponibilizado pela FORNECEDORA.

CLÁUSULA OITAVA – DAS PENALIDADES

Se a FORNECEDORA, sem justa causa, não cumprir as obrigações assumidas ou infringir preceitos legais, serão aplicadas as **sanções previstas no TERMO DE REFERÊNCIA Nº 2.2025.DTIC.1525128.2025.001317 e no Edital da Licitação**, segundo a gravidade da falta, observando-se os limites estabelecidos no **item 22.4 do instrumento convocatório.**

Subcláusula Primeira. A inexecução total ou parcial do contrato enseja a sua rescisão pelos motivos legais.

Subcláusula Segunda. Caso a multa aplicada seja superior ao valor da garantia prestada, além da perda desta, responderá a FORNECEDORA pela sua diferença, a qual será descontada dos pagamentos eventualmente devidos pelo MPAM ou ainda, quando for o caso, cobrada judicialmente.

Subcláusula Terceira. O Ministério Público do Estado do Amazonas poderá cobrar o valor remanescente judicialmente, conforme artigo 419 do Código Civil, quando o valor da multa não for suficiente para cobrir os prejuízos causados pela conduta da FORNECEDORA.

Subcláusula Quarta. Se, durante o processo de aplicação de penalidade, houver indícios de prática de infração administrativa tipificada pela Lei nº 12.846, de 1º de agosto de 2013, como ato lesivo à Administração Pública nacional ou estrangeira, cópias do processo administrativo necessárias à apuração da responsabilidade da empresa deverão ser remetidas à autoridade competente, com despacho fundamentado, para ciência e decisão sobre a eventual instauração de investigação preliminar ou Processo Administrativo de Responsabilização – PAR.

Subcláusula Quinta. A apuração e o julgamento das demais infrações administrativas não consideradas como ato lesivo à Administração Pública nacional ou estrangeira nos termos da Lei nº 12.846, de 1º de agosto de 2013, seguirão seu rito normal na unidade administrativa.

Subcláusula Sexta. O processamento do PAR não interfere no seguimento regular dos processos administrativos específicos para apuração da ocorrência de danos e prejuízos à Administração Pública Estadual resultantes de ato lesivo cometido por pessoa jurídica, com ou sem a participação de agente público.

CLÁUSULA NONA – DO REEQUILÍBRIO CONTRATUAL

Subcláusula Primeira. O preço registrado poderá ser revisto em decorrência de eventual redução daqueles praticados no mercado, ou de fato que eleve o custo dos serviços ou bens registrados, cabendo ao órgão gerenciador promover as necessárias negociações junto aos fornecedores ou, se houver, após a data da apresentação da proposta, criação, alteração ou extinção de quaisquer tributos ou encargos legais ou a superveniência de disposições legais, com comprovada repercussão sobre os preços contratados.

Subcláusula Segunda. Quando o preço inicialmente registrado, por motivo superveniente, tornar-se superior ao praticado no mercado, o órgão gerenciador deverá:

a) convocar o fornecedor visando a negociação para redução de preços e sua adequação ao praticado no mercado; frustrada a negociação, o fornecedor será liberado do compromisso assumido;

b) convocar os demais fornecedores, visando igual oportunidade de negociação.

Subcláusula Terceira. Quando o preço de mercado torna-se superior aos preços registrados e o fornecedor, mediante requerimento devidamente comprovado, não puder cumprir o compromisso, o órgão gerenciador poderá:

a) liberar o fornecedor do compromisso assumido, sem aplicação da penalidade, confirmado a veracidade dos motivos e comprovantes apresentados, e se a comunicação ocorrer antes do pedido de fornecimento; e

b) convocar os demais fornecedores, visando igual oportunidade de negociação.

Subcláusula Quarta. Não havendo êxito nas negociações, o órgão gerenciador deverá proceder à revogação da Ata de Registro de Preços, adotando as medidas cabíveis para a obtenção da contratação mais vantajosa.

CLÁUSULA DEZ – DO REAJUSTE DOS PREÇOS

O(s) preço(s) registrado(s) nesta Ata somente poderá(ão) ser alterado(s) nos casos de prorrogação da ata de registro de preços, ocasião em que haverá o REAJUSTE com base no IPCA acumulado.

CLÁUSULA ONZE – DA FISCALIZAÇÃO

O Ordenador de Despesas delega competência a servidor responsável pela **DIRETORIA DE TECNOLOGIA DA INFORMAÇÃO E COMUNICAÇÃO - DTIC da PROCURADORIA GERAL DE JUSTIÇA**, para solicitar a aquisição do objeto ora registrado e fiscalizar a execução desta Ata de Registro de Preços.

CLÁUSULA DOZE – DOS DIREITOS E DAS OBRIGAÇÕES

Subcláusula Primeira. Compete ao órgão gerenciador:

a) Acompanhar e fiscalizar, como lhe aprouver e no seu exclusivo interesse, na forma prevista na Lei nº 14.133, de 1º de abril de 2021, que dispõe sobre a Lei de Licitações e Contratos Administrativos, o exato cumprimento das obrigações previstas neste Termo.

b) Designar servidor qualificado para acompanhar a(s) entrega(s) do objeto e o cumprimento dos termos contratuais, editalícios e seus anexos;

c) Registrar e notificar o fornecedor, por escrito, a ocorrência de eventuais imperfeições, defeitos, vícios, vencimento do produto, fixando prazo para a sua substituição;

d) Rejeitar, no todo ou em parte, os produtos entregues em desacordo com as especificações deste Termo;

e) Efetuar regularmente o pagamento à Contratada, dentro dos critérios estabelecidos neste Termo, após o cumprimento das formalidades legais, por meio de Ordem Bancária, após o “atesto” das notas fiscais, bem como da apresentação pela Contratada dos demais documentos exigidos para tal fim (requerimento de pagamento, recibo de pagamento, certidões: Federal, Estadual, Municipal, Trabalhista e FGTS).

Subcláusula Segunda. Compete às Entidades Participantes destinatários:

a) Requisitar o fornecimento de materiais cujos preços encontram-se registrados nesta Ata.

b) Emitir Nota de Empenho a crédito do fornecedor no valor total correspondente a quantidade de material solicitado.

c) Elaborar termo contratual, quando necessário nas situações previstas em Lei.

d) Efetuar o pagamento referente a aquisição do material nos termos previstos no edital da Licitação de Registro de Preços.

Subcláusula Terceira. Compete à FORNECEDORA, além daquelas previstas no subitem 7.1 do TERMO DE REFERÊNCIA Nº 2.2025.DTIC.1525128.2025.001317, Anexo I:

a) Fornecer durante 12 (doze) meses, a contar da publicação do extrato desta Ata na Imprensa Oficial, os itens relacionados na presente Ata, na forma e condições fixadas no Edital e na proposta, mediante autorização e Nota de Empenho, devidamente assinada pelo responsável, em conformidade com o Edital e demais informações constantes da Licitação de Registro de Preços.

b) Retirar a Nota de Empenho no prazo de até 05 (cinco) dias úteis, contados da intimação para recebimento, nos termos do Edital, parte integrante desta Ata de Registro de Preços.

c) Entregar os materiais no local previsto no instrumento convocatório, de acordo com os termos do Edital.

d) Providenciar a imediata correção das deficiências, falhas ou irregularidades constatadas pelos órgãos e entidades referentes à forma de fornecimento dos materiais e ao cumprimento das demais obrigações assumidas nesta Ata.

e) Em havendo necessidade, assente no que preceitua o art. 124, I, c/c Art. 125 da Lei Federal nº 14.133, de 1 de abril de 2.021, aceitar os acréscimos ou supressões nos quantitativos que se fizerem indispensáveis, sempre nas mesmas condições registradas.

f) Ressarcir os prejuízos causados ao Estado do Amazonas ou a terceiros, provocados por ineficiência ou irregularidade cometidas na execução das obrigações assumidas na presente Ata;

g) Cumprir as obrigações descritas no Edital e seus Anexos.

CLÁUSULA TREZE – DO CANCELAMENTO DA ATA E REGISTRO DE PREÇOS

Esta Ata de Registro de Preços poderá ser cancelada, de pleno direito:

I - Pela Administração, quando:

a) a detentora não cumprir as obrigações constantes desta Ata de Registro de Preços;

b) a detentora não assinar o contrato no prazo estabelecido e a Administração não aceitar sua justificativa;

c) a detentora der causa a rescisão administrativa de contrato decorrente de registro de preços;

d) em qualquer das hipóteses de inexecução total ou parcial de contrato decorrente do registro de preços;

e) os preços registrados se apresentarem superiores aos praticados no mercado;

f) por razões de interesse público devidamente demonstradas e justificadas pela Administração;

II - Pelas detentoras, quando, mediante solicitação por escrito, comprovarem estar impossibilitadas de cumprir as exigências desta Ata de Registro de Preços.

Subcláusula Primeira. A solicitação das detentoras para cancelamento dos preços registrados deverá ser dirigida ao FISCAL da Ata de Registro de Preços ou à COMISSÃO PEMANENTE DE LICITAÇÃO por meio do endereço eletrônico protocolo@mpam.mp.br.

Subcláusula Segunda. A comunicação do cancelamento do preço registrado, nos casos previstos neste documento e, a oportunização do contraditório e ampla defesa, serão feitos por correio eletrônico (preferencialmente) nos endereços de e-mails constantes da Proposta de Preços e SICAF ou por correspondência com aviso de recebimento ou, ainda, por meio de entrega pelo Setor de Transportes (no caso de empresa sediada no mesmo município da Contratante), juntando-se o comprovante aos autos que deram origem ao registro de preços.

Subcláusula Terceira. No caso de ser ignorado, incerto ou inacessível o endereço da detentora, a comunicação será feita por publicação na IMPRENSA OFICIAL, considerando-se cancelado o preço registrado após a publicação.

CLÁUSULA CATORZE - DA POSSIBILIDADE DE ADESÃO POR ÓGÃOS OU ENTIDADES NÃO PARTICIPANTES

Subcláusula Primeira. Esta Ata de Registro de Preços poderá, durante sua vigência, ser utilizada por outros órgãos ou entidades da Administração Pública que não tenham participado do processo licitatório, desde que:

a) exista solicitação formal do órgão ou entidade não participante;

b) haja anuência do órgão gerenciador e do fornecedor registrado quanto à possibilidade de atendimento da demanda adicional;

c) seja demonstrada, de forma justificada, a vantagem da adesão;

d) sejam observados os limites e condições previstos no edital e na legislação aplicável.

Subcláusula Segunda. A adesão dar-se-á em caráter **excepcional e pontual**, sendo **vedada sua utilização como instrumento de suprimento contínuo ao longo do exercício financeiro**, sob pena de descaracterização da finalidade do sistema de registro de preços.

Subcláusula Terceira. A contar da data da autorização formal para adesão, o órgão ou entidade solicitante disporá do prazo **improrrogável de 90 (noventa) dias corridos** para concluir o respectivo processo de contratação, com a formalização do instrumento contratual ou equivalente.

a) O não cumprimento do prazo referido nesta subclásula implicará a **automática perda do direito à adesão**, tornando sem efeito a autorização concedida e autorizando o órgão gerenciador a dispor dos quantitativos eventualmente reservados.

b) A reiteração de pedidos de adesão não concluídos no prazo estabelecido poderá ensejar o indeferimento de futuras solicitações do mesmo órgão ou entidade, sem prejuízo da comunicação aos órgãos de controle.

Subcláusula Quarta. As contratações decorrentes de adesão deverão observar integralmente as condições pactuadas nesta Ata de Registro de Preços, inclusive no que se refere a preços, prazos, especificações, obrigações, penalidades e vigência.

Subcláusula Quinta. O órgão ou entidade aderente será responsável pela

condução do respectivo processo de contratação, pela execução contratual e pela aplicação de sanções administrativas, nos termos da legislação vigente.

Subcláusula Sexta. É vedada ao órgão ou entidade não participante a modificação unilateral das condições constantes nesta Ata, salvo nas hipóteses previstas em lei e com a concordância expressa do fornecedor.

CLÁUSULA QUINZE - DA AUTORIZAÇÃO PARA AQUISIÇÃO E EMISSÃO DAS ORDENS DE FORNECIMENTO

As aquisições do objeto da presente Ata de Registro de Preços serão autorizadas, caso a caso, pelo(a) Ordenador(a) de Despesas do **MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS.**

Subcláusula Primeira. A emissão das autorizações de fornecimento, sua retificação ou cancelamento, total ou parcial serão igualmente autorizados pelo órgão requisitante.

Subcláusula Segunda. Durante o prazo de validade do Registro de Preços, o **MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS** poderá ou não contratar o objeto deste pregão;

CLÁUSULA DEZESSEIS – DAS DISPOSIÇÕES FINAIS E DO FORO:

Subcláusula Primeira: Integram esta Ata, o Edital do **Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ-SRP** e as propostas da Fornecedora.

Subcláusula Segunda: Durante a vigência da Ata de Registro de Preços, os preços deverão ser compatíveis com a conjuntura do mercado.

Subcláusula Terceira: Os pedidos de alteração de marcas e/ou modelo do objeto registrado deverão ser protocolados em até **5 (cinco) dias do recebimento da Nota de Empenho**, com a devida documentação comprobatória dos fatos alegados, sob pena de não apreciação dos pedidos por inépcia.

Subcláusula Quarta: Fica eleito o Foro da Cidade de Manaus/AM para dirimir quaisquer questões decorrentes da utilização da presente ata.

Subcláusula Quinta: Os casos omissos serão resolvidos de acordo com as disposições constantes do Ato n.º 008/2024/PGJ e da Lei 14.133/2021, e das demais normas legais aplicáveis.

Manaus (AM), 23 de Julho de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS
Ordenador de Despesas

E.R. SOLUÇÕES INFORMATICA LTDA
CNPJ Nº 05.778.325/0005-47
JULIA BARBOSA AVELAR
PROCURADORA
CPF: 318.101.328-51

Documento assinado eletronicamente por **André Virgílio Belota Seffair**, **Subprocurador(a)-Geral de Justiça para Assuntos Administrativos**, em 25/07/2025, às 15:18, conforme art. 1º, III, "b", da Lei 11.419/2006.

Documento assinado eletronicamente por **George Eduardo Saliby**, **Usuário Externo**, em 28/07/2025, às 12:54, conforme art. 1º, III, "b", da Lei 11.419/2006.

Documento assinado eletronicamente por **Andre Luis Machado Pelicioni**, **Usuário Externo**, em 28/07/2025, às 12:55, conforme art. 1º, III, "b", da Lei 11.419/2006.

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MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

EXTRATO Nº 11.2025.CPL.1679331.2025.001317

EXTRATO DA ATA DE REGISTRO DE PREÇOS Nº 13.2025.CPL.1679330.2025.001317

PREGÃO ELETRÔNICO N.° 94.010/2025-CPL/MP/PGJ-SRP PROCEDIMENTO INTERNO N.º 2025.001317

INTERESSADO: MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS.

Aos vinte e três dias do mês de julho do ano de dois mil e vinte e cinco, no Órgão Gerenciador, são registrados os preços da empresa abaixo mencionada, para *formação de registro de preços para fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses*, conforme as especificações mínimas e os quantitativos constantes do Edital do Pregão Eletrônico em epígrafe, descritos e qualificados na forma de seu Anexo. As especificações constantes do respectivo Processo, assim como os termos das propostas de preços, integram o presente registro, independentemente de transcrição. O contrato, ou instrumento hábil que vier a substituí-lo, na forma do art. 95 da Lei n.° 14.133/21, indicará o(s) local(is) de entrega dos produtos/prestação do(s) serviço(s). **O presente registro terá vigência de 12 (doze) meses**, contados a partir de sua publicação no Portal Nacional de Compras Públicas - PNCP e no Diário Oficial Eletrônico do Ministério Público do Estado do Amazonas - DOMPE.

ATA DE REGISTRO DE PREÇO Nº 13.2025.CPL.1679330.2025.001317

E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.º 05.778.325/0005-47

ITEM 1 - COMPUTADOR TIPO 1 - “ALL IN ONE COM MONITOR AUXILIAR”.

Quantidade registrada: 1000 (um mil) unidades.

Marca/Modelo: LENOVO TC TINY-IN-ONE 23.8" TIO24 GEN 5.

Valor Unitário do Item: R$ 9.880,00 (*nove mil oitocentos e oitenta reais*).

ITEM 2 - COMPUTADOR TIPO 2 - “WORKSTATION COM MONITOR”.

Quantidade registrada: 50 (cinquenta) unidades.

Marca/Modelo: LENOVO THINKSTATION P3 TW.

Valor Unitário do Item: R$ 20.300,00 (*vinte mil e trezentos reais*).

ITEM 4 - COMPUTADOR TIPO 4 - "WORKSTATION MÓVEL".

Quantidade registrada: 20 (vinte) unidades

Marca/Modelo: THINKPAD P16v GEN 2 (INTEL).

Valor Unitário do Item: R$ 16.990,00 (*dezesseis mil novecentos e noventa reais*).

DA FISCALIZAÇÃO DA ATA DE REGISTRO DE PREÇOS

O Ordenador de Despesas delega competência aos servidores responsáveis pela **DIRETORIA DE TECNOLOGIA DA INFORMAÇÃO E COMUNICAÇÃO - DTIC** desta PROCURADORIA GERAL DE JUSTIÇA, para solicitar a aquisição do objeto ora registrado e fiscalizar a execução desta Ata de Registro de Preços.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos
Ordenador de Despesas

Documento assinado eletronicamente por **André Virgílio Belota Seffair**, **Subprocurador(a)-Geral de Justiça para Assuntos Administrativos**, em 25/07/2025, às 15:18, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1679331** e o código CRC **9012796F**.

concessão de passagens e diárias e dá outras providências,

RESOLVE:

I - CONSIDERAR AUTORIZADO o deslocamento do servidor LEANDRO DE OLIVEIRA PORTELA, Agente de Apoio - Motorista/Segurança, ao município de Iranduba/AM, no dia 18.07.2025, com o objetivo de realizar o transporte do mobiliário que constava nas Promotorias de Justiça de Iranduba;

II - CONCEDER-LHE 0,5 (meia) diária, na forma da lei, para o custeio de alimentação;

III – DETERMINAR, dentro do prazo legal, a apresentação do relatório de prestação de contas de diárias, em conformidade com as exigências do Ato PGJ n.° 002/2011, de 06.01.2011, alterado pelo Ato PGJ n.º 067/2012, de 20.03.2012.

Publique-se, registre-se, cumpra-se.

SUBPROCURADORIA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus/AM, 29 de julho de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos

PORTARIA Nº 791/2025/SUBADM

O SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, por substituição legal, no uso de suas atribuições legais, e

CONSIDERANDO o teor do Procedimento Interno nº 2025.014103 – SEI;

CONSIDERANDO ainda o disposto no art. 4.º, II, do ATO PGJ N.º 002/2011, datado de 06.01.2011, que dispõe sobre o deslocamento dos membros e servidores do Ministério Público para fora da sede de exercício, estabelece normas para a concessão de passagens e diárias e dá outras providências,

RESOLVE:

I - AUTORIZAR o deslocamento do Policial Militar Disposicionado 1º SGT PM ALEX OLIVEIRA DE SOUZA, ao município de Presidente Figueiredo/AM, no dia 04.08.2025, com o objetivo de conduzir a Exma. Sra. Dra. Anabel Vitória Mendonça de Souza, Subprocuradora-Geral de Justiça para Assuntos Jurídicos e Institucionais, que ministrará o módulo de Neurociência e Comportamento Humano, no horário de 9h às 15h, do Curso de Formação de Facilitadores em Justiça Restaurativa - Círculos Menos Complexos (PORTARIA Nº 1791/2025/PGJ);

II - CONCEDER-LHES 0,5 (meia) diária, na forma da lei, para o custeio de alimentação;

III – DETERMINAR, dentro do prazo legal, a apresentação do relatório de prestação de contas de diárias, em conformidade com as exigências do Ato PGJ n.° 002/2011, de 06.01.2011, alterado pelo Ato PGJ n.º 067/2012, de 20.03.2012.

Publique-se, registre-se, cumpra-se.

SUBPROCURADORIA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus/AM, 29 de julho de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos

PORTARIA Nº 792/2025/SUBADM

O SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, por substituição legal, no uso de suas atribuições legais, e

CONSIDERANDO o teor do Procedimento Interno nº 2025.015730 – SEI;

CONSIDERANDO ainda o disposto no art. 4.º, II, do ATO PGJ N.º 002/2011, datado de 06.01.2011, que dispõe sobre o deslocamento dos membros e servidores do Ministério Público para fora da sede de exercício, estabelece normas para a concessão de passagens e diárias e dá outras providências,

RESOLVE:

I - CONSIDERAR AUTORIZADO o deslocamento do servidor LEANDRO TAVARES BEZERRA, Chefe do Setor de Patrimônio e Material, ao município de Iranduba/AM, em veículo oficial conduzido pelo servidor LEANDRO DE OLIVEIRA PORTELA, Agente de Apoio - Motorista/Segurança, no dia 21.07.2025, para recolher e transportar o restante dos aparelhos de ar condicionado das Promotorias de Justiça de Iranduba;

II - CONCEDER-LHES 0,5 (meia) diária, na forma da lei, para o custeio de alimentação;

III – DETERMINAR, dentro do prazo legal, a apresentação do relatório de prestação de contas de diárias, em conformidade com as exigências do Ato PGJ n.° 002/2011, de 06.01.2011, alterado pelo Ato PGJ n.º 067/2012, de 20.03.2012.

Publique-se, registre-se, cumpra-se.

SUBPROCURADORIA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus/AM, 29 de julho de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos

EXTRATO Nº 11.2025.CPL.1679331.2025.001317

EXTRATO DA ATA DE REGISTRO DE PREÇOS Nº 13.2025.CPL.1679330.2025.001317

PREGÃO ELETRÔNICO N.° 94.010/2025-CPL/MP/PGJ-SRP
PROCEDIMENTO INTERNO N.º 2025.001317

INTERESSADO: MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS.

Aos vinte e três dias do mês de julho do ano de dois mil e vinte e cinco, no Órgão Gerenciador, são registrados os preços da empresa abaixo mencionada, para formação de registro de preços para fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses, conforme as especificações mínimas e os quantitativos constantes do Edital do Pregão Eletrônico em epígrafe, descritos e qualificados na forma de seu Anexo. As

PROCURADORIA-GERAL DE JUSTIÇA

Procuradora-Geral de Justiça:
Leda Mara Nascimento Albuquerque
Subprocuradora-Geral de Justiça para Assuntos Jurídicos e Institucionais:
Anabel Vitória Pereira Mendonça de Souza
Subprocurador-Geral de Justiça para Assuntos Administrativos:
André Virgílio Belota Seffair
Corregedora-Geral do Ministério Público:
Silvana Nobre de Lima Cabral
Secretária-Geral do Ministério Público:
Wandete de Oliveira Netto

PROCURADORES DE JUSTIÇA

Câmaras Cíveis
Elvys de Paula Freitas
Sandra Cal Oliveira
Jussara Maria Pordeus e Silva
Mara Nóbia Albuquerque da Cunha
Suzete Maria dos Santos
Nilda Silva de Sousa
Delisa Olívia Vieiralves Ferreira
Jorge Michel Ayres Martins
Anabel Vitória Pereira Mendonça de Souza
Marco Aurélio Lisciotto

Câmaras Criminais
Carlos Lélio Lauria Ferreira
Marlene Franco da Silva
Mauro Roberto Veras Bezerra
Sarah Pirangy de Souza
Aguinelo Balbi Júnior
Liani Mônica Guedes de Freitas Rodrigues
Adelton Albuquerque Matos

Câmaras Reunidas
Karla Fregapani Leite
Públio Caio Bessa Cyrino
Sílvia Abdala Tuma
José Bernardo Ferreira Júnior
Neyde Regina Demósthenes Trindade
Silvana Nobre de Lima Cabral

CONSELHO SUPERIOR

Leda Mara Nascimento Albuquerque (Presidente)
Silvana Nobre de Lima Cabral
Mara Nóbia Albuquerque da Cunha
Adelton Albuquerque Matos
Elvys de Paula Freitas
Jorge Michel Ayres Martins
Nilda Silva de Sousa

OUVIDORIA
Sílvia Abdala Tuma

especificações constantes do respectivo Processo, assim como os termos das propostas de preços, integram o presente registro, independentemente de transcrição. O contrato, ou instrumento hábil que vier a substituí-lo, na forma do art. 95 da Lei n.° 14.133/21, indicará o(s) local(is) de entrega dos produtos/prestação do(s) serviço(s). O presente registro terá vigência de 12 (doze) meses, contados a partir de sua publicação no Portal Nacional de Compras Públicas - PNCP e no Diário Oficial Eletrônico do Ministério Público do Estado do Amazonas - DOMPE.

ATA DE REGISTRO DE PREÇO Nº 13.2025.CPL.1679330.2025.001317

E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.º 05.778.325/0005-47

ITEM 1 - COMPUTADOR TIPO 1 - “ALL IN ONE COM MONITOR AUXILIAR”.
Quantidade registrada: 1000 (um mil) unidades.
Marca/Modelo: LENOVO TC TINY-IN-ONE 23.8" TIO24 GEN 5.
Valor Unitário do Item: R$ 9.880,00 (nove mil oitocentos e oitenta reais).

ITEM 2 - COMPUTADOR TIPO 2 - “WORKSTATION COM MONITOR”.
Quantidade registrada: 50 (cinquenta) unidades.
Marca/Modelo: LENOVO THINKSTATION P3 TW.
Valor Unitário do Item: R$ 20.300,00 (vinte mil e trezentos reais).

ITEM 4 - COMPUTADOR TIPO 4 - "WORKSTATION MÓVEL".
Quantidade registrada: 20 (vinte) unidades
Marca/Modelo: THINKPAD P16v GEN 2 (INTEL).
Valor Unitário do Item: R$ 16.990,00 (dezesseis mil novecentos e noventa reais).

DA FISCALIZAÇÃO DA ATA DE REGISTRO DE PREÇOS

O Ordenador de Despesas delega competência aos servidores responsáveis pela DIRETORIA DE TECNOLOGIA DA INFORMAÇÃO E COMUNICAÇÃO - DTIC desta PROCURADORIA GERAL DE JUSTIÇA, para solicitar a aquisição do objeto ora registrado e fiscalizar a execução desta Ata de Registro de Preços.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos
Ordenador de Despesas

ATOS DO COLÉGIO DE PROCURADORES DE JUSTIÇA DO MINISTÉRIO PÚBLICO

PAUTA/CPJ

PAUTA DA REUNIÃO ORDINÁRIA ADMINISTRATIVA DO EGRÉGIO COLÉGIO DE PROCURADORES DE JUSTIÇA A SER REALIZADA PRESENCIALMENTE EM 31 DE JULHO DE 2025, ÀS 10 HORAS.

I – Abertura, conferência de quórum e instalação da sessão;

II – Leitura, discussão, aprovação e assinatura da Ata de sessão anterior;

III – Leitura de expediente e comunicações da Presidente;

IV – Leitura da ordem do dia:

V – Discussão e votação das matérias constantes da pauta:

ASSUNTOS PARA DISCUSSÃO:

1. Procedimento de Gestão Administrativa n.º 09.2023.00000855-6.
Assunto: Atualização da Lei Complementar n.º 011/1993.
Proponente: Procuradoria-Geral de Justiça.
Relatora: Exma. Sra. Dra. ANABEL VITÓRIA MENDONÇA DE SOUZA.

2. Procedimento de Gestão Administrativa n.º 09.2024.00000397-6.
Assunto: Atualização da Lei Complementar n.º 011/1993.
Proponente: Procuradoria-Geral de Justiça.
Sem Relatoria Designada.

VI – Apresentação, discussão de outras matérias;

VII – Comunicações dos membros;

VIII – Encerramento da sessão.

ATOS DA CORREGEDORIA-GERAL DO MINISTÉRIO PÚBLICO

EDITAL Nº 0056/2025/CGMP - CORREIÇÃO

A Excelentíssima Senhora Doutora Silvana Nobre de Lima Cabral, Corregedora-Geral do Ministério Público do Estado do Amazonas, no uso do que prescreve o art. o 125 da Lei Complementar Estadual 011/93 e o art. 34 e ss. do Regimento Interno da Corregedoria-Geral do Ministério Público (Resolução nº 006/2014 – CSMP) comunica a realização de CORREIÇÃO ORDINÁRIA na Promotoria de Justiça de Careiro da Várzea, no dia 8 de agosto de 2025, às 9h, a ser efetuada pelo Exmo. Sr. Corregedor-Auxiliar, Dr. Darlan Benevides de Queiroz, auxiliado pela Agente Técnico-Jurídico, Roberta Braga de Alencar, Ficam convocados a acompanhar a presente Correição, a Exma. Promotora de Justiça Dra. Tainá dos Santos Madela e demais auxiliares, que deverão estar disponíveis para comunicação na ocasião dos trabalhos correicionais. OUTROSSIM, DECLARO QUE SERÃO RECEBIDAS INFORMAÇÕES, RECLAMAÇÕES, SUGESTÕES OU NOTÍCIAS DE IRREGULARIDADES PERTINENTES AOS SERVIÇOS DA REFERIDA PROMOTORIA DE JUSTIÇA, devendo ser apresentadas através do e-mail cg@mpam.mp.br. E, para que chegue ao conhecimento de todos, manda expedir o presente Edital, que deverá ser publicado no Diário Oficial Eletrônico do Ministério Público (DOMPE). Dado e passado nesta cidade de Manaus/AM, em 29 de julho de 2025.

SILVANA NOBRE DE LIMA CABRAL
Corregedora-Geral do Ministério Público do Estado do Amazonas

ATOS DA PROMOTORIA DE JUSTIÇA

PORTARIA DE PROMOTORIA

PORTARIA Nº 0031/2025/01PRO_IRA
Nº SAJ MP: 06.2025.00000518-9

O MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS, pelo Excelentíssimo Promotor de Justiça GÉRSON DE CASTRO COELHO, Titular da 1ª Promotoria de Justiça de Iranduba, no exercício de suas funções institucionais, nos termos do art. 127, caput e do art. 129, inciso III, ambos da Constituição da República, do art. 4.º, inciso I, da Lei Complementar Estadual 011, de 17/12/1993, e no art. 1º e seguintes da Resolução nº 006/215-CSMP e

PROCURADORIA-GERAL DE JUSTIÇA
Procuradora-Geral de Justiça: Leda Mara Nascimento Albuquerque
Subprocuradora-Geral de Justiça para Assuntos Jurídicos e Institucionais: Anabel Vitória Pereira Mendonça de Souza
Subprocurador-Geral de Justiça para Assuntos Administrativos: André Virgílio Belota Seffair
Corregedora-Geral do Ministério Público: Silvana Nobre de Lima Cabral
Secretária-Geral do Ministério Público: Wandete de Oliveira Netto

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Aguinelo Balbi Júnior
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Câmaras Reunidas
Karla Fregapani Leite
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CONSELHO SUPERIOR
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Sílvia Abdala Tuma

Relatório Ata de Registro de Preços

Unidade Gerenciadora 925849 - PROCURADORIA GERAL DE JUSTIÇA

INFORMAÇÕES DA ATA

Ata:
nº 00013/2025

Última Atualização:
29/07/2025

Link da ata no PNCP:
https://pncp.gov.br/app/atas/04153748000185/2025/29/1

Vigência
de 29/07/2025 a 29/07/2026

Órgão:
ESTADO DO AMAZONAS

Unidade gerenciadora:
925849 - PROCURADORIA GE

Valor Contratado:
R$ 11.234.800,00

Fornecedor
05.778.325/0005-47 - E.R. SOLUCOES INFORMATICA LTDA

Objeto:
Fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.

INFORMAÇÕES DA COMPRA

Número da compra / Ano:
94010/2025

Modalidade da compra:
05 - Pregão

Data da assinatura:
28/07/2025

ITENS DA ATA

Número	Item	Aceita Adesão	Qtd. Limite Adesão	Qtd. Limite Informado na Compra	Código	Tipo	Qtd. Homologada
00001	MICROCOMPUTADOR ALL IN ONE, TELA ATÉ 21,5 POL, INTERATIVIDADE DA TELA SENSÍVEL AO TOQUE, MEMÓRIA RAM ATÉ 4 GB, NÚCLEOS POR PROCESSADOR ATÉ 4, ARMAZENAMENTO HDD ATÉ 500 GB, ARMAZENAMENTO SSD SEM DISCO SSD, FONTE ALIMENTAÇÃO BIVOLT AUTOMÁTICA, SISTEMA OPERACIONAL PROPRIETÁRIO, GARANTIA ON SITE 36 MESES	Sim	2000	2000	89409	Material	1.000,0000

Publicação PNCP_Ata de RP 13.2025 (1687549) SEI 2025.001317 / pg. 89

Número	Item	Aceita Adesão	Qtd. Limite Adesão	Qtd. Limite Informado na Compra	Código	Tipo	Qtd. Homologada
00002	MICROCOMPUTADOR, MEMÓRIA RAM 32 GB, NÚCLEOS POR PROCESSADOR SUPERIOR A 8, ARMAZENAMENTO HDD SEM DISCO HDD GB, ARMAZENAMENTO SSD ATÉ 2 TB, MONITOR SEM MONITOR POL, COMPONENTES ADICIONAIS COM TECLADO E MOUSE, SISTEMA OPERACIONAL PROPRIETÁRIO, GARANTIA ON SITE 36 MESES, GABINETE TORRE, OUTROS RECURSOS CONFORME EDITAL	Sim	100	100	331382	Material	50,0000
00004	NOTEBOOK, TELA SUPERIOR A 14 POL, INTERATIVIDADE DA TELA SEM INTERATIVIDADE, MEMÓRIA RAM SUPERIOR A 8 GB, NÚCLEOS POR PROCESSADOR 4 A 8, ARMAZENAMENTO HDD 480 A 1.000 GB, ARMAZENAMENTO SSD MINIMO DE 1 TB, BATERIA DEFINIDO PELO FABRICANTE, ALIMENTAÇÃO BIVOLT AUTOMÁTICA, SISTEMA OPERACIONAL PROPRIETÁRIO, GARANTIA ON SITE 36 MESES	Sim	40	40	329533	Material	20,0000

DETALHAMENTO DO ITEM 00001

Descrição detalhada:	MICROCOMPUTADOR ALL IN ONE, TELA ATÉ 21,5 POL, INTERATIVIDADE DA TELA SENSÍVEL AO TOQUE, MEMÓRIA RAM ATÉ 4 GB, NÚCLEOS POR PROCESSADOR ATÉ 4, ARMAZENAMENTO HDD ATÉ 500 GB, ARMAZENAMENTO SSD SEM DISCO SSD, FONTE ALIMENTAÇÃO BIVOLT AUTOMÁTICA, SISTEMA OPERACIONAL PROPRIETÁRIO, GARANTIA ON SITE 36 MESES
Código do item:	89409
Tipo do item:	Material
Quantidade homologada:	1.000,0000
Vigência inicial:	29/07/2025
Vigência final:	29/07/2026

FORNECEDOR(ES) ITEM 00001:

Classificação	CNPJ	Fornecedor	Qtd. total	Valor unitário
001	05.778.325/0005-47	E.R. SOLUCOES INFORMATICA LTDA	1.000,0000	9880.0000

UNIDADE(S) ITEM 00001

Código	Unidade	Tipo da unidade	Qtd. registrada	Qtd. disponível para remanejamento/empenho
925849	PROCURADORIA GE	Gerenciadora	1000.00000	1000.00000

ADESÕES(S) ITEM 00001

Qtd. máxima para adesão	2000.00000
Qtd. disponivel para adesão:	2000.00000
Quantidade aguardando análise:	0
Aceita adesão	Sim

DETALHAMENTO DO ITEM 00002

Descrição detalhada:	MICROCOMPUTADOR, MEMÓRIA RAM 32 GB, NÚCLEOS POR PROCESSADOR SUPERIOR A 8, ARMAZENAMENTO HDD SEM DISCO HDD GB, ARMAZENAMENTO SSD ATÉ 2 TB, MONITOR SEM MONITOR POL, COMPONENTES ADICIONAIS COM TECLADO E MOUSE, SISTEMA OPERACIONAL PROPRIETÁRIO, GARANTIA ON SITE 36 MESES, GABINETE TORRE, OUTROS RECURSOS CONFORME EDITAL
Código do item:	331382
Tipo do item:	Material
Quantidade homologada:	50,0000
Vigência inicial:	29/07/2025
Vigência final:	29/07/2026

FORNECEDOR(ES) ITEM 00002:

Classificação	CNPJ	Fornecedor	Qtd. total	Valor unitário
001	05.778.325/0005-47	E.R. SOLUCOES INFORMATICA LTDA	50,0000	20300.0000

UNIDADE(S) ITEM 00002

Código	Unidade	Tipo da unidade	Qtd. registrada	Qtd. disponível para remanejamento/empenho
925849	PROCURADORIA GE	Gerenciadora	50.00000	50.00000

ADESÕES(S) ITEM 00002

Qtd. máxima para adesão	100.00000
Qtd. disponivel para adesão:	100.00000
Quantidade aguardando análise:	0
Aceita adesão	Sim

DETALHAMENTO DO ITEM 00004

Descrição detalhada:	NOTEBOOK, TELA SUPERIOR A 14 POL, INTERATIVIDADE DA TELA SEM INTERATIVIDADE, MEMÓRIA RAM SUPERIOR A 8 GB, NÚCLEOS POR PROCESSADOR 4 A 8, ARMAZENAMENTO HDD 480 A 1.000 GB, ARMAZENAMENTO SSD MINIMO DE 1 TB, BATERIA DEFINIDO PELO FABRICANTE, ALIMENTAÇÃO BIVOLT AUTOMÁTICA, SISTEMA OPERACIONAL PROPRIETÁRIO, GARANTIA ON SITE 36 MESES
Código do item:	329533
Tipo do item:	Material
Quantidade homologada:	20,0000
Vigência inicial:	29/07/2025
Vigência final:	29/07/2026

FORNECEDOR(ES) ITEM 00004:

Classificação	CNPJ	Fornecedor	Qtd. total	Valor unitário
001	05.778.325/0005-47	E.R. SOLUCOES INFORMATICA LTDA	20,0000	16990.0000

UNIDADE(S) ITEM 00004

Código	Unidade	Tipo da unidade	Qtd. registrada	Qtd. disponível para remanejamento/empenho
925849	PROCURADORIA GE	Gerenciadora	20.00000	20.00000

ADESÕES(S) ITEM 00004

Qtd. máxima para adesão	40.00000
Qtd. disponivel para adesão:	40.00000
Quantidade aguardando análise:	0
Aceita adesão	Sim

Torino Informática Ltda.
CNPJ 03.619.767/0005-15
I.E. 083.327.90-8
tanabe@grupotorino.com.br

Serra, 17 de Julho de 2025

À
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS

EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP
ABERTURA: 29/06/2025 ÀS 10H00MIN.

PROPOSTA DE PREÇO

PREZADOS SENHORES:

TENDO EXAMINADO MINUCIOSAMENTE AS NORMAS ESPECÍFICAS DO PROCESSO LICITATÓRIO ACIMA TENDO COMO OBJETO A *AQUISIÇÃO DE EQUIPAMENTOS DE INFORMATICA* E APÓS TERMOS TOMADO CONHECIMENTO DE TODAS AS CONDIÇÕES LÁ ESTABELECIDAS, PASSAMOS A FORMULAR A SEGUINTE PROPOSTA:

1. PROPOSMOS FORNECER, SOB NOSSA INTEGRAL RESPONSABILIDADE, OS EQUIPAMENTOS, OBJETO DO REFERIDO CERTAME, CONFORME A TABELA ABAIXO:

ITEM	ESPECIFICAÇÃO	QUANT	MARCA	VALOR UNITÁRIO	VALOR TOTAL
Lote 03	COMPUTADOR TIPO 3 - "NOTEBOOK DE 14" **NOTEBOOK HP 640 G11** PROC INTEL ULTRA 5 135U - VPRO MEMÓRIA 16GB(2X8) DDR5 5600 HD SSD 256GB NVME WEBCAM 5MP WIFI6 + BT AX211 TELA 14 FHD BATERIA 56WHR WINDOWS 11 PROFESSIONAL SOFTWARE ABSOLUTE GARANTIA 5 ANOS ACOMPANHA: MOUSE USB 1000 DPI HP E MOCHILA PARA NOTEBOOK.	300	HP 640 G11	**R$ 8.250,00** (OITO MIL E DUZENTOS E CINQUENTA REAIS)	**R$ 2.475.000,00** (DOIS MILHOES E QUATROCENTOS E SETENTA E CINCO MIL REAIS)
				TOTAL DA PROPOSTA	**R$ 2.475.000,00** (DOIS MILHOES E QUATROCENTOS E SETENTA E CINCO MIL REAIS)

2. ***O VALOR TOTAL DA PROPOSTA É R$ 2.475.000,00 (DOIS MILHOES E QUATROCENTOS E SETENTA E CINCO MIL REAIS)***
3. NOS PREÇOS INDICADOS ACIMA ESTÃO INCLUÍDOS, ALÉM DO FORNECIMENTO DO PRODUTO, TODOS OS DEMAIS CUSTOS COM SALÁRIOS, BENEFÍCIOS, ENCARGOS, TRIBUTOS, FRETE, GARANTIA E DEMAIS CONTRIBUIÇÕES PERTINENTES.

4. DECLARAMOS QUE CONHECEMOS A LEGISLAÇÃO DE REGÊNCIA DESTA LICITAÇÃO E QUE OS SERVIÇOS SERÃO PRESTADOS DE ACORDO COM AS CONDIÇÕES ESTABELECIDAS NESTE EDITAL, O QUE CONHECEMOS E ACEITAMOS EM TODOS OS SEUS TERMOS, INCLUSIVE QUANTO AO PAGAMENTO E OUTROS.
5. DECLARAMOS, TAMBÉM, QUE NENHUM DIREITO A INDENIZAÇÃO OU REEMBOLSO DE QUAISQUER DESPESAS NOS SERÁ DEVIDO, CASO A NOSSA PROPOSTA NÃO SEJA ACEITA PELA **MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS** SEJA QUAL FOR O MOTIVO.
6. A PRESENTE PROPOSTA É VALIDA POR **90 (NOVENTA) DIAS**, A CONTAR DA DATA ESTABELECIDA PARA A SUA ABERTURA.
7. OS PAGAMENTOS SERÃO REALIZADOS EM ATÉ **20 (VINTE)** DIAS E CREDITADOS A **CONTA CORRENTE Nº 7105-6**, **AGÊNCIA Nº 2414-7** NO **BANCO DO BRASIL S/A, CÓDIGO 001.**
8. O PROCURADO DA EMPRESA, CUJO CNPJ É 03.619.767/0005-15, QUE ASSINARÁ A ATA DE REGISTRO DE PREÇO OU CONTRATO, É O **SR. RODRIGO DO AMARAL RISSIO** PORTADOR DO **CPF 220.807.218-95** E **RG 27.954.969-6 SSP/SP;**
9. GARANTIA: **60 (SESSENTA) MESES** ONSITE PARA O EQUIPAMENTO**,** CONFORME EDITAL;
10. VALORES EXPRESSOS EM REAIS
11. PRAZO DE ENTREGA: CONFORME EDITAL ATÉ **90 (NOVENTA) DIAS,** APÓS A DATA DE ASSINATURA DO CONTRATO E/OU RECEBIMENTO DO EMPENHO;
12. ENVIO DO MATERIAL VIA TERRESTRE/RODOVIÁRIO;
13.

DADOS DOS SOCIOS:

RODRIGO DO AMARAL RISSIO
RG 27.954.969-6 SSP/SP
CPF 220.807.218-95
DENISE DO AMARAL RISSIO
RG 6.438.259 SSP/SP
CPF 246.137.578-00

DADOS DA LICITANTE / CONTRATAÇÃO:

TORINO INFORMATICA LTDA
CNPJ 03.619.767/0005-15
IE: 083.327.90-8
IM: 4675890
AV. 600, SN – QUADRA 15 – MODULO 10 – SETOR INDUSTRIAL – TIMS
SERRA – ES – CEP 29.161-419

DADOS PARA CONTATO / INFORMAÇÕES:

TORINO INFORMATICA LTDA
CNPJ: 03.619.767/0001-91
IE: 669.369.347-110
IM: 114.058
RUA RITA DE CARVALHO MONTEIRO, 120 – RETIRO SÃO JOÃO
SOROCABA – SP – CEP 18085-750
CONTATO: MARCELLO TANABE
TEL/FAX: (15) 3238-9520 OU 99148-9313
EMAIL: tanabe@grupotorino.com.br

DATASHEET EQUIPAMENTO / DRIVERS:

https://support.hp.com/br-pt/drivers/hp-elitebook-640-14-inch-g11-notebook-pc/2102139861
https://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c08915793

DADOS PARA SUPORTE TÉCNICO:

https://chamados.grupotorino.com.br
suporte@grupotorino.com.br
0800-201-5666



TORINO INFORMÁTICA LTDA
CNPJ: 03.619.767/0005-15
RODRIGO DO AMARAL RISSIO
RG: 27.954.969-6 SSP/SP
CPF: 220.807.218-95

DECLARAÇÕES

Ref: EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP

Declaro para os devidos fins junto à Comissão Permanente de Licitação que:

a) cumpro plenamente os requisitos de habilitação e estou ciente de que respondo pela veracidade das informações prestadas, na forma da lei;

b) em atenção ao item 5.6. do Edital e ao Art. 14, e incisos, da Lei n.º 14.133/2021, não estou impedido de participar direta ou indiretamente desta licitação, e ainda, que não possuo sócios, diretores ou gerentes, que sejam cônjuge, companheiro ou parente em linha reta, colateral ou por afinidade, até o terceiro grau, inclusive, de membros ou de servidores ocupantes de cargo de direção, chefia ou assessoramento no âmbito do Ministério Público do Estado do Amazonas e de sua CPL;

c) recebi o edital e todos os documentos que o integram, dispondo de todos os elementos e informações necessários à elaboração da proposta de preços com total e completo conhecimento do objeto da licitação;

d) os documentos e declarações apresentados são fiéis e verdadeiros;

e) caso seja vencedor do certame e não cadastrado no SISTEMA DE ADMINISTRAÇÃO FINANCEIRA E CONTABILIDADE da SECRETARIA DA FAZENDA DO ESTADO DO AMAZONAS – SEFAZ-AM, encaminharei à CONTRATANTE os documentos necessários para efetuar o referido cadastramento no prazo de 05 (cinco) dias úteis, a contar da adjudicação, sob pena de perder o direito de preferência à contratação em favor dos demais licitantes subsequentes, sem prejuízo da possibilidade de responder a procedimento administrativo de responsabilização (PAR) por eventual retardamento da licitação;

f) o preço inclui, além do lucro, todos os custos e despesas, com tributos incidentes e encargos devidos, materiais, serviços, transporte, a integralidade dos custos para atendimento dos direitos trabalhistas assegurados na Constituição Federal, nas leis trabalhistas, nas normas infralegais, nas convenções coletivas de trabalho e nos termos de ajustamento de conduta vigentes na data de entrega das propostas, bem como quaisquer outras despesas diretas e indiretas incidentes na prestação de serviços;

g) a proposta apresentada para participar do presente Pregão foi elaborada de maneira independente por esta licitante e o seu conteúdo não foi, no todo ou em parte, direta ou indiretamente, informado, discutido ou recebido de qualquer outro participante potencial ou de fato, por qualquer meio ou por qualquer pessoa.

Sorocaba, 30 de junho de 2025.

_____

Torino Informática Ltda- CNPJ: 03.619.767/0005-15
Rodrigo do Amaral Rissio- Socio Procurador

Observação: A apresentação da proposta implicará a plena aceitação, por parte do licitante, das condições estabelecidas neste edital e seus anexos, bem como, todas as especificações do objeto contidas na proposta vinculam a fornecedora.

DECLARAÇÃO DE CUMPRIMENTO AO ARTIGO 7º, INCISO XXXIII

Ref: EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP

A empresa Torino Informática LTDA., inscrita no CNPJ sob o nº 03.619.767/0005-15, estabelecida na Rua AV 600 S/N QUADRA 15– MODULO 10 –na SERRA/ES , DECLARA para os fins de direito, na qualidade de licitante que em cumprimento ao inciso XXXIII, do artigo 7º. da Constituição Federal de que não possuímos em nosso quadro funcional pessoas menores de 18 (dezoito) anos em trabalho noturno, perigoso ou insalubre e, de menores de 16 (dezesseis) anos em qualquer trabalho, salvo na condição de aprendiz, a partir dos 14 (quatorze) anos.

Por ser expressão de verdade, firmamos o presente

.

Sorocaba, 30 de Junho de 2025.

_____

Torino Informática Ltda- CNPJ: 03.619.767/0005-15
Rodrigo do Amaral Rissio- Socio Procurador

DECLARAÇÕES COMPLEMENTARES

Ref: EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP

Declaro para os devidos fins junto à Comissão Permanente de Licitação que:

a) cumpro plenamente os requisitos de habilitação e estou ciente de que respondo pela veracidade das informações prestadas, na forma da lei;

b) em atenção ao item 5.6. do Edital e ao Art. 14, e incisos, da Lei n.º 14.133/2021, não estou impedido de participar direta ou indiretamente desta licitação, e ainda, que não possuo sócios, diretores ou gerentes, que sejam cônjuge, companheiro ou parente em linha reta, colateral ou porafinidade, até o terceiro grau, inclusive, de membros ou de servidores ocupantes de cargo de direção, chefia ou assessoramento no âmbito do Ministério Público do Estado do Amazonas e de sua CPL;

c) recebi o edital e todos os documentos que o integram, dispondo de todos os elementos e informações necessários à elaboração da proposta de preços com total e completo conhecimento do objeto da licitação;

d) os documentos e declarações apresentados são fiéis e verdadeiros;

e) caso seja vencedor do certame e não cadastrado no SISTEMA DE ADMINISTRAÇÃO FINANCEIRA E CONTABILIDADE da SECRETARIA DA FAZENDA DO ESTADO DO AMAZONAS – SEFAZ-AM, encaminharei à CONTRATANTE os documentos necessários para efetuar o referido cadastramento no prazo de 05 (cinco) dias úteis, a contar da adjudicação, sob pena de perder o direito de preferência à contratação em favor dos demais licitantes subsequentes, sem prejuízo da possibilidade de responder a procedimento administrativo de responsabilização (PAR) por eventual retardamento da licitação;

f) o preço inclui, além do lucro, todos os custos e despesas, com tributos incidentes e encargos devidos, materiais, serviços, transporte, a integralidade dos custos para atendimento dos direitos trabalhistas assegurados na Constituição Federal, nas leis trabalhistas, nas normas infralegais, nas convenções coletivas de trabalho e nos termos de ajustamento de conduta vigentes na data de entrega das propostas, bem como quaisquer outras despesas diretas e indiretas incidentes na prestação de serviços;

g) a proposta apresentada para participar do presente Pregão foi elaborada de maneira independente por esta licitante e o seu conteúdo não foi, no todo ou em parte, direta ou indiretamente, informado, discutido ou recebido de qualquer outro participante potencial ou de fato, por qualquer meio ou por qualquer pessoa.

Sorocaba, 30 de junho de 2025.

Torino Informática Ltda- CNPJ: 03.619.767/0005-15
Rodrigo do Amaral Rissio- Socio Procurador

Overview

HP EliteBook 640 14 inch G11 Notebook PC



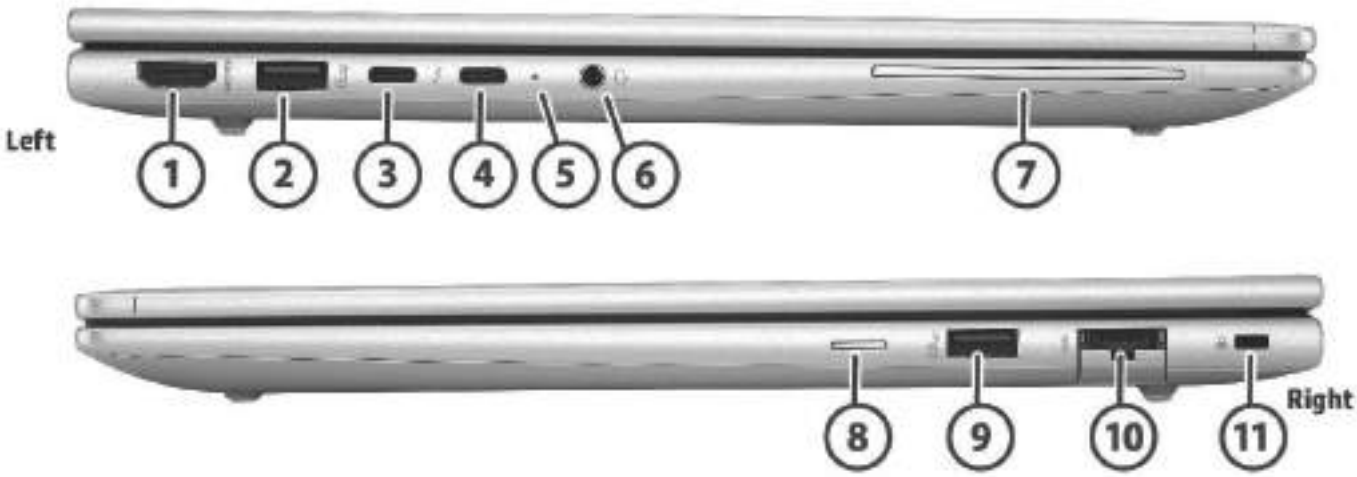
Front

1. Internal Microphone (2)
2. Webcam LED
3. Webcam
4. Camera Shutter
5. Touchpad
6. Near-field communication (NFC) *

* Select product only.

Proposta de Preço ITEM 3 - SAMSUNG INFORMATICA LTDA (1679359) - SEI 2025.001317 / pg. 103

Overview



Sides

1. HDMI 2.1
2. Super Speed USB Type-A 5Gbps signaling rate Power charging
3. Thunderbolt™ 4 with USB Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™2.1)
4. Thunderbolt™ 4 with USB Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™2.1)
5. Power Indicator LED
6. Headphone/mic combo jack
7. Smart Card Reader (Optional)
8. Nano SIM card slot (Optional)
9. Super Speed USB Type-A 5Gbps signaling rate Data only
10. RJ45 Ethernet port
11. Security lock slot (Integrated)

1. SuperSpeed USB 20Gbps is not available with Thunderbolt™ 4.

Proposta de Preço ITEM 3 - SAMSUNG MMSM7TCM1TBW/AZ (1879358) - SEI 2025.001317 / pg. 104

Technical Specifications

PRODUCT NAME

HP EliteBook 640 14 inch G11 Notebook PC

OPERATING SYSTEMS

Preinstalled

Windows 11 Home - HP recommends Windows 11 Pro for business [1]
Windows 11 Home Single Language - HP recommends Windows 11 Pro for business [1]
Windows 11 Pro [1]
Windows 11 Pro Education [1]
Windows 11 Pro (Windows 11 Enterprise or Windows 10 Enterprise available with a Volume Licensing Agreement) [1]
FreeDOS

1. Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.

PROCESSORS

Processor [2,3,4,5,6,7]	Cores	Number of P-cores	Number of E-cores	Number of LP E-core	Threads	L3 Cache	Max Turbo Frequency [4]		Intel SIPP/ vPro® Enterprise	Intel vPro® Essentials
							P-cores	E-cores		
Intel® Core™ Ultra 7 processor 165U	12 cores	2	8	2	14	12 MB	4.90 GHz	3.80 GHz	X	
Intel® Core™ Ultra 7 processor 155U	12 cores	2	8	2	14	12 MB	4.80 GHz	3.80 GHz		
Intel® Core™ Ultra 5 processor 135U	12 cores	2	8	2	14	12 MB	4.40 Ghz	3.60 GHz	X	
Intel® Core™ Ultra 5 processor 125U	12 cores	2	8	2	14	12 MB	4.30 Ghz	3.60 GHz		X
Intel® Core™ Ultra 7 processor 165H	16 cores	6	8	2	22	24 MB	5.00 GHz	3.80 GHz	X	
Intel® Core™ Ultra 7 processor 155H	16 cores	6	8	2	22	24 MB	4.80 GHz	3.80 GHz		
Intel® Core™ Ultra 5 processor 135H	14 cores	4	8	2	18	18 MB	4.60 Ghz	3.60 GHz	X	
Intel® Core™ Ultra 5 processor 125H	14 cores	4	8	2	18	18 MB	4.50 Ghz	3.60 GHz		

Processor Family
Intel® Core™ Ultra7 processor
Intel® Core™ Ultra5 processor

Proposta de Preço ITEM 3 - SAMSUNG MICROSOFT CERTIFIED (2879358) - SEI 2025.001317 / pg. 105

Technical Specifications

2. Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
3. Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.
4. Intel® Turbo Boost performance varies depending on hardware, software and overall system configuration. See www.intel.com/technology/turboboost for more information.
5.In accordance with Microsoft's support policy, HP does not support the Windows 8 or Windows 7 operating system on products configured with Intel and AMD 7th generation and forward processors or provide any Windows 8 or Windows 7 drivers on http://www.support.hp.com
6. Intel vPro® requires Windows 10 Pro 64 bit or higher, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or Wi-Fi 6E WLAN and TPM 2.0. Some functionality requires additional 3rd party software in order to run. Features of vPro® Essentials and Enterprise vary. See http://intel.com/vpro
7. Features and software that require a NPU may require software purchase, subscription or enablement by a software or platform provider, and third party software may have specific configuration or compatibility requirements. Performance varies by use, configuration, and other factors.

GRAPHICS

Integrated
Intel® ARC Graphics [8]
Intel® Graphics

Discrete
GeForce RTX 2050 (US only)

Supports
UMA: Support HDMI 2.1 [9]

Hardware acceleration for CODEC H.265/HEVC (High Efficiency Video Coding) is disabled on this platform.

8. Intel® ARC™ graphics only available on select Intel® Core™Ultra H-series processor-powered systems with at least 16GB of system memory in dual channel configuration.
9. HDMI cable sold separately.

DISPLAY

Non-Touch
35.6 cm (14") diagonal, WUXGA (1920 x 1200), Bent, LCD, UWVA, anti-glare, WLED, 300 nits, NTSC 45% [10,11]
35.6 cm (14") diagonal, WUXGA (1920 x 1200), Bent, LCD, UWVA, anti-glare, WLED + Low Blue Light, 400 nits, low power, sRGB 100% [10,11]
35.6 cm (14") diagonal, WUXGA (1920 x 1200), Bent, LCD, UWVA, anti-glare, WLED + Low Blue Light, 1000 nits, sRGB 100%, HP Sure View reflect integrated privacy screen [10,11,12,13]

Touch
35.6 cm (14") diagonal, WUXGA (1920 x 1200), Bent, LCD, touch, UWVA, anti-glare, LED, 300 nits, NTSC 45% [10,11,13]

Proposta de Preço ITEM 3 - SUPRIMENTOS DE IMPRESSÃO (1879359) - SEI 2025.001317 / pg. 106

Technical Specifications

Display Size (Diagonal)
35.6 cm (14.0")
Screen to Body Ratio
88.80%

Aspect Ratio
16.10

Max Hinge Open Angle
177±3°

10. Sold separately or as an optional feature.
11. Resolutions are dependent upon monitor capability, and resolution and color depth settings.
12. HP Sure View Reflect integrated privacy screen is an optional feature that must be configured at purchase and is designed to function in landscape orientation.
13. Actual brightness will be lower with touchscreen or Sure View.

DOCKING (Sold Separately)

Docking station model #1	HP USB-C Dock G5
Docking station model #2	HP Thunderbolt™ 120W G4 Dock
Docking station model #3	HP USB-C G5 Essential Dock
Docking station model #4	HP USB-C/A G2 Universal Dock

For additional aftermarket options and docking specs please see page .37.

Proposta de Preço ITEM 3 - SAMSUNG MICROSOFT TECH LTDA (2879358) - SEI 2025.001317 / pg. 107

Technical Specifications

STORAGE AND DRIVES

Primary Storage
2 TB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell [14]
1 TB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell [14]
1 TB PCIe® Gen4x4 NVMe™ Self Encrypted OPAL2 Three Layer Cell [14]
512 GB PCIe® Gen4x4 NVMe™ Self Encrypted OPAL2 SSD Three Layer Cell [14]
512 GB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell [14]
512 GB PCIe® NVMe™ SSD Value [14]
256 GB PCIe® NVMe™ Self Encrypted OPAL2 SSD Value [14]
256 GB PCIe® NVMe™ SSD Value [14]

14. For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30GB of disk is reserved for system recovery software.

MEMORY

Maximum Memory
64GB DDR5-5600 MT/s (2 x 32 GB) RAM [15]

Memory
64GB DDR5-5600 (2 x 32 GB) MT/s RAM [15]
32GB DDR5-5600 (2 x 16 GB) MT/s RAM [15]
32GB DDR5-5600 (1 x 32 GB) MT/s RAM [15]
16GB DDR5-5600 (2 x 8 GB) MT/s RAM [15]
16GB DDR5-5600 (1 x 16 GB) MT/s RAM [15]
8GB DDR5-5600 (1 x 8 GB) MT/s RAM[15]

Memory Slots
2 SODIMM
System runs at 5600 MT/s
Supports Dual Channel Memory[15]

15. Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed.

Proposta de Preço ITEM 3 - PREGÃO ELETRÔNICO Nº 2025.001317 / pg. 108

Technical Specifications

NETWORKING/COMMUNICATIONS

Ethernet
Intel® I219-LM GbE, vPro® [16]
Intel® I219-V GbE, non-vPro® [16]

WLAN
Intel® AX211 Wi-Fi 6E Bluetooth® 5.3 wireless card vPro WLAN [17]
Intel® AX211 Wi-Fi 6E Bluetooth® 5.3 wireless card WLAN [17]

WWAN
HP 4G LTE-A Pro Cat16 WWAN eSIM [18]

LPWAN
Qualcomm® 9205 LTE-M (CAT-M1 fSVC) [19]

NFC
NFC Mirage WNC XRAV-1

Miracast
Native Miracast Support [20]

16. The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.
17. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported.
18. WWAN module is an optional feature, requires factory configuration and requires separately purchased service contract. Check with service provider for coverage and availability in your area. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products, in all regions.
19. Cat M1 LPWAN (Mobile Narrowband) cards support select platforms with the HP Protect & Trace with Wolf Connect service, but do not support mobile broadband/Internet use.
20. Miracast is a wireless technology your PC can use to project your screen to TVs, projectors, and streaming.

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Technical Specifications

AUDIO/MULTIMEDIA

Audio
Audio by Poly Studio
2 Integrated stereo speakers
2 Integrated dual array microphones

Speaker Power
2W/4ohm per speaker

Camera
5MP+Infrared camera [21]
FHD camera [21]

Sensors
Ambient Light Sensor[22]
Hall Effect Sensor
Thermal Sensor
HP Tamper Lock

21. Sold separately or as an optional feature.
22.Select product only (Privacy panel SKU).

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard
HP Standard Keyboard, spill-resistant, backlit, Durakey keyboard. [23]
HP Standard Keyboard, spill-resistant, Privacy, backlit, Durakey keyboard. [23]
HP Standard Keyboard, spill-resistant keyboard.

Pointing Device
Clickpad with multi-touch gesture support
Microsoft Precision Touchpad Default Gestures Support

Function Keys
ESC: System Information
F1 - Display Switching
F2 - Blank or SureView On/Off
F3 - Brightness Down
F4 - Brightness Up
F5 - Blank or Backlit Toggle
F6 - Audio Mute
F7 - Volume Down
F8 - Volume Up
F9 - Mic Mute
F10 - Play and Pause
F11 - HPX key
F12 - Home key
Power Button (with LED)

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Technical Specifications

Insert
Delete
End
Microsoft Copilot [24]

Hidden Function Keys
Fn+R - Break, Fn+S - Sys Rq, Fn+C - Scroll Lock

23. Backlit keyboard is an optional feature.
24. Requires Windows 11 and an NPU. Timing of feature delivery and availability varies by market and device. Requires Microsoft account to log in. Where Copilot in Windows is not available, the Copilot key will lead to the Bing search engine. See http://aka.ms/WindowsAIFeatures

SOFTWARE AND SECURITY

Software
Adobe Offer [25]
Bing Search for IE11
Buy Microsoft Office (Sold separately)
HP Connection Optimizer
HP Hotkey Support
HP Mac Address Manager
HP Notifications
HP PC Hardware Diagnostics UEFI
HP PC Hardware Diagnostics Windows
HP Power Manager with Battery Health Manager[26]
HP Privacy Settings
HP Services Scan [27]
HP Smart Support [28]
HP Support Assistant [29]
HSA Fusion for Commercial
HSA Telemetry for Commercial
Miro Offer [30]
myHP[31]
Poly Lens[32]

Manageability Features
HP Client Catalog (download) [33]
HP Client Management Script Library (download) [34]
HP Cloud Recovery [35]
HP Connect for Microsoft Endpoint Manager [36]
HP Driver Packs (download) [37]
HP Image Assistant (download) [38]
HP Manageability Integration Kit (download) [39]
HP Patch Assistant (download) [40]

Security Features
Secured-Core PC Enable [41]

Proposta de Preço ITEM 3 - SUPRIMENTOS DE INFORMÁTICA (1879358) - SEI 2025.001317 / pg. 111

Technical Specifications

Windows Hello Enhanced Sign-In Security (ESS)

HP Wolf Security for Business which includes:[42]
HP Sure Admin [43]
HP Sure Click [44]
HP Sure Recover [45]
HP Sure Run [46]
HP Sure Sense
HP Sure Start [47]
HP Tamper Lock

Security TPM
Model: STM ST33KTPM2X32CKE2
TCG TPM 2.0
Version: 1.769
FIPS 140-2 Compliant: Yes

Model: Nuvoton NPCT760HABYX
TCG TPM 2.0
Version: 7.2.3.1
FIPS 140-2 Compliant: Yes

BIOS
Absolute Persistence Module [48]
BIOS Update via Network
HP BIOSphere Gen6 [49]
HP DriveLock & Automatic DriveLock
HP Fingerprint Sensor [50]
HP Secure Erase [51]
HP Wake on WLAN

Smartcard Reader
Model number: Alcor AK9563
FIPS 201 Compliant: Yes

IPv6 Support
Yes

FirstNet Certified

Does the BIOS implement the ISO/IEC 19678:2015 (formerly NIST 800-147) guidelines?: Yes
UEFI version: 2.7B
Class: 3

25. Click on Adobe icon in the start menu to take advantage of a 30 day trial membership of select Adobe software. The software is tied to the device and is not transferrable. You may also choose to enter your payment details to auto-renew and continue to use the software beyond the 30 day trial. See Adobe for complete details.
26. HP Power Manager requires Windows 10 and higher and can be downloaded from the Microsoft Store. Depending on what version of HP Battery Health Manager (BHM) is available for your device, HP BHM may look at a number of factors to determine how to adjust battery charging over time to optimize battery health. HP BHM is preset to “Let HP Manage my Battery Charging” to allow the system to balance charging between battery health and battery duration. As Let HP Manage My Battery Charging

Proposta de Preço ITEM 3 - SUPRIMENTOS MATERIAL PERMANENTE (2879358) - SEI 2025.001317 / pg. 112

Technical Specifications

adjusts charge capacity, the amount of run-time on battery will be reduced over time. HP may utilize BIOS updates to adjust BHM settings on select systems to optimize battery health and reduce exposure to those factors that can accelerate battery degradation. To update or change HP BHM settings and for complete details, see https://support.hp.com/us-en/document/ish_4449597-3519507-16

27. HP Services Scan is preinstalled and/or provided thru Windows Update and checks for service entitlement on each hardware device and downloads the applicable software agent automatically. To disable this feature, please follow the instructions at http://www.hpdaas.com/requirements. The HP Insights agent is a telemetry and analytics platform that provides critical data around devices and applications and is not sold as a standalone service. HP follows stringent GDPR privacy regulations and is ISO27001, ISO27701, ISO27017 and SOC2 Type2 certified for Information Security. Internet access with connection to the HP Insights agent is required. For full system requirements, please visit http://www.hpdaas.com/requirements. Not available in China.
28. HP Smart Support requires the HP agent to be installed. For more information about how to enable or to download HP Smart Support, please visit http://www.hp.com/smart-support. HP Services Scan is provided thru Windows Update and will check entitlement on each hardware device to determine if an HP agent-enabled service has been purchased, and will download applicable software automatically. The HP agent is a telemetry and analytics platform that provides critical data around devices and applications and is not sold as a standalone service. HP follows stringent GDPR privacy regulations and is ISO27001, ISO27701, ISO27017 and SOC2 Type2 certified for Information Security. Internet access is required. For full system requirements or to disable this feature, please visit http://www.hpdaas.com/requirements.
29. HP Support Assistant is available on Windows. For more information, please visit www.support.hp.com/help/hp-support-assistant
30. HP customers qualify for a 90 day trail of Miro, this offer ends September 2025. Complete terms and conditions are provided by Miro when accepting the offer.
31. MyHP Requires Windows 10 or higher OS.
32. Poly Lens Desktop requires a Windows OS
33. HP Client Catalog can be downloaded from https://www.hp.com/us-en/solutions/client-management-solutions.html
34. HP Client Management Script Library can be downloaded from https://www.hp.com/us-en/solutions/client-management-solutions.html#tab=manageability-tools
35. HP Cloud Recovery is available for Z by HP, HP Elite and Pro desktops and laptops PCs with Intel® or AMD processors and requires an open, network connection. **NOTE:** You must back up important files, data, photos, videos, etc. before use to avoid loss of data. Detail please refer to: https://support.hp.com/us-en/computer.
36. HP Connect for Microsoft Endpoint Manager is available from the Azure Market Place for HP Pro, Elite, Z and Point-of-Sale PCs managed with Microsoft Endpoint Manager. Subscription to Microsoft Endpoint Manager required and sold separately. Network connection required.
37. HP Driver Packs can be downloaded from https://www.hp.com/us-en/solutions/client-management-solutions/drivers-pack.html
38. HP Image Assistant can be downloaded from https://ftp.ext.hp.com/pub/caps-softpaq/cmit/HPIA.html
49. HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html.
40. HP Patch Assistant available on select HP PCs with the HP Manageability Kit that are managed through Microsoft System Center Configuration Manager. HP Manageability Integration Kit can be downloaded from http://www8.hp.com/us/en/ads/clientmanagement/overview.html.
41. Secured-Core PC Enable requires an Intel® vPro®, AMD Ryzen™ Pro processor or Qualcomm® processor with SD850 or higher and requires 8 GB or more system memory. Secured-core PC is enabled from the factory.
42. HP Wolf Security for Business requires Windows 10 or 11 Pro or higher, includes various HP security features and is available on HP Pro, Elite, RPOS and Workstation products. See product details for included security features.
43. HP Sure Admin requires HP G8 or newer platforms, Windows 10 or higher, HP BIOS, HP Manageability Kit or KMS Service from http://www.hp.com/go/clientmanagement and HP Sure Admin Local Access Authenticator smartphone app from the Android or Apple store
44. HP Sure Click requires Windows 10 or 11 Pro or higher. See https://bit.ly/2PrLT6A_SureClick for complete details.
45. HP Sure Recover is available on select HP PCs and requires Windows 10 or Windows 11 and an open network connection.

Proposta de Preço ITEM 3 - SVSNOMINSUMMTECH LTDA (2879359) - SEI 2025.001317 / pg. 113

Technical Specifications

You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data. Network based recovery using Wi-Fi is only available on select PCs.

46. HP Sure Run is available on select HP PCs and requires Windows 10 and higher.
47. HP Sure Start is available on select HP PCs and requires Windows 10 and higher
48. Absolute firmware module is shipped turned off and can only be activated with the purchase a license subscription and full activation of the software agent. License subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. Certain conditions apply. For full details visit: https://www.absolute.com/about/legal/agreements/absolute/
49. HP BIOSphere Gen6 features may vary depending on the platform and configuration.
50. HP Fingerprint Reader is an optional feature that requires Windows 10 or 11 and must be configured at purchase.
51. HP Secure Erase implements the methods outlined in the National Institute of Standards and Technology Special Publication 800-88r "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.

Proposta de Preço ITEM 3 - PREGÃO ELETRÔNICO Nº 2025.001317 / pg. 114

Technical Specifications

POWER

Power Supply
HP Standard 65W USB Type-C® adapter [52]
HP Standard 65W USB Type-C® Halogen Free adapter [52]

Battery
HP Long Life 3 cell 56Whr Polymer [53,54]
HP Long Life 3 cell 48Whr Polymer [53,54,55]
Compliant with UL 1642 Standard

Battery Recharge Time
Supports battery HP Fast Charge: approximately 50% in 30 minutes [56]

Power Cord
3-wire plug - 1m [52]

Battery Life
Battery life Up to 16 hours and 13 minutes with 56whr battery (HP Long Life 3-Cell, 56 Whr Polymer, UMA graphic, Intel Ultra 7 U15, Display set to 250 nits display (on a 400-nit display), 2*8GB DDR5 memory, 256 GB SSD) Up to 14 hours and 30 minutes with 56whr battery (HP Long Life 3-Cell, 56 Whr Polymer, UMA graphic, Intel Ultra 7 H28, Display set to 250 nits display (on a 400-nit display), 2*8GB DDR5 memory, 256 GB SSD) Up to 14 hours and 31 minutes with 48whr battery (HP Long Life 3-Cell, 48 Whr Polymer, UMA graphic, Intel Ultra 7 U15, Display set to 250 nits display (on a 400-nit display), 2*8GB DDR5 memory, 256 GB SSD) Up to 12 hours and 31 minutes with 48whr battery (HP Long Life 3-Cell, 48 Whr Polymer, UMA graphic, Intel Ultra 7 H28, Display set to 250 nits display (on a 400-nit display), 2*8GB DDR5 memory, 256 GB SSD) [57]

52. Availability may vary by country.
53. Battery is internal and not replaceable by customer. Serviceable by warranty.
54. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors.
55. Only available for selected regions and selected configurations.
56. Recharges your battery up to 50% within 30 minutes when the system is off or in standby mode. Power adapter minimum of 65 watts required for battery capacities 56Whr or less. Power adapter minimum of 100 watts required for battery capacities greater than 56Whr and less than 83Whr. Power adapter minimum of 120 watts required for battery capacities greater than 83Whr and less than 100Whr. After charging has reached 50% capacity, charging will return to normal. Charging time may vary +/-10% due to System tolerance. Upon initial startup, it is necessary to use an minimum 45 W adapter.
57. Mobile Mark 25 battery life will vary depending on various factors including product model, configuration, loaded applications, features, use, wireless functionality, and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See www.bapco.com for additional details.

Proposta de Preço ITEM 3 - PREGÃO ELETRÔNICO Nº 2025.001317 / pg. 115

Technical Specifications

WEIGHTS & DIMENSIONS

Product Weight

Starting at 1.40 kg / 3.09 lb with 56Whr battery [58]
Starting at 1.39 kg / 3.06 lb with 48Whr battery [58,59]
Weight will vary by configuration. Does not include power adapter.

Product Dimensions (W x D x H)

318.6 mm (W) x 224.4 mm (D) x 10.9mm (front)/17mm (rear)
(12.54 in x 8.83 in x 0.43 in (front) / 0.67 in (rear))

Maximum height 19.9mm (Plastic); 20.9mm (Metal)

Pallet Dimensions (W x D x H)

12" to 15" boxes (305mm height): 1200mm x 1000mm x 1080mm [60]

58. Weight will vary by configuration. Does not include power adapter.
59. Only available for selected regions and selected configurations.
60. Product packaging size varies based on options chosen. Please contact your HP representative for your packaging size details. For detailed packaging information, access the HP Commercial Notebooks Packaging Guide.

PORTS/SLOTS

Left Side

1 Super Speed USB Type-A 5Gbps signaling rate Power charging
2 Thunderbolt™ 4 with USB Type-C® 40Gbps signaling rate (USB Power Delivery, DisplayPort™2.1) [61]
1 HDMI 2.1 [62]
1 Headphone/mic combo jack
1 Smart Card Reader (Integrated)

Right side

1 Super Speed USB Type-A 5Gbps signaling rate Data only
1 RJ45 Ethernet port
1 Nano SIM card slot (Optional)
1 Security lock slot (Integrated)

61. SuperSpeed USB 20Gbps signaling rate is not available with Thunderbolt™ 4.
62. HDMI cable sold separately.

Proposta de Preço ITEM 3 - SUPRIMENTOS DE IMPRESSÃO LTDA (2879358) - SEI 2025.001317 / pg. 116

Technical Specifications

SERVICE AND SUPPORT

1-year warranty and 90 day software limited warranty options depending on country. Batteries have a default one year limited warranty. Refer to http://www.hp.com/support/batterywarranty/ for additional battery information. On-site service and extended coverage is also available. HP Care Pack Services are optional extended service contracts that go beyond the standard limited warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: http://www.hp.com/go/cpc. [63]

63. HP Care Packs are sold separately. Service levels and response times for HP Care Packs may vary depending on your geographic location. Service starts on date of hardware purchase. Restrictions and limitations apply. For details, visit http://www.hp.com/go/cpc. HP services are governed by the applicable HP terms and conditions of service provided or indicated to Customer at the time of purchase. Customer may have additional statutory rights according to applicable local laws, and such rights are not in any way affected by the HP terms and conditions of service or the HP Limited Warranty provided with your HP Product.

Proposta de Preço ITEM 3 - SISTEMA OPERACIONAL MICROSOFT (2879358) - SEI 2025.001317 / pg. 117

Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	
Nominal Operating Voltage	20.0V
Average Operating Power	W (TBD)
Max Operating Power	UMA 65W
Temperature	
Operating	0° to 35° C (32° to 95° F) No sustained direct exposure to sunlight, System performance may be reduced above 32°C (89.6°F)
Non-operating	-20° to 60° C (-4° to 140° F) No sustained direct exposure to sunlight, System performance may be reduced above 32°C (89.6°F)
Relative Humidity	
Operating	10% to 90 % (non-condensing)
Non-operating	5% to 95 %, 38.7° C (101.6° F) maximum wet bulb temperature
Shock	
Operating	40 G, 2 ms, half-sine
Non-operating	240 G, 2 ms, half-sine
Random Vibration	
Operating	1.043 grams
Non-operating	3.500 grams
Altitude (unpressurized)	
Operating	3048 m (10000 ft)
Non-operating	12192 m (40000 ft)
Planned Industry Standard Certifications	
Regulatory Model Number	HSN-Q38C
CSA/UL 62368-1	Yes
ENERGY STAR®	Yes [64]
EPEAT®	EPEAT® Gold in the United States [65]
FCC/ICES/CISPR/VCCI	Yes
CE MARKING	Yes
GS Mark	Yes
	Related commodity should comply with ISO 9241 Standards.
China CCC/SRRC	Yes
Taiwan BSMI/NCC	Yes
Korea KCC/KC/KES	Yes
Ukraine NSoC/TEC	Yes
EAEU Compliance	Yes
Saudi Arabian Compliance	Yes
TCO	Yes
WW RoHS	Yes
Low Blue Light	Yes
MIL-STD 810H Testing	Yes[66]

64. Configurations of the HP EliteBook 640 G11 that are ENERGY STAR® qualified are identified as HP EliteBook 640 G11 ENERGY STAR on HP websites and on http://www.energystar.gov.
65. Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit http://www.epeat.net for more information.

Proposta de Preço ITEM 3 - SISMOGRAFO MARINHO ED... (2879359) - SEI 2025.001317 / pg. 118

Technical Specifications

66. MIL STD 810H testing is not intended to demonstrate fitness for U.S. Department of Defense contract requirements or for military use. Test results are not a guarantee of future performance under these test conditions. Accidental damage requires an optional HP Accidental Damage Protection Care Pack.

DISPLAYS

1. Actual brightness will be lower with touchscreen or HP Sure View.

NOTE: All specifications represent the typical specifications provided by HP's component manufacturers; actual performance may vary either higher or lower.

14.0 in WUXGA (1920 x 1200) Anti-Glare UWVA LED NTSC 45 NB2X 300 eDP 1.2 w/o PSR bent LCD Panel	**Outline Dimensions (W x H)**	307.29x199.25(max)
	Active Area	301.59 X 188.50 (typ)
	Weight	300 (max)
	Diagonal Size	14
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	1000:1 (typ)
	Refresh Rate	60 Hz
	Brightness	300 nits[1]
	Pixel Resolution - Format	1920 x1200 (WUXGA)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%
	Color Depth	6+2 FRC
	Viewing Angle	UWVA 89/89/89/89.
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max))	2.20 (max) / 2.70 (max)

14.0 in WUXGA (1920 x 1200) Anti-Glare UWVA LED NTSC 45 NB2X 300 TOP eDP 1.2 w/o PSR bent LCD Panel	**Outline Dimensions (W x H)**	307.29x199.25(max)
	Active Area	301.59 X 188.50 (typ)
	Weight	305g (max)
	Diagonal Size	14
	Surface Treatment	Anti-Glare
	Touch Enabled	Yes
	Contrast Ratio	1000:1(typ)
	Refresh Rate	60 Hz
	Brightness	300 nits[1]
	Pixel Resolution - Format	1920 x 1200 (WUXGA)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	NTSC 45%

Proposta de Preço ITEM 3 - SOLUÇÃO MULTIMÍDIA TIPO C (2879358) - SEI 2025.001317 / pg. 119

Technical Specifications

	Color Depth	6+2 FRC
	Viewing Angle	UWVA 89/89/89/89
	Low Blue Light	No
	Power Consumption (W, EBL@ 150nits max/ 200nits max))	2.15 (max)/2.65 (max)
14.0 in WUXGA (1920 x 1200) Anti-Glare UWVA WLED+LBL sRGB NB2X 400 eDP 1.4+PSR2 Low-Power 100 bent LCD Panel	**Outline Dimensions (W x H)**	307.590 x 199.550 (max)
	Active Area	301.590 x 188.500 (typ)
	Weight	210 (max)
	Diagonal Size	14
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	1000:1(typ)
	Refresh Rate	60 Hz
	Brightness	400 nits[1]
	Pixel Resolution - Format	1920 x 1200 (WUXGA)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	sRGB 100%
	Color Depth	8
	Viewing Angle	UWVA 89/89/89/89
	Low Blue Light	Yes
	Power Consumption (W, EBL@ 150nits max/ 200nits max))	1.29 (max) / 1.66 (max)
14.0 in WUXGA (1920 x 1200) Anti-Glare UWVA WLED+LBL sRGB NB2Y 1000 eDP 1.3+PSR 100 PrivacyG4 Plus bent LCD Panel	**Outline Dimensions (W x H)**	307.600 x 199.550 (max)
	Active Area	301.680 x 188.500 (typ)
	Weight	238 (max)
	Diagonal Size	14
	Surface Treatment	Anti-Glare
	Touch Enabled	No
	Contrast Ratio	1500:1 (typ)
	Refresh Rate	60 Hz
	Brightness	1000 nits[1]
	Pixel Resolution - Format	1920 x 1200 (WUXGA)
	Backlight	WLED
	Pixel Resolution	RGB
	Color Gamut Coverage	sRGB 100%
	Color Depth	8

Proposta de Preço ITEM 3 - SUPRIMENTOS DE IMPRESSÃO LTDA (2879358) - SEI 2025.001317 / pg. 120

Technical Specifications

	Viewing Angle	UWVA 85/85/85/85
	Low Blue Light	Yes

STORAGE AND DRIVES

For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows 10 and 11) is reserved for system recovery software.

SSD 512GB 2280 PCIe-4x4 NVMe Three Layer Cell	**Form Factor**	M.2 2280
	Capacity	512GB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	6400 MB/s ±20%
	Maximum Sequential Write	3500 MB/s ±20%
	Logical Blocks	1,000,215,215
	Features	Pyrite 2.0; TRIM; L1.2
SSD 1TB 2280 PCIe-4x4 NVMe Three Layer Cell	**Form Factor**	M.2 2280
	Capacity	1TB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	6400 MB/s ±20%
	Maximum Sequential Write	5000 MB/s ±20%
	Logical Blocks	2,000,409,264
	Features	Pyrite 2.0; TRIM; L1.2
SSD 2TB 2280 PCIe-4x4 NVMe Three Layer Cell	**Form Factor**	M.2 2280
	Capacity	2TB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	6400 MB/s ±20%
	Maximum Sequential Write	5000 MB/s ±20%
	Logical Blocks	4,000,797,360
	Features	Pyrite 2.0; TRIM; L1.2
256GB PCIe 2280 NVMe Self Encrypted OPAL2 Value Solid State Drive	**Form Factor**	M.2 2280
	Capacity	256GB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	2000 MB/s ±20%
	Maximum Sequential Write	900 MB/s ±20%

Proposta de Preço ITEM 3 - SUPRIMENTOS DE INFORMÁTICA - LOTE 1 (2879358) - SEI 2025.001317 / pg. 121

Technical Specifications

	Logical Blocks	500,118,192
	Features	TCG Opal 2.0; TRIM; L1.2
512GB PCIe-4x4 2280 NVME Self Encrypted OPAL2 Three Layer Cell Solid State Drive	**Form Factor**	M.2 2280
	Capacity	512GB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	6400 MB/s ±20%
	Maximum Sequential Write	3500 MB/s ±20%
	Logical Blocks	1,000,215,215
	Features	TCG Opal 2.0; TRIM; L1.2
1TB PCIe-4x4 2280 NVME Self Encrypted OPAL2 Three Layer Cell Solid State Drive	**Form Factor**	M.2 2280
	Capacity	1 TB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	6400 MB/s ±20%
	Maximum Sequential Write	5000 MB/s ±20%
	Logical Blocks	2,000,409,264
	Features	Pyrite 2.0, TRIM; L1.2
SSD 256GB 2280 PCIe NVMe Value	**Form Factor**	M.2 2280
	Capacity	256 GB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	2000 MB/s ±20%
	Maximum Sequential Write	900 MB/s ±20%
	Logical Blocks	500,118,192
	Features	Pyrite 2.0; TRIM; L1.2
SSD 512GB 2280 PCIe NVMe Value	**Form Factor**	M.2 2280
	Capacity	512 GB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	2200 MB/s ±20%
	Maximum Sequential Write	1000 MB/s ±20%
	Logical Blocks	1,000,215,215

Proposta de Preço ITEM 3 - SAMSUNG MM9L8M7TGKLETDV (5879358) - SEI 2025.001317 / pg. 122

Technical Specifications

Features	Pyrite 2.0; TRIM; L1.2

NETWORKING/COMMUNICATIONS

Intel® AX211 Wi-Fi 6E Bluetooth® 5.3 wireless card vPro® WLAN [1]	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11ac IEEE 802.11ax IEEE 802.11b IEEE 802.11d IEEE 802.11e IEEE 802.11g IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11n IEEE 802.11r IEEE 802.11v
	Interoperability	Wi-Fi certified
	Frequency Band	• 802.11b/g/n/ax 2.402 – 2.482 GHz • 802.11a/n/ac/ax 4.9 – 4.95 GHz (Japan) 5.15 – 5.25 GHz 5.25 – 5.35 GHz 5.47 – 5.725 GHz 5.825 – 5.850 GHz 5.955 – 6.415 GHz 6.435 – 6.515 GHz 6.535 – 6.875 GHz 6.895 – 7.115 GHz
	Data Rates	• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11ac : MCS0 ~ MCS9, (20MHz, 40MHz, 80MHz, 160MHz) • 802.11ax : MCS0 ~ MCS11, (20MHz, 40MHz, 80MHz, 160MHz) • 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, 40MHz)
	Modulation	Direct Sequence Spread Spectrum 1024QAM, 16-QAM, 256-QAM, 4096QAM, 64-QAM, BPSK, CCK, OFDM, QPSK
	Security[2]	• 802.1x authentication • AES-CCMP: 128 bit in hardware • IEEE 802.11i • IEEE and WiFi certified 64 / 128 bit WEP encryption for a/b/g mode only • WAPI • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification • WPA3 (personal) certification
	Network Architecture	Ad-hoc (Peer to Peer)

Proposta de Preço ITEM 3 - PREGÃO ELETRÔNICO Nº 2025.001317 / pg. 123

Technical Specifications

Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power[3]	• 802.11b : +17dBm minimum • 802.11g : +16dBm minimum • 802.11a : +17dBm minimum • 802.11n HT20(2.4GHz) : +14dBm minimum • 802.11n HT40(2.4GHz) : +13dBm minimum • 802.11n HT20(5GHz) : +14dBm minimum • 802.11n HT40(5GHz) : +13dBm minimum • 802.11ac VHT80(5GHz) : +10dBm minimum • 802.11ac VHT160(5GHz) : +10dBm minimum • 802.11ax HE40(2.4GHz) : +12dBm minimum • 802.11ax HE80(5GHz) : +10dBm minimum • 802.11ax HE160(5GHz) : +10dBm minimum
Power Consumption	• Transmit mode : 2.3 W • Receive mode : 1.6 W • Idle mode (PSP) : 180 mW (WLAN Associated) • Idle mode: 50 mW (WLAN unassociated) • Connected Standby/Modern Standby : 10 mW • Radio disabled : 8 mW
Power Management	ACPI and PCI Express compliant power management
Receiver Sensitivity[4]	• 802.11b, 1Mbps : -93.5dBm maximum • 802.11b, 11Mbps : -84dBm maximum • 802.11a/g, 6Mbps : -86dBm maximum • 802.11a/g, 54Mbps : -72dBm maximum • 802.11n, MCS07 : -67dBm maximum • 802.11n, MCS15 : -64dBm maximum • 802.11ac, MCS0(VHT80) : -84dBm maximum • 802.11ac, MCS9(VHT80) : -59dBm maximum • 802.11ac, MCS9(VHT160) : -58.5dBm maximum • 802.11ax, MCS11(HE40): -57dBm maximum • 802.11ax, MCS11(HE80): -54dBm maximum • 802.11ax, MCS11(HE160): -53.5dBm maximum
Antenna type	High efficiency antenna with spatial diversity Two embedded tri-band 2.4/5/6 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth® communications
Form Factor	PCI-Express M.2 MiniCard
Dimensions	30.00 x 22.00 x 2.30 mm (1.18 x 0.87 x 0.09 inch)
Weight	1. Type 2230: 2.8 g 2. Type 1216: 1.3 g
Operating Voltage	3.3 v +/- 9 %
LED Activity	LED Amber – Radio OFF; LED OFF – Radio ON

HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Technology

Bluetooth® Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3 Compliant
Frequency Band	2402 to 2480 MHz

Proposta de Preço ITEM 3 - SUSTENTO MULTIMÍDIA TIPO B (1679358) - SEI 2025.001317 / pg. 124

Technical Specifications

Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Signaling Data Rate	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of + 4 dBm for BR and EDR.
Power Consumption	Peak (Tx): 330 mW Peak (Rx): 230 mW Selective Suspend: 17 mW
Bluetooth® Software Supported	Microsoft Windows Bluetooth® Software
Link Topology	
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C/E, Section 15.247, 15.249, 15.407; ETSI 300 328, ETSI 301 893, ETSI 303 687
Bluetooth® Profiles Supported	2Mbps LE Advanced Audio Distribution Profile (A2DP) Basic Imaging Profile (BIP) Bluetooth® 4.1-ESR 5/6/7 Compliance Bluetooth® 4.2 ESR08 Compliance Bluetooth® 5.2 Bluetooth® 5.3 Wireless Card Channel Selection Algo Encryption key size control enhancements ESR9/10 Compliance FAX Profile (FAX) Hands Free Profile (HFP) Headset Profile (HSP) LE Advertisement Extensions LE Data Packet Length Extension LE Dual Mode LE L2CAP Connection Oriented Channels LE Link Layer LE Link Layer Ping LE Long Range LE Low Duty Cycle Directed Advertising LE Privacy 1.2 –Extended Scanner Filter Policies LE Privacy 1.2 –Link Layer Privacy LE Secure Connection- Basic/Full Limited High Duty Cycle Non-Connectable Advertising Periodic Advertisement interval Train Nudging & Interlaced Scan Windows Bluetooth® profiles support

1. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported. Wi-Fi 6E is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a wireless router, sold separately, that supports 80MHz and higher channels.

Proposta de Preço ITEM 3 - SUPRIMENTOS MATRICIAIS (1879358) - SEI 2025.001317 / pg. 125

Technical Specifications

2. Check latest software/driver release for updates on supported security features.
3. The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

Intel® AX211 Wi-Fi 6E Bluetooth® 5.3 wireless card WLAN [1]	**Wireless LAN Standards**	IEEE 802.11a IEEE 802.11ac IEEE 802.11ax IEEE 802.11b IEEE 802.11d IEEE 802.11e IEEE 802.11g IEEE 802.11h IEEE 802.11i IEEE 802.11k IEEE 802.11n IEEE 802.11r IEEE 802.11v
	Interoperability	Wi-Fi certified
	Frequency Band	• 802.11b/g/n/ax 2.402 – 2.482 GHz • 802.11a/n/ac/ax 4.9 – 4.95 GHz (Japan) 5.15 – 5.25 GHz 5.25 – 5.35 GHz 5.47 – 5.725 GHz 5.825 – 5.850 GHz 5.955 – 6.415 GHz 6.435 – 6.515 GHz 6.535 – 6.875 GHz 6.895 – 7.115 GHz
	Data Rates	• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11ac : MCS0 ~ MCS9, (20MHz, 40MHz, 80MHz, 160MHz) • 802.11ax : MCS0 ~ MCS11, (20MHz, 40MHz, 80MHz, 160MHz) • 802.11b: 1, 2, 5.5, 11 Mbps • 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps • 802.11n: MCS 0 ~ MCS 15, (20MHz, 40MHz)
	Modulation	Direct Sequence Spread Spectrum 1024QAM, 16-QAM, 256-QAM, 64-QAM, BPSK, CCK, Direct Sequence Spread Spectrum, OFDM, QPSK
	Security[2]	• 802.1x authentication • AES-CCMP: 128 bit in hardware • IEEE 802.11i • IEEE and WiFi certified 64 / 128 bit WEP encryption for a/b/g mode only • WAPI • WPA, WPA2: 802.1x. WPA-PSK, WPA2-PSK, TKIP, and AES. • WPA2 certification

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Technical Specifications

	• WPA3 (personal) certification
Network Architecture	Ad-hoc (Peer to Peer)
Models	Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power[3]	• 802.11b : +17dBm minimum • 802.11g : +16dBm minimum • 802.11a : +17dBm minimum • 802.11n HT20(2.4GHz) : +14dBm minimum • 802.11n HT40(2.4GHz) : +13dBm minimum • 802.11n HT20(5GHz) : +14dBm minimum • 802.11n HT40(5GHz) : +13dBm minimum • 802.11ac VHT80(5GHz) : +10dBm minimum • 802.11ac VHT160(5GHz) : +10dBm minimum • 802.11ax HE40(2.4GHz) : +12dBm minimum • 802.11ax HE80(5GHz) : +10dBm minimum • 802.11ax HE160(5GHz) : +10dBm minimum
Power Consumption	Transmit mode : 2.3 W Receive mode : 1.6 W Idle mode (PSP) : 180 mW (WLAN Associated) Idle mode: 50 mW (WLAN unassociated) Connected Standby/Modern Standby : 10 mW Radio disabled : 8 mW
Power Management	ACPI and PCI Express compliant power management
Receiver Sensitivity[4]	• 802.11b, 1Mbps : -93.5dBm maximum • 802.11b, 11Mbps : -84dBm maximum • 802.11a/g, 6Mbps : -86dBm maximum • 802.11a/g, 54Mbps : -72dBm maximum • 802.11n, MCS07 : -67dBm maximum • 802.11n, MCS15 : -64dBm maximum • 802.11ac, MCS0(VHT80) : -84dBm maximum • 802.11ac, MCS9(VHT80) : -59dBm maximum • 802.11ac, MCS9(VHT160) : -58.5dBm maximum • 802.11ax, MCS11(HE40): -57dBm maximum • 802.11ax, MCS11(HE80): -54dBm maximum • 802.11ax, MCS11(HE160): -53.5dBm maximum
Antenna type	High efficiency antenna with spatial diversity Two embedded tri-band 2.4/5/6 GHz antennas are provided to the card to support WLAN MIMO communications and Bluetooth® communications
Form Factor	PCI-Express M.2 MiniCard
Dimensions	30.00 x 22.00 x 2.30 mm (1.18 x 0.87 x 0.09 inch)
Weight	1. Type 2230: 2.8 g 2. Type 1216: 1.3 g
Operating Voltage	3.3v +/- 9%
LED Activity	LED Amber – Radio OFF; LED OFF – Radio ON

HP Integrated Module with Bluetooth® 4.0/4.1/4.2/5.0/5.1/5.2/5.3 Wireless Card Technology

Bluetooth® Specification	4.0/4.1/4.2/5.0/5.1/5.2/5.3 Compliant

Proposta de Preço ITEM 3 - SUPRIMENTOS DE IMPRESSÃO (1879358) - SEI 2025.001317 / pg. 127

Technical Specifications

Frequency Band	2402 to 2480 MHz
Number of Available Channels	Legacy: 0~79 (1 MHz/CH) BLE: 0~39 (2 MHz/CH)
Signaling Data Rate	Legacy : 3 Mbps data rate; throughput up to 2.17 Mbps BLE : 1 Mbps data rate; throughput up to 0.2 Mbps Legacy : Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Legacy : Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric (3-DH5) or 864 kbps symmetric (3-EV5)
Transmit Power	The Bluetooth® component shall operate as a Class II Bluetooth® device with a maximum transmit power of + 4 dBm for BR and EDR.
Power Consumption	Peak (Tx): 330 mW Peak (Rx): 230 mW Selective Suspend: 17 mW
Bluetooth® Software Supported	Microsoft Windows Bluetooth® Software
Link Topology	
Power Management	Microsoft Windows ACPI, and USB Bus Support
Certifications	FCC (47 CFR) Part 15C/E, Section 15.247, 15.249, 15.407; ETSI 300 328, ETSI 301 893, ETSI 303 687
Bluetooth® Profiles Supported	2Mbps LE Advanced Audio Distribution Profile (A2DP) Basic Imaging Profile (BIP) Bluetooth® 4.1-ESR 5/6/7 Compliance Bluetooth® 4.2 ESR08 Compliance Bluetooth® 5.2 Bluetooth® 5.3 Wireless Card Channel Selection Algo Encryption key size control enhancements ESR9/10 Compliance FAX Profile (FAX) Hands Free Profile (HFP) Headset Profile (HSP) LE Advertisement Extensions LE Data Packet Length Extension LE Dual Mode LE L2CAP Connection Oriented Channels LE Link Layer LE Link Layer Ping LE Long Range LE Low Duty Cycle Directed Advertising LE Privacy 1.2 –Extended Scanner Filter Policies LE Privacy 1.2 –Link Layer Privacy LE Secure Connection- Basic/Full Limited High Duty Cycle Non-Connectable Advertising Periodic Advertisement interval Train Nudging & Interlaced Scan Windows Bluetooth® profiles support

1. Wi-Fi 6E requires a Wi-Fi 6E router, sold separately, to function in the 6GHz band. Availability of public wireless access points limited. Wi-Fi 6E is backwards compatible with prior 802.11 specs. And available in countries where Wi-Fi 6E is supported. Wi-Fi 6E is designed to support gigabit data rate when transferring files between two devices connected to the same router. Requires a

Proposta de Preço ITEM 3 - SUPRIMENTOS MATERIAL DIVERSO (2879358) - SEI 2025.001317 / pg. 128

Technical Specifications

wireless router, sold separately, that supports 80MHz and higher channels.
2. Check latest software/driver release for updates on supported security features.
3. The FCC has declared as of September 1, 2014 products that utilize passive scanning on channel 12/13 and are capable of transmitting must fully comply with requirements of 15.247 or otherwise disable those channels.
4. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

HP 4G LTE-A Pro Cat16 WWAN eSIM[1]	**Technology/Operating bands**	WCDMA/HSPA+ operating bands: Band 1: 1920 to 1980 MHz (UL), 2110 to 2170 MHz (DL) Band 2: 1850 to 1910 MHz (UL), 1930 to 1990 MHz (DL) Band 4: 1710 to 1755 MHz (UL), 2110 to 2155 MHz (DL) Band 5: 824 to 849 MHz (UL), 869 to 894 MHz (DL) Band 8: 880 to 915 MHz (UL), 925 to 960 MHz (DL) LTE FDD/TDD operating bands: Band 1: 1920 to 1980 MHz (UL), 2110 to 2170 MHz (DL) Band 12: 699 to 716 MHz (UL), 729 to 746 MHz (DL) Band 13: 777 to 787 MHz (UL), 746 to 756 MHz (DL) Band 14: 788 to 798 MHz (UL), 758 to 768 MHz (DL) Band 17: 704 to 716 MHz (UL), 734 to 746 MHz (DL) Band 18: 815 to 830 MHz (UL), 860 to 875 MHz (DL) Band 19: 830 to 845 MHz (UL), 875 to 890 MHz (DL) Band 2: 1850 to 1910 MHz (UL), 1930 to 1990 MHz (DL) Band 20: 832 to 862 MHz (UL), 791 to 821 MHz (DL) Band 25: 1850 to 1915 MHz (UL), 1930 to 1995 MHz (DL) Band 26: 814 to 849 MHz (UL), 859 to 894 MHz (DL) Band 28: 703 to 748 MHz (UL), 758 to 803 MHz (DL) Band 29: 717 to 728 MHz (DL) Band 3: 1710 to 1785 MHz (UL), 1805 to 1880 MHz (DL) Band 30: 2305 to 2315 MHz (UL) 2350 to 2360 MHz (DL) Band 32: 1452 to 1496 MHz (DL) Band 34: 2010 to 2025 MHz (UL/DL) Band 38: 2570 to 2620 MHz (UL/DL) Band 39: 1880 to 1920 MHz (UL/DL) Band 4: 1710 to 1755 MHz (UL), 2110 to 2155 MHz (DL) Band 40: 2300 to 2400 MHz (UL/DL) Band 41: 2496 to 2690 MHz (UL/DL) Band 42: 3400 to 3600 MHz (UL/DL) Band 43: 3400 to 3800 MHz (UL/DL) Band 48: 3550 to 3700 MHz (UL/DL) Band 5: 824 to 849 MHz (UL), 869 to 894 MHz (DL) Band 66: 1710 to 1800 MHz (UL), 2110 to 2200 MHz (DL) Band 7: 2500 to 2570 MHz (UL), 2620 to 2690 MHz (DL) Band 71: 663 to 698 MHz (UL), 617 to 652 MHz (DL) Band 8: 880 to 915 MHz (UL), 925 to 960 MHz (DL)
	Wireless protocol standards	3GPP LTE Rel15 LTE Specification, 100MHz 5 DLCA, 256 QAM, DL 1.0Gbps (CAT16)/ 40MHz 2 ULCA, 256 QAM, UL 211Mbps (CAT18) WCDMA 3GPP Release 8 UMTS Specification, DL UMTS: 384 kbps/UL 384 kbp, DL DC-HSPA+: 42 Mbps (CAT24)/UL 11.5 Mbps (CAT7) WCDMA R99, 3GPP Release 5, 6, 7 and 8 UMTS Specification
	GPS	Standalone/A-GPS (MS-A, MS-B)
	GPS bands	GPS L1 (1575.42MHz), GLONASS L1 (1602MHz), Beidou B1

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Technical Specifications

	(1561.098MHz), Galileo E1 (1575.42MHz), QZSS (1575.42MHz)
Maximum data rates	DC-HSPA+: 42.00 Mbps(Download), 11.50 Mbps (Upload)
Maximum output power	HSPA+: 23.5 dBm LTE (all bands except B41): 23.0 dBmLTE (all bands except B41): 23.0 dBm
Maximum power consumption	LTE: 1,300 mA (peak); 1,100 mA (average) HSPA+: 1,100 mA (peak); 800 mA (average)
Form Factor	M.2, 3052-S3 Key B
Weight	8.0 g (0.282 oz)
Dimensions (Length x Width x Thickness)	52.00 x 30.00 x 2.30 mm (2.05 x 1.18 x 0.09 inch)
embedded eSIM	Support

1. Mobile Broadband is an optional feature. Connection requires wireless data service contract, network support, and is not available in all areas. Contact service provider to determine the coverage area and availability. Connection speeds will vary due to location, environment, network conditions, and other factors. 4G LTE not available on all products or in all countries.

Proposta de Preço ITEM 3 - PREGÃO ELETRÔNICO Nº 2025.001317 / pg. 130

Technical Specifications

NFC NXP NPC300	**Dimensions (L x W x H)**	17.00 x 10.00 x 2.00 mm (0.67 x 0.39 x 0.08 inch)
	Chipset	NPC300
	System interface	I2C
	NFC RF standards	ISO/IEC 14443 A ISO/IEC 14443 B ISO/IEC 15693 ISO/IEC 18092 ECMA-340 NFCIP-1 Target and Initiator ECMA-320 NFCIP-2
	NFC Forum Support	Tag Type 1, Type 2, Type3 and Type 4, NFCIP-1 and NFCIP-2
	Reader (PCD-VCD) Mode	ISO/IEC 14443 A ISO/IEC 14443 B ISO/IEC 15693 MIFARE 1K MIFARE 4K MIFARE DESFire FeliCa Jewel and Topaz
	Card Emulation (PICC-VICC) Mode	ISO/IEC 14443 A ISO/IEC 14443 B and B' MIFARE FeliCa
	Frequency	13.56 MHz
	NFC Modes Supported	Reader/Writer, Peer-to-Peer
	Raw RF Data Rates	106, 212, 424, 848 kbps
	Operating temperature	Operating: 0 °C to 70 °C (32 °F to 158 °F) Storage: -20 °C to 125 °C (-4 °F to 257 °F)
	Humidity	Operating: 10% - 90% (non-condensing) Non-Operating: 5% - 95% (non-condensing)
	Supply Operating voltage	4.35 to 5.25 Volts
	I/O Voltage	1.8V or 3.3V
	Power Consumption (Booster enable, VBAT= 3.3V, VCC_BOOST = 5V)	
	Mode	Power Consumption, Typical
	Polling	7.3 mA
	Detected Test Tag Type 1	Total 283.8 mA Net Module 236.8 mA
	Detected Test Tag Type 2	Total 288.8 mA Net Module 241.8 mA
	Detected Test Tag Type 3	Total 287.7 mA Net Module 240.7 mA
	Detected Test Tag Type 4	Total 282.3 mA Net Module 235.3 mA
	Antenna	Antenna connector, 0.5mm pitch, 7 connector FPC. Antenna matching is external to module.

Proposta de Preço ITEM 3 - SUPRIMENTOS DE INFORMÁTICA - TED - (2879358) - SEI 2025.001317 / pg. 131

Technical Specifications

Intel® I219-LM 1 Gigabit Network Connection LOM (vPro®)	**Connector**	RJ-45
	System Interface	PCI (Intel proprietary) + SMBus
	Data rates supported	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023 clauses 40) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s
	IEEE Compliance	IEEE 802.1p QoS (Quality of Service) Support IEEE 802.1q VLAN support IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable) IEEE 802.3az EEE (Energy Efficient Ethernet)
	Performance	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling (Hash Mode Only) Jumbo Frame 9K
	Power consumption	Cable Disconnetion: 25mW 100Mbps Full Run: 450mW 1000bp Full Run: 1000mW WoL Enable(S3/S4/S5): 50mW WoL Disable(S3/S4/S5): 25mW
	Power Management	ACPI compliant – multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption
	Management Interface	Auto MDI/MDIX Crossover cable detection
	IT Manageability	Wake-on-LAN from modern standby or sleep state (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Virtual Cable Doctor for Ethernet cable status
	Security & Manageability	Intel® vPro™ support with appropriate Intel® chipset components
Intel® I219v 1 Gigabit Network Connection LOM (non-vPro®)	**Connector**	RJ-45
	System Interface	PCI (Intel proprietary) + SMBus
	Data rates supported	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30)

Proposta de Preço ITEM 3 - SUPRIMENTOS DE INFORMÁTICA LTDA (2879358) - SEI 2025.001317 / pg. 132

Technical Specifications

		1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 802.3 clauses 40) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10, 100 & 1000 Mbit/s
	IEEE Compliance	IEEE 802.1p QoS (Quality of Service) Support IEEE 802.1q VLAN support IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable) IEEE 802.3az EEE (Energy Efficient Ethernet) IEEE 802.3i 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab 1000BAE-T IEEE 802.3bz 2.5GBASE-T
	Performance	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling (Hash Mode only) Jumbo Frame 9K
	Power consumption	Cable Disconnetion: 25mW 100Mbps Full Run: 450mW 1000bps Full Run: 1000mW WoL Enable(S3/S4/S5): 50mW WoL Disable(S3/S4/S5): 25mW
	Power Management	ACPI compliant – multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption
	Management Interface	Auto MDI/MDIX Crossover cable detection
	IT Manageability	Wake-on-LAN from modern standby or sleep state (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Virtual Cable Doctor for Ethernet cable status
	Security & Manageability	Intel® non-vPro™ support with appropriate Intel® chipset components
Qualcomm 9205 LTE-M (no Internet)	**Technology/Operating bands**	FDD LTE: 1700/2100 (Band 4), 1700/2100 (Band 66), 1800 (Band 3), 1900 (Band 2), 1900 (Band 25), 2100 (Band 1), 700 (Band 12 lower), 700 (Band 13 upper), 700 (Band 14 upper), 700 (Band 28), 700 (band 85), 800 (Band 20), 800 (Band 27), 850 (Band 18 lower), 850 (Band 19 upper), 850 (Band 26), 850 (Band 5), 900 (Band 8) MHz
	Wireless protocol standards	GSM/GPRS/EGPRS: 1800, 1900, 850, 900 MHz 3GPP TS 21.111 V10.0.0: USIM and IC card requirements 3GPP TS 27.005 V10.0.1: Use of Data Terminal Equipment - Data Circuit terminating Equipment (DTE - DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS) 3GPP TS 27.007 V10.0.8: AT command set for User Equipment (UE) 3GPP TS 31.102 V10.11.0: Characteristics of the Universal Subscriber Identity Module (USIM) application

Proposta de Preço ITEM 3 PREGÃO ELETRÔNICO SRP/TRE-CE (1879359) SEI 2025.001317 / pg. 133

Technical Specifications

	3GPP TS 31.11 V10.16.0: Universal Subscriber Identity Module (USIM) Application Toolkit (USAT) 3GPP TS 36.124 V10.3.0: Electro Magnetic Compatibility (EMC) requirements for mobile terminals and ancillary equipment 3GPP TS 36.521-1 V14.3.0: User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Conformance testing 3GPP TS 51.010-1 V10.5.0: Mobile Station (MS) conformance specification; Part 1: Conformance specification 3GPP TS 51.011 V4.15.0: Specification of the Subscriber Identity Module -Mobile Equipment (SIM-ME) interface
GPS	Standalone GPS/Beidou/GLONASS
GPS bands	1575.42 MHz ± 1.023 MHz, GLONASS 1596-1607MHz, Beidou 1561.098 MHz
Maximum data rates	LTE FDD: 375.00 Kbps (Download), 1119.00 Kbps (Upload) GPRS: 107.00 Kbps (Download), 85.60 Kbps (Upload) EGPRS: 296.00 Kbps (Download), 236.80 Kbps (Upload)
Maximum output power	LTE (all bands except B41): 21.5 dBm GSM: 34.0 dBm
Maximum power consumption	LTE: 147 mA(peak), 60 mA(average)
Form Factor	M.2, 2242-S3 Key B
Weight	4.0 g (0.141 oz)
Dimensions (Length x Width x Thickness)	22.00 x 42.00 x 2.30 mm (0.87 x 1.65 x 0.09 inch)
embedded eSIM	Support

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Technical Specifications

POWER

1. Actual battery Watt-hours (Wh) will vary from design capacity. Battery capacity will naturally decrease with shelf life, time, usage, environment, temperature, system configuration, loaded apps, features, power management settings and other factors

AC Adapter 65 Watt nPFC Standard USB type C Straight 1.8m	**Weight**	240g ± 10g	
	Input	100-240Vac	
		Input Efficiency	81.50% min at 115 Vac/ 230 Vac @5.00V 86.70% min at 115 Vac/ 230 Vac @9.00V 88.00% min at 115 Vac/ 230 Vac @12.00V 89.00% min at 115 Vac/ 230 Vac @15.00V 89.00% min at 115 Vac/ 230 Vac @20.00V
		Input frequency range	47-63Hz
		Input AC current	Max. 1.6 A at 90 Vac
	Output	**Output power**	5V/15W 9V/27W 12V/60W 15V/65W 20V/65W
		DC output	5V/9V/12V/15V/20V
		Hold-up time	100% load 5ms at 115 Vac input
		Output current limit	< 8.0A
		AC Inlet Type	C6
		DC Cable Connector	USB type C
		DC Cable Material	PVC
	Connector	C6	
	Environmental Design	**Operating temperature**	32˚ F to 95˚ F (0˚ to 35˚ C)
		Non-operating (storage) temperature	-4˚ F to 185˚ F (-20˚ to 85˚ C)
		Altitude	0 to 16,400 ft (0 to 5000m)
		Humidity	20% to 95%
		Storage Humidity	10% to 95%
	EMI and Safety Certifications	CE Mark - full compliance with LVD and EMC directives Worldwide safety standards - IEC60950-1 and IEC62368-1 : 2018, EN62368-1:2014+A11, UL 62368-1 Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CECP, CU(EAC), EAEU, KCC(Safety+EMC) and K-MEPS, NOM-001 and 029 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC	

Proposta de Preço ITEM 3 - PREGÃO ELETRÔNICO Nº 2025.001317 / pg. 135

Technical Specifications

HP 65W Standard USB-C Straight AC Power Adapter	**Weight**	240g ± 10g	
	Input	100-240Vac	
		Input Efficiency	81.50% min at 115 Vac/ 230 Vac @5.00V 86.70% min at 115 Vac/ 230 Vac @9.00V 88.00% min at 115 Vac/ 230 Vac @12.00V 89.00% min at 115 Vac/ 230 Vac @15.00V 89.00% min at 115 Vac/ 230 Vac @20.00V
		Input frequency range	47-63Hz
		Input AC current	Max. 1.6 A at 90 Vac
	Output	**Output power**	5V/15W 9V/27W 12V/60W 15V/65W 20V/65W
		DC output	5V/9V/12V/15V/20V
		Hold-up time	100% load 5ms at 115 Vac input
		Output current limit	< 8.0A
		AC Inlet Type	C6
		DC Cable Connector	USB type C
		DC Cable Material	Halogen Free
	Connector	C6	
	Environmental Design	**Operating temperature**	32˚ F to 95˚ F (0˚ to 35˚ C)
		Non-operating (storage) temperature	-4˚ F to 185˚ F (-20˚ to 85˚ C)
		Altitude	0 to 16,400 ft (0 to 5000m)
		Humidity	20% to 95%
		Storage Humidity	10% to 95%
	EMI and Safety Certifications	CE Mark - full compliance with LVD and EMC directives Worldwide safety standards - IEC60950-1 and IEC62368-1 : 2018, EN62368-1:2014+A11, UL 62368-1 Agency approvals - C-UL-US, TUV/GS, TUV/PSE, EN55032 Class B, FCC Class B, CISPR32 Class B, CCC and CECP, CU(EAC), EAEU, KCC(Safety+EMC) and K-MEPS, NOM-001 and 029 NYCE, NRcan, NRCS, ISC, SEC, PSB, Argentina S-mark, Australia RCM, BIS, BSMI, UAE, UKCA DoC	

Proposta de Preço ITEM 3 - PREGÃO ELETRÔNICO SRP 2025.001317 / pg. 136

Technical Specifications

RX 48Whr Long Life Polymer Fast Charge 3 cell Battery	**Weight**	0.192kg +/- 10g (0.423 lb)	
	Cells/Type	3cell Lithium-Ion Polymer cell / NCM 565875	
	Energy	**Voltage**	11.4V
		Amp-hour capacity	4.285Ah
		Watt-hour capacity[1]	48.84Wh
	Temperature	**Operating (Charging)**	32˚ to 113˚ F (0˚ to 45˚ C) 32˚ to 122˚ F (0˚ to 50˚ C)
		Operating (Discharging)	14˚ to 140˚ F (10˚ to 60˚ C)
		Optional Travel Battery Available	No

NOTE*: Only available for selected regions and selected configurations.

RX 56Whr Long Life Polymer Fast Charge 3 cell Battery	**Weight**	0.208kg +/- 10g (0.459 lb)	
	Cells/Type	3cell Lithium-Ion Polymer cell / 586075	
	Energy	**Voltage**	11.58V
		Amp-hour capacity	4.840Ah
		Watt-hour capacity[1]	56.04Wh
	Temperature	**Operating (Charging)**	32˚ to 113˚ F (0˚ to 45˚ C) 32˚ to 122˚ F (0˚ to 50˚ C)
		Operating (Discharging)	14˚ to 140˚ F (-10˚ to 60˚ C)
		Optional Travel Battery Available	No

AUDIO

HD Stereo Codec	ALC3247
Audio I/O Ports	3.5mm Headset: CTIA only; Headphone-out
Internal Speaker Amplifier	Integrate in ALC3247
Multi-streaming Capable	Playback multi-streaming can be enabled in the audio control panel to allow independent audio streams to be sent to/from the front jacks or integrated speaker., Following MSFT Behavior
Sampling	DAC: Supports resolutions from 16-bit to 16-bit;48.0 kHZ to 48.0 kHz ADC: Supports resolutions from 16-bit to 16-bit;48.0 kHZ to 48.0 kHz
Wavetable Syntheses	Yes - Uses OS soft wavetable
Internal Speaker	Yes

Proposta de Preço ITEM 3 - SUPRIMENTOS DE IMPRESSÃO (2879358) - SEI 2025.001317 / pg. 137

Technical Specifications

FINGERPRINT READER

Sensor vendor	ELAN
Sensor type	Capacitive
DPI resolution	508 DPI
Scan area	80 x 80 pixels
False Rejection Rate	< 3%
False Acceptance Rate	< 0.001%
Mobile Voltage Operation	2.7 V ~ 3.6 V
Operating Temperature	-20°C ~ 80°C (-4°F ~ 176°F)
Current Consumption Image	35 mA max
Low Latency Wait For Finger	300 uA
Capture Rate	50 frames/sec
ESD Resistance	IEC 61000-4-2 4B (+15KV)
Detection Matrix	508 dpi / 4.0 x 4.0 mm sensor area

Sensor vendor	SYNAPTICS
Sensor type	Capacitive
DPI resolution	363 DPI
Scan area	104 x 86 pixels
False Rejection Rate	< 3%
False Acceptance Rate	< 0.001%
Mobile Voltage Operation	2.7 V ~ 3.6 V
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F)
Current Consumption Image	100 mA max
Low Latency Wait For Finger	260 uA
Capture Rate	50 frames/sec
ESD Resistance	IEC 61000-4-2 4B (+15KV)
Detection Matrix	363 dpi / 7.4 x 6.0 mm sensor area

Proposta de Preço ITEM 3 - PREGÃO ELETRÔNICO SMA/TCM/CTD nº 2025.001317 / pg. 138

Technical Specifications

ENVIRONMENTAL DATA

Environmental Data	**Eco-Label Certifications & declarations**	This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks: • IT ECO declaration • US ENERGY STAR® • US Federal Energy Management Program (FEMP) • EPEAT® Gold registered in the United States. See http://www.epeat.net for registration status in your country. • TCO Certified • China Energy Conservation Program (CECP) • China State Environmental Protection Administration (SEPA) • Taiwan Green Mark • Korea Eco-label • Japan PC Green label*		
	Sustainable Impact Specifications	• Product Carbon Footprint • Ocean-bound plastic in Fan and Speaker • 20% post-consumer recycled plastic • 50% recycled metal • Low halogen • Outside Box and corrugated cushions are 100% sustainably sourced and recyclable • Molded Paper Pulp Cushion inside box is 100% sustainably sourced and recyclable. • Bulk packaging available		
	System Configuration	The configuration used for the Energy Consumption and Declared Noise Emissions data for the Notebook model is based on a “Typically Configured Notebook”.		
	Energy Consumption (in accordance with US ENERGY STAR® test method)	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 50Hz**
	Normal Operation (Sort idle)	4.12 W	4.22 W	3.93 W
	Normal Operation (Long idle)	1.11 W	1.12 W	1.02 W
	Sleep	1.11 W	1.12 W	1.02 W
	Off	0.27 W	0.28 W	0.25 W
		NOTE: Energy efficiency data listed is for an ENERGY STAR® compliant product if offered within the model family. HP computers marked with the ENERGY STAR® Logo are compliant with the applicable U.S. Environmental Protection Agency (EPA) ENERGY STAR® specifications for computers. If a model family does not offer ENERGY STAR® compliant configurations, then energy efficiency data listed is for a typically configured PC featuring a hard disk drive, a high efficiency power supply, and a Microsoft Windows® operating system.		
	Heat Dissipation*	**115VAC, 60Hz**	**230VAC, 50Hz**	**100VAC, 50Hz**
	Normal Operation (Short idle)	14.05 BTU/hr	14.39 BTU/hr	13.40 BTU/hr
	Normal Operation (Long idle)	3.79 BTU/hr	3.82 BTU/hr	3.48 BTU/hr
	Sleep	3.79 BTU/hr	3.82 BTU/hr	3.48 BTU/hr
	Off	0.92 BTU/hr	0.95 BTU/hr	0.85 BTU/hr

Proposta de Preço ITEM 3 PREGÃO ELETRÔNICO SRP/TRE-ES Nº 90/2025 2025.001317 / pg. 139

Technical Specifications

		***NOTE:** Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.		
	Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)	**Sound Power (L_{WAd}, bels)**	**Sound Pressure (L_{pAm}, decibels)**	
	Typically Configured – Idle	2.6	13.1	
	Fixed Disk – Random writes	2.9	24.7	
	Optical Drive – Sequential reads	3.9	33.8	
	Longevity and Upgrading	This product can be upgraded, possibly extending its useful life by several years. Upgradeable features and/or components contained in the Spare parts are available throughout the warranty period and or for up to “5” years after the end of production.		
	Additional Information	• This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2011/65/EC. • This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive – 2002/96/EC. • This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986). • This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see www.epeat.net • Plastics parts weighing over 25 grams used in the product are marked per ISO11469 and ISO1043. • This product is 93.0% recycle-able when properly disposed of at end of life.		
	Packaging Materials	**External:**	PAPER/Corrugated	230 g
			PAPER/Paperboard	14 g
			PAPER/Molded Pulp	140 g
		Internal:	PLASTIC/Polyethylene low density - LDPE	16 g
		The plastic packaging material contains at least 0.0% recycled content.		
		The corrugated paper packaging materials contains at least 58.0% recycled content.		
	RoHS Compliance	HP Inc. complies fully with materials regulations. We were among the first companies to extend the restrictions in the European Union (EU) Restriction of Hazardous Substances (RoHS) Directive to our products worldwide through the HP GSE. HP has contributed to the development of related legislation in Europe, as well as China, India, and Vietnam. We believe the RoHS directive and similar laws play an important role in promoting industry-wide elimination of substances of concern. We have supported the inclusion of additional substances—including PVC, BFRs, and certain phthalates—in future RoHS legislation that pertains to electrical and electronics products. We met our voluntary objective to achieve worldwide compliance with the new EU RoHS requirements for virtually all relevant products by July 2013, and we will		

Proposta de Preço ITEM 3 - SUPRIMENTOS MATRICIAIS (1879358) - SEI 2025.001317 / pg. 140

Technical Specifications

		continue to extend the scope of the commitment to include further restricted substances as regulations continue to evolve. To obtain a copy of the HP RoHS Compliance Statement, see HP RoHS position statement.
	Material Usage	This product does not contain any of the following substances in excess of regulatory limits (refer to the HP General Specification for the Environment at http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html): • Asbestos • Certain Azo Colorants • Certain Brominated Flame Retardants – may not be used as flame retardants in plastics • Cadmium • Chlorinated Hydrocarbons • Chlorinated Paraffins • Bis(2-Ethylhexyl) phthalate (DEHP) • Benzyl butyl phthalate (BBP) • Dibutyl phthalate (DBP) • Diisobutyl phthalate (DIBP) • Formaldehyde • Halogenated Diphenyl Methanes • Lead carbonates and sulfates • Lead and Lead compounds • Mercuric Oxide Batteries • Nickel – finishes must not be used on the external surface designed to be frequently handled or carried by the user. • Ozone Depleting Substances • Polybrominated Biphenyls (PBBs) • Polybrominated Biphenyl Ethers (PBBEs) • Polybrominated Biphenyl Oxides (PBBOs) • Polychlorinated Biphenyl (PCB) • Polychlorinated Terphenyls (PCT) • Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications. • Radioactive Substances • Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
	Packaging Usage	HP follows these guidelines to decrease the environmental impact of product packaging: • Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials. • Eliminate the use of ozone-depleting substances (ODS) in packaging materials. • Design packaging materials for ease of disassembly. • Maximize the use of post-consumer recycled content materials in packaging materials. • Use readily recyclable packaging materials such as paper and corrugated materials. • Reduce size and weight of packages to improve transportation fuel efficiency. • Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

Proposta de Preço ITEM 3 - SYSMAP SOLUÇÕES EIRELI (2879358) - SEI 2025.001317 / pg. 141

Technical Specifications

	End-of-life Management and Recycling	HP offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: http://www.hp.com/go/reuse-recycle or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/recyclers. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.
	HP, Inc. Corporate Environmental Information	For more information about HP's commitment to the environment: Global Citizenship Report http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html Eco-label certifications http://www8.hp.com/us/en/hp-information/environment/ecolabels.html ISO 14001 certificates: http://h20195.www2.hp.com/V2/GetDocument.aspx?docname=c04755842 and http://www.hp.com/hpinfo/globalcitizenship/environment/pdf/cert.pdf
	footnotes	• Percentage of ocean-bound plastic contained in each component varies by product • Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard. • External power supplies, WWAN modules, power cords, cables and peripherals excluded. • 100% outer box packaging and corrugated cushions made from sustainably sourced certified and recycled fibers. • Fiber cushions made from 100% recycled wood fiber and organic materials. • Disclaimer: recycled metal is expressed as a percentage of the total weight of the metal according to ISO 14021 definitions for metal parts over 25 grams.

Proposta de Preço ITEM 3 - SUPRIMENTOS DE INFORMÁTICA LTDA (2879358) - SEI 2025.001317 / pg. 142

Options and Accessories (Sold separately and availability may vary by country)

DOCKING (Sold Separately)

Docking station model #1	HP USB-C Dock G5
Total number of supported displays (incl. the notebook display)	3
Max. resolutions supported	Multi-Function Mode: (2) 5k @ 30Hz and (1) 4k UHD @ 30Hz on any port High-Resolution Mode: (2) 5k @ 60Hz on DisplayPort ports and (1) 4k UHD @ 60Hz on HDMI port
Dock Connectors	1x HDMI 2.0, 2x DisplayPort 1.4
Technical limitations	**Maximum resolution and display support is dependent on the maximum capability of the notebook.** **Highest resolution with dual displays is two 8K@ 60Hz host in High Resolution mode.** Three maximum displays supported are two 5K@ 30 Hz on DP ports plus one 4K UHD@ 30 Hz on HDMI in Multi-function mode. The highest resolution for a non-Thunderbolt host in Multi-function mode is a single 5K dual cable (using both DP ports) + (1) 4K on HDMI port.
Docking station model #2	HP Thunderbolt™ 120W G4 Dock
Total number of supported displays (incl. the notebook display)	4
Max. resolutions supported	Quad 4K @60Hz Dual 8K single cable@30 for Thunderbolt hosts or USB-C hosts DisplayPort 1.4 with Display Stream Compression in High-Resolution Mode
Dock Connectors	2 x HDMI 2.0, 1 x USB-C Alt Mode, 1 x Thunderbolt 4, 2 x DisplayPort 1.4
Technical limitations	**Maximum resolution and display support is dependent on the maximum capability of the notebook.** Thunderbolt Hosts: Maximum of (4) displays with maximum resolution of 5K@ 30Hz running Thunderbolt host. Maximum resolution possible is dual 8K displays @ 60Hz running Thunderbolt host or running a non-Thunderbolt host in high resolution mode @30Hz. Non-Thunderbolt hosts: **The highest resolution for dual displays running a non-Thunderbolt host in multi-function mode is** (1) 5K dual cable (using both DP ports) +(1) 4K on USB-C DP port. Non-Thunderbolt hosts support (3) displays with a maximum resolution of (2) 5K single cable + (1) 4K UHD @ 60 Hz in high resolution mode. In multi-function mode the maximum resolution for (3) displays is (2) 5K single cable @ 30Hz + (1) 4K UHD @ 30Hz.
Docking station model #3	HP USB-C G5 Essential Dock
Total number of supported displays (incl. the notebook display)	3
Max. resolutions supported	Multi-Function Mode: (2) 5k @ 30Hz and (1) 4k UHD @ 30Hz on any port High-Resolution Mode: (2) 5k @ 60Hz on DisplayPort ports and (1) 4k UHD @ 60Hz on HDMI port

Proposta de Preço ITEM 3 - SAMSUNG MONITOR LED - (2879358) - SEI 2025.001317 / pg. 143

Options and Accessories (Sold separately and availability may vary by country)

Dock Connectors	1x HDMI 2.0, 2x DisplayPort 1.4
Technical limitations	**Maximum resolution and display support is dependent on the maximum capability of the notebook.** **Highest resolution with dual displays is two 8K@ 60Hz host in High Resolution mode.** Three maximum displays supported are two 5K@ 30 Hz on DP ports plus one 4K UHD@ 30 Hz on HDMI in Multi-function mode The highest resolution for a non-Thunderbolt host in Multi-function mode is a single 5K dual cable (using both DP ports) + (1) 4K on HDMI port.
Docking station model #4	HP USB-C/A Universal Dock G2
Total number of supported displays (incl. the notebook display)	3
Max. resolutions supported	Multi-Function Mode: (3) 4K DCI @ 30Hz on any port High-Resolution Mode: (3) 4K DCI @ 30Hz on any port
Dock Connectors	1x HDMI 2.0, 2x DisplayPort 1.2
Technical limitations	**Maximum resolution and display support is dependent on the maximum capability of the notebook.** **The best resolution for dual or triple displays is 4K UHD@ 60Hz.** For use with the USB-A adapter that comes in the box the maximum number of displays supported is (2) 4k x 60 Hz on the Type-A Gen 1 connection from the host.

Proposta de Preço ITEM 3 - PREGÃO ELETRÔNICO SRP/MPRN/ETDVA (2879358) - SEI 2025.001317 / pg. 144

Options and Accessories (Sold separately and availability may vary by country)

Type	Description	Part Number
Adapter	HP HDMI to VGA Adapter	H4F02AA
	HP USB 3.0 to Gigabit RJ45 Adapter G2	4Z7Z7AA
	HP USB-C to DisplayPort Adapter	6M148AA
	HP USB-C to DisplayPort Adapter G2	8Y8Y1AA, 8Y8Y2AA
	HP USB-C to HDMI 2.0 Adapter	1WC36AA
	HP USB-C to RJ45 Adapter G2	4Z527AA
	HP USB-C to USB 3.0 Adapter	N2Z63AA
	HP USB-C to VGA Adapter	N9K76AA
Cases	HP Campus blue Backpack	7K0E5AA
	HP Campus green Backpack	7K0E4AA
	HP Campus XL Marble Stone Backpack	7K0E2AA
	HP Campus XL Tie Dye Backpack	7K0E3AA
	HP Prelude 15.6 Backpack	1E7D6AA, 50P32AA
	HP Prelude 15.6 Top Load	1E7D7AA, 50P31AA
	HP Prelude Pro Recycled 15.6 Backpack	1X644AA
	HP Prelude Pro Recycled 15.6 Top Load	1X645AA
	HP Renew Business 14.1 Laptop Bag	3E5F9AA
	HP Renew Business 14.1 Laptop Sleeve	3E2U7AA
	HP Renew Business 15.6 Laptop Bag	3E5F8AA
	HP Renew Business 17.3 Laptop Backpack	3E2U5AA
	HP Renew Business 17.3 Laptop Bag	3E2U6AA
	HP Renew Executive 14.1 Laptop Sleeve	6B8Y3AA
	HP Renew Executive 16 Laptop Backpack	6B8Y1AA
	HP Renew Executive 16 Laptop Bag	6B8Y2AA
	HP Travel 25 Liter 15.6 Iron Gray Laptop Backpack	6H2D8AA
	HP Travel 18 Liter 15.6 Iron Gray Laptop Backpack	6H2D9AA
Commodity	HP USB DVD-Writer External ODD	F2B56AA
	HP Nano Keyed Cable Lock	1AJ39AA
	HP Nano Master Keyed Cable Lock	1AJ40AA
	HP SureKey Standard/Nano/Wedge Cable Lock	6UW42AA
	HP Combination Nano Cable Lock	63B28AA
	HP Essential Combination Nano Cable Lock	63B31AA
Docking	HP Thunderbolt™ 120W G4 Dock	4J0A2AA
	HP USB-C™ 120W G5 Dock	5TW10AA
	HP USB-C™ G5 Essential Dock	72C71AA
	HP USB-C™/A 120W G2 Universal Dock	5TW13AA

Proposta de Preço ITEM 3 - SUPRIMENTOS DE INFORMÁTICA (1579358) - SEI 2025.001317 / pg. 145

Options and Accessories (Sold separately and availability may vary by country)

Hub	HP 4K USB-C Multiport Hub	6G843AA
	HP Universal USB-C Hub and Laptop Charger Combo	9H0H9AA
	HP Universal USB-C Multiport Hub	50H55AA
	HP USB-C to USB-A Hub	Z6A00AA
	HP USB-C Travel Hub G3	86S97AA
Keyboard/Combo	HP 655 Wireless Keyboard and Mouse Combo	4R009AA
	HP 655 Wireless Keyboard and Mouse Combo (Blk Qty.10)	4R009A6
	HP 655 Wireless Keyboard and Mouse Combo White	860P8AA
	HP Wireless Rechargeable 950MK Mouse and Keyboard	3M165AA
	HP 405 Multi-Device Backlit Wired Keyboard	7N7C1AA
	HP 455 Programmable Wireless Keyboard	4R177AA
	HP 455 Programmable Wireless Keyboard (Bulk Qty.12)	4R177A6
	HP 475 Dual-Mode Wireless Keyboard	7N7B9AA
	HP 965 black Ergonomic Wireless Keyboard	7E756AA
	HP 975 Dual-Mode USB+Bluetooth® Wireless Keyboard	3Z726AA
Mouse	HP 125 Wired Mouse	265A9AA
	HP 125 Wired Mouse (Bulk Qty.120)	265A9A6
	HP 128 Laser Wired Mouse	265D9AA
	HP 128 Laser Wired Mouse (Bulk Qty.120)	265D9A6
	HP 320M Wired Mouse	9VA80AA
	HP 425 Programmable Wireless Mouse	7M1D5AA
	HP 435 Multi-Device Wireless Mouse	3B4Q5AA
	HP 715 Rechargeable Multi-Device Bluetooth® Mouse	6E6F0AA
	HP 925 Ergonomic Vertical Wireless Mouse	6H1A5AA
	HP Creator Black 935 Wireless Mouse	1D0K8AA
	HP Multi-Device Black 635 Wireless Mouse	1D0K2AA
	HP Premium Wireless Mouse	1JR31AA
Power	HP 110W USB-C Laptop Charger	8B3Y2AA
	HP 65W GaN USB-C Laptop Charger	600Q8AA
	HP 65W USB-C Laptop Charger	671R3AA
	HP 65W USB-C LC AC Power Adapter	1P3K6AA
Video	HP USB-A 325 Webcam	53X27AA
	HP Streaming 965 Webcam	695J5AA
	HP 625 Webcam	6Y7L1AA
	HP 435 Webcam	77B10AA

Proposta de Preço ITEM 3 - PREGÃO ELETRÔNICO SRP Nº 2025.001317 / pg. 146

Change Log

Date of change:	Version History:		Description of change:
June 10, 2024	V1 to V2	Added	System unit Section
June 11, 2024	V2 to V3	Added	Display Section
June 17, 2024	V3 to V4	Added	Graphics Section
July 9, 2024	V4 to V5	Added	Display Section
July 15, 2024	V5 to V6	Updated	Weight and Dimensions Section
July 23, 2024	V6 to V7	Added	Graphics Section
August 9, 2024	V7 to V8	Updated	Graphics Section
October9, 2024	V8 to V9	Updated	Update Port Specification to: Thunderbolt™ 4
December 5, 2024	V14 to V15	Updated	UEFI version
February 18, 2025	V15 to V16	Updated	Power Section
March 6, 2025	V16 to V17	Updated	Software and Security Section

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Proposta de Preço ITEM 3 - SUPRIMENTOS MATERIAL PERMANENTE (2879358) SEI 2025.001317 / pg. 147

HP Brasil Indústria e Comércio de Equipamentos Eletrônicos Ltda.
Alameda Xingu, n.º 350, 8º andar
Alphaville Industrial, Barueri/SP
CEP: 06455-030
Brasil

declaração

Barueri, 17 de julho de 2025

Ao/À
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS

Assunto:
PREGÃO ELETRONICO 94010/2025-CPL/MP/PGJ SRP

BDI 22631

A empresa **Torino Informática Ltda**, inscrita no CNPJ **03.619.767/0001-91** sediada na RUA RITA DE CARVALHO MONTEIRO, 120, RETIRO SÃO JOÃO, SOROCABA, SP - CEP 18085-750 com filial inscrita no CNPJ **03.619.767/0005-15** situada a Avenida 600, s/n, Quadra 15, Módulo 10, Setor Industrial, TIMS, Serra, ES, CEP 29161-419, é um **PARCEIRO AUTORIZADO HP, PARA COMPRA DIRETA DE PRODUTOS DA HP**, estando apto a comercializar as linhas de produtos HP de nossa fabricação descritas abaixo.

Declaramos ainda que a TORINO INFORMÁTICA LTDA. é o parceiro de serviços do programa AMPLIFY, autorizado a prestar serviço de assistência técnica dos produtos que comercializa no telefone 0800 201-5666.

Produtos:

B20A5LS#AK4 – HP Elite Mini 800 G9 – Garantia padrão do fabricante
67V68AV#TMP – Z2 Tower G9 – Garantia padrão do fabricante
9Z0P1AV#TMP – EliteBook 640 G11 – Garantia padrão do fabricante
9A816AV#TMP – ZBook Power 16 inch G11 – Garantia padrão do fabricante

Declaramos ainda que, o produto **B20A5LS#AK4** – HP Elite Mini 800 G9:

- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;
- Informações técnicas básicas como modelo do processador, capacidade de memória instalada, capacidade e tipo do dispositivo de armazenamento, versão do sistema operacional e garantia padrão de fábrica estarão descritas na proposta comercial emitida pela CONTRADA;
- Modelo de equipamento ofertado é a mais recente geração disponibilizada pela HP com comercialização no Brasil;
- A HP disponibiliza a ferramenta HP Support Assistant que permite a verificação e instalação das últimas atualizações de todas as ferramentas e drivers disponibilizadas pela HP para o equipamento. Sendo capaz de monitorar o sistema, realizar diagnósticos, emitir alertas e ajudar a reparar erros do sistema, ajudando assim a manter a saúde e segurança do sistema. Permite verificar o status da garantia pela ferramenta;

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- Possui BIOS da HP, desenvolvida pela HP, em conformidade com a especificação minima UEFI 2.7 (http://www.uefi.org/) e capturáveis pela aplicação de inventário como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com descrição do modelo, número de série e campo de registro de número de patrimônio com extensão mínima de 15 dígitos, todos gravados em memória não volátil e sendo estas capturáveis por aplicações de inventario como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com interface gráfica com navegação utilizando mouse ou teclado, disponível em mais de 3 idiomas (por exemplo: português, espanhol, inglês etc.);
- Possui BIOS atualizável com opção de recuperação de falha, a partir de arquivo de recuperação no disco rígido ou USB externa;
- Possui BIOS com suporte à verificação de integridade, através do recurso HP Sure Start;
- As atualizações da BIOS, quando necessárias, são disponibilizadas no site da HP Inc.;
- Possui BIOS implementada em “flash ROM” atualizável diretamente pelo microcomputador, utilizando memória não volátil e reprogramável, Plug and Play, entregue na versão mais atual disponibilizada pela HP. Podendo ser atualizada por software de gerenciamento remoto;
- Possui BIOS com capacidade de habilitar / desabilitar portas USB;
- Possui BIOS com possibilidade de configuração de senhas para Power On, Administrador e unidade de armazenamento;
- Possui BIOS com suporte à tecnologia de previsão/contingenciamento de falhas de disco rígido S.M.A.R.T habilitada;
- Possui BIOS com suporte a boot por pendrive ou unidade de armazenamento externo, conectado a uma porta USB 2.0 ou superior;
- Possui BIOS compatível com o padrão mínimo ACPI 6.0. E também compatível com os padrões: DMI, SNMP, WMI, SMBIOS;
- Possui BIOS em conformidade com a normativa NIST 800-147 e NIST 800-193 (HP Sure Start);
- Possui a ferramenta HP Secure Erase integrada na BIOS, que possibilita apagar de forma definitiva e irrecuperável todos os dados da unidade de armazenamento, permitindo o descarte seguro de seus equipamentos (NIST 800-88);
- Possui BIOS com ferramenta de diagnóstico UEFI de componentes internos de hardware (processador, memória, unidade de armazenamento, áudio, teclado, rede, placa mãe, portas USB e vídeo). Acessível via BIOS ou teclas de atalho (F1...F12). A mensagem de erro é suficiente para abertura de chamado em garantia;
- Possui sistema de monitoramento de temperatura controlada pela BIOS, adequado ao processador, fonte e demais componentes internos ao gabinete;
- Possui recurso para realizar downgrade de BIOS e replicação de configurações de BIOS em escala utilizando um arquivo referência ou via Powershell;
- Possui placa mãe fabricada e desenvolvida pela HP, exclusiva para o modelo, com o nome da HP identificado na mesma;
- Possui placa mãe com capacidade de desligamento do vídeo e da unidade de armazenamento após tempo determinado pelo usuário e reiniciar por acionamento de teclado ou pela movimentação do mouse e possui função de economia de energia;
- Possui chip TPM integrado, acompanhado de drivers e a ferramenta nativa do Windows (tpm.msc) para utilização do chip e possibilitando a utilização de todos os recursos de segurança e criptografia (A ferramenta tpm.msc é fornecida com os equipamentos adquiridos com o Sistema Operacional Windows 10 / 11 Pro);
- O chipset é do mesmo fabricante do processador, com tecnologia que permite que o sistema retome rapidamente do estado de hibernação tanto para unidades de armazenamento do tipo SATA e do tipo PCIe;
- Sempre que o equipamento for inicializado, será mostrado no monitor de vídeo o nome da HP;
- Possuem os mesmos padrões de cores, sendo o preto ou cinza escuro a cor predominante e com o logotipo da HP impresso;
- Possui acabamento interno composto de superfícies não cortantes;
- O gabinete possui tratamento anticorrosivo;

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- O gabinete possui base/superfície antiderrapante;
- Possui gabinete feito em liga metálica e front bezel de ABS
- O equipamento pode funcionar na posição horizontal ou vertical.
- Possui afixado no gabinete do equipamento, o Selo Certificado de Autenticidade (COA – Certificate of Authenticity) do software Windows na versão instalada e com serial de ativação do sistema operacional gravado no BIOS, quando adquirido com o sistema operacional Windows 11 conforme descrito na proposta comercial;
- O fluxo do ar interno segue as orientações do fabricante do microprocessador;
- Possui tecnologia implementada que controle o nível de desempenho do processador automaticamente, ajustando dinamicamente a frequência e a voltagem a cada a necessidade requerida pela atividade do momento para que seja otimizada a autonomia de bateria do equipamento;
- Possui suporte a implementação de tecnologia dual-channel para a memória RAM;
- As unidades de armazenamento disponíveis para fabricação do modelo, possuem suporte à tecnologia de segurança SMART e NCQ;
- Todos os conectores das portas de entrada/saída são identificados por cores ou símbolos, de acordo com o padrão PC'99 System Design Guide;
- Possui controladora de áudio onboard, com entrada e saída de áudio estéreo (combo jack), capaz de reproduzir os sons gerados pelo sistema (como músicas e beeps de alerta de diagnósticos), e está conectado diretamente a placa mãe sem uso de adaptadores, com suporte a 16bits;
- O sistema de áudio onboard possui a possibilidade de desativação por software ou automaticamente quando houver conexão com a caixa de som ou fone de ouvido;
- Possui controladora de vídeo integrada, com suporte a múltiplos monitores (mínimo de 2) onde para maiores quantidades estará descrito na proposta comercial emitida pela CONTRATADA. Os monitores podem operar simultaneamente, de forma estendida ou espelhada
- Possui controladora de vídeo integrada com capacidade de alocar no mínimo 1.5GB de memória de vídeo, compartilhada de forma dinâmica com a memória RAM. Possui suporte para DirectX 12 e Open GL 4.5 e compatibilidade do driver com o padrão WDDM (Windows Display Driver Model);
- Possui controladora de rede Gigabit Ethernet 10/100/1000 Mbps com reconhecimento automático da velocidade da rede, com capacidade de operar no modo full-duplex, autosense, plug and play, com suporte ao protocolo SNMP, totalmente configurável por software, com suporte a VLAN, com suporte a PXE 2.1 e com função Wake-On-Lan instalada e em funcionamento. Com conector RJ-45 com LEDs de diagnostico;
- Possui interface de comunicação wireless integrada desde que a CONTRATADA incluía este item na proposta comercial. Esta placa wireless tem suporte aos padrões 802.11ax, 802.11ac, 802.11a, 802.11b, 802.11g e 802.11n, com suporte aos protocolos 802.11i (WLAN security, TKIP e AES), WPA, WPA2, WEP 64 e 128, IEEE 802.11 (Wired Equivalent Privacy), IEEE 802.1x. Com certificado de homologação válido da ANATEL, e no Wi-fi Certified Aliance. O ajuste da potência é de acordo com a recepção do sinal, de forma a proporcionar economia de bateria;
- Possui teclado da HP, desde que a CONTRATADA inclua este item na proposta comercial. Teclado HP com com todos os caracteres da língua portuguesa incluindo Ç, com teclado numérico embutido, com teclas Windows Logo (acesso ao menu iniciar), com LEDs indicativos de “caps lock” e “num lock”. A impressão sobre as teclas é do tipo permanente, não apresentando desgaste por abrasão ou uso prolongado. Possui sistema de proteção contra derramamento acidental de pequenas quantidades de líquidos. Possui sistema para ajuste de inclinação e cabo USB de no mínimo 1.5m. Não possui teclas dedicadas de funções multimedia, desligar, hibernar ou standby.
- Possui mouse óptico da HP, desde que a CONTRATADA incluía este item na proposta comercial. Mouse HP com conector USB, cabo com comprimento mínimo de 1.8m, com resolução de 1000dpi, com 03 botões (esquerdo, direito e central próprio para rolagem (scrol)), formato ergonômico e de conformação ambidestra;
- Fonte externo com ajuste automático 100~240v / 50-60Hz (bivolt), suficiente para suportar todas as configurações do equipamento conforme as especificações técnicas contidas no catálogo técnico do mesmo, permitindo o funcionamento por no mínimo 10 horas por dia e 5 dias por semana;

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- Possui cabo de energia para a fonte de alimentação de acordo com o novo padrão ABNT (NBR 14136), com comprimento minimo de 1,5m (total fonte mais cabo de energia);

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- Todos os componentes do produto são novos (sem uso, reforma ou recondicionamento) e estão em linha de fabricação;
- Pertence a linha corporativa da HP;
- A HP possui programas de Logística Reversa (https://www.hp.com/br-pt/hp-information/sustainable-impact/planet-product-recycling.html);
- São bens constituídos em parte, por material reciclado, atóxico, biodegradável e atendem a diretiva RoHS;
- Todos os itens e seus acessórios são novos, não recondicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, frisagens, furações, fitas adesivas, marcas, falhas de fabricação ou qualquer outro procedimento ou emprego de materiais inadequados que adaptem forçadamente o equipamento ou suas partes que sejam fisicamente ou logicamente incompatíveis;
- As unidades dos equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, utilizando sempre que possível de materiais recicláveis, de forma a garantir a máxima proteção durante o transporte e a armazenagem;
- Cada equipamento possui um número de série único, afixado em local visível em etiqueta de difícil remoção ou impresso a laser, constando a marca, o modelo e o número de série do equipamento e também na embalagem;
- A HP possui pagina na Internet no qual pelo número de série é possível verificar o início e fim do período de garantia do equipamento;
- Os drivers, softwares e sistema operacional fornecido com o equipamento da HP estão disponíveis para download no site da HP, permitindo a instalação e recuperação do sistema operacional ao padrão de fábrica.
- A HP disponibiliza a ferramenta HP Cloud Recovery que permite realizar o download dos Drivers e do Sistema Operacional de forma automatizada para gerar pendrive de reinstalação;
- É disponibilizada documentação técnica necessária à instalação e operação do equipamento em português;
- A HP Disponibiliza “Central de atendimento telefônico” com número de telefone 0800 ou Whatsapp para abertura de chamado, em dias úteis, (segunda-feira a sexta-feira), em horário comercial (das 8h às18h) e “Central de atendimento via sistema web” para abertura de chamado 24x07, (domingo a domingo), a qualquer horário (das 00:00h às 23:59h);
- A HP Mantém os registros dos chamados que foram abertos, mantendo as informações que foram registradas sobre o mesmo;
- A ferramenta Web de abertura de chamados da HP permite que o cliente a visualize e acompanhe os chamados abertos anteriormente;
- Possui garantia padrão de fábrica de 01 ano para reposição de peças, mão de obra, com atendimento "on-site", conforme descrito na proposta comercial emitida pela CONTRATADA;
- Permite a extensão de garantia para 03, 04 ou 05 anos para reposição de peças, mão de obra, para o monitor, com atendimento do tipo "on-site" através de aquisição da CONTRADA de carepack de extensão de garantia, devendo descrever em sua proposta comercial a descrição da extensão da garantia (HP Carepack);
- A assistência técnica “on-site” será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;
- Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa, salvo quando o defeito for provocado por uso inadequado dos equipamentos;
- Certificado de Garantia é válido em todo o território nacional;
- Abertura do equipamento para limpeza, adição de memória ou SSD pela CONTRATANTE não implicará em perca da garantia desde que não cause mau uso. A garantia da HP não cobrirá o suporte destas peças.

Declaramos ainda que, o produto **67V68AV#TMP** – Z2 Tower G9:

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- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará

as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;

- Informações técnicas básicas como modelo do processador, capacidade de memória instalada, capacidade e tipo do dispositivo de armazenamento, versão do sistema operacional e garantia padrão de fábrica estarão descritas na proposta comercial emitida pela CONTRADA;
- Modelo de equipamento ofertado é a mais recente geração disponibilizada pela HP com comercialização no Brasil;
- A HP disponibiliza a ferramenta HP Support Assistant que permite a verificação e instalação das últimas atualizações de todas as ferramentas e drivers disponibilizadas pela HP para o equipamento. Sendo capaz de monitorar o sistema, realizar diagnósticos, emitir alertas e ajudar a reparar erros do sistema, ajudando assim a manter a saúde e segurança do sistema. Permite verificar o status da garantia pela ferramenta;
- Possui BIOS da HP, desenvolvida pela HP, em conformidade com a especificação minima UEFI 2.7 (http://www.uefi.org/) e capturáveis pela aplicação de inventário como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com descrição do modelo, número de série e função de registro de número de patrimônio com extensão mínima de 15 dígitos, todos gravados em memória não volátil e sendo estas capturáveis por aplicações de inventario como por exemplo SCCM, Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com interface gráfica com navegação utilizando mouse ou teclado, disponível em mais de 3 idiomas (por exemplo: portugues, espanhol, inglês etc.);
- Possui BIOS atualizável com opção de recuperação de falha, a partir de arquivo de recuperação no disco rígido ou USB externa;
- Possui BIOS com suporte à verificação de integridade, através do recurso HP Sure Start;
- As atualizações da BIOS, quando necessárias, são disponibilizadas no site da HP Inc., com atualização via download na internet diretamente na interface de configuração da BIOS também;
- Possui BIOS implementada em “flash ROM” atualizável diretamente pelo microcomputador, utilizando memória não volátil e reprogramável, Plug and Play, entregue na versão mais atual disponibilizada pela HP. Podendo ser atualizada por software de gerenciamento remoto;
- Possui BIOS com capacidade de habilitar / desabilitar portas USB;
- Possui BIOS com possibilidade de configuração de senhas para Power On, Administrador e unidade de armazenamento;
- Possui BIOS com suporte à tecnologia de previsão/contingenciamento de falhas de disco rígido S.M.A.R.T habilitada;
- Possui BIOS com suporte a boot por pendrive ou unidade de armazenamento externo, conectado a uma porta USB 2.0 ou superior;
- Possui BIOS compatível com o padrão minimo ACPI 6.0, E também compatível com os padrões: DMI, SNMP, WMI e SMBIOS;
- Possui BIOS em conformidade com a normativa NIST 800-147 e NIST 800-193 (HP Sure Start);
- Possui a ferramenta HP Secure Erase integrada na BIOS, que possibilita apagar de forma definitiva e irrecuperável todos os dados da unidade de armazenamento, permitindo o descarte seguro de seus equipamentos (NIST 800-88);
- Possui BIOS com ferramenta de diagnóstico UEFI de componentes internos de hardware (processador, memória, unidade de armazenamento, áudio, teclado, rede, placa mãe, portas USB e vídeo). Acessível via BIOS ou teclas de atalho (F1...F12). A mensagem de erro é suficiente para abertura de chamado em garantia;
- Possui sistema de monitoramento de temperatura controlada pela BIOS, adequado ao processador, fonte e demais componentes internos ao gabinete;
- Possui recurso para realizar downgrade de BIOS e replicação de configurações de BIOS em escala utilizando um arquivo referência ou via Powershell;
- Possui placa mãe fabricada e desenvolvida pela HP, exclusiva para o modelo, com o nome da HP identificado na mesma;

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- Possui placa mãe com capacidade de desligamento do vídeo e da unidade de armazenamento após tempo determinado pelo usuário e reiniciar por acionamento de teclado ou pela movimentação do mouse e possui função de economia de energia;
- Possui chip TPM integrado, acompanhado de drivers e a ferramenta nativa do Windows (tpm.msc) para utilização do chip e possibilitando a utilização de todos os recursos de segurança e criptografia (A ferramenta tpm.msc é fornecida com os equipamentos adquiridos com o Sistema Operacional Windows 10 / 11 Pro);
- O chipset é do mesmo fabricante do processador, com tecnologia que permite que o sistema retome rapidamente do estado de hibernação tanto para unidades de armazenamento do tipo SATA e do tipo PCIe;
- Sempre que o equipamento for inicializado, será mostrado no monitor de vídeo o nome da HP;
- Possuem os mesmos padrões de cores, sendo o preto ou cinza escuro a cor predominante e com o logotipo da HP impresso;
- Possui acabamento interno composto de superfícies não cortantes;
- O gabinete possui tratamento anticorrosivo;
- O gabinete possui base/superfície antiderrapante;
- Possui gabinete feito em liga metálica e front bezel de ABS
- O equipamento pode funcionar na posição horizontal ou vertical.
- Possui afixado no gabinete do equipamento, o Selo Certificado de Autenticidade (COA – Certificate of Authenticity) do software Windows na versão instalada e com serial de ativação do sistema operacional gravado no BIOS, quando adquirido com o sistema operacional Windows 11 conforme descrito na proposta comercial;
- O fluxo do ar interno segue as orientações do fabricante do microprocessador;
- Possui processador da geração mais recente fabricada pela HP no Brasil para este modelo de desktop de uso corporativo;
- Possui tecnologia implementada que controle o nível de desempenho do processador automaticamente, ajustando dinamicamente a frequência e a voltagem a cada a necessidade requerida pela atividade do momento para que seja otimizada a autonomia de bateria do equipamento;
- Possui suporte a implementação de tecnologia dual-channel para a memória RAM;
- As unidades de armazenamento disponíveis para fabricação do modelo, possuem suporte à tecnologia de segurança SMART e NCQ;
- Todos os conectores das portas de entrada/saída são identificados por cores ou símbolos, de acordo com o padrão PC'99 System Design Guide;
- Possui controladora de áudio onboard, com entrada e saída de áudio estéreo (combo jack), capaz de reproduzir os sons gerados pelo sistema (como músicas e beeps de alerta de diagnósticos), e está conectado diretamente a placa mãe sem uso de adaptadores, com suporte a 16bits;
- O sistema de áudio onboard possui a possibilidade de desativação por software ou automaticamente quando houver conexão com a caixa de som ou fone de ouvido;
- Possui controladora de rede Gigabit Ethernet 10/100/1000 Mbps com reconhecimento automático da velocidade da rede, com capacidade de operar no modo full-duplex, autosense, plug and play, com suporte ao protocolo SNMP, totalmente configurável por software, com suporte a VLAN, com suporte a PXE 2.1 e com função Wake-On-Lan instalada e em funcionamento. Com conector RJ-45 com LEDs de diagnostico;
- Possui interface de comunicação wireless integrada desde que a CONTRATADA incluía este item na proposta comercial. Esta placa wireless tem suporte aos padrões 802.11ax, 802.11ac, 802.11a, 802.11b, 802.11g e 802.11n, com suporte aos protocolos 802.11i (WLAN security, TKIP e AES), WPA, WPA2, WEP 64 e 128, IEEE 802.11 (Wired Equivalent Privacy), IEEE 802.1x. Com certificado de homologação válido da ANATEL, e no Wi-fi Certified Aliance. O ajuste da potência é de acordo com a recepção do sinal, de forma a proporcionar economia de bateria;
- Possui teclado da HP, desde que a CONTRATADA inclua este item na proposta comercial. Teclado HP com com todos os caracteres da língua portuguesa incluindo Ç, com teclado numérico embutido, com teclas Windows Logo (acesso ao menu iniciar), com LEDs indicativos de “caps lock” e “num lock”. A impressão sobre as teclas é do tipo permanente, não apresentando desgaste por abrasão ou uso prolongado. Possui sistema de proteção contra derramamento acidental de

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pequenas quantidades de líquidos. Possui sistema para ajuste de inclinação e cabo USB de no mínimo 1.5m. Não possui teclas dedicadas de funções multimedia, desligar, hibernar ou standby.

- Possui mouse óptico da HP, desde que a CONTRATADA incluía este item na proposta comercial. Mouse HP com conector USB, cabo com comprimento mínimo de 1.8m, com resolução de 1000dpi, com 03 botões (esquerdo, direito e central próprio para rolagem (scrol)), formato ergonômico e de conformação ambidestra;
- Fonte externo com ajuste automático 100~240v / 50-60Hz (bivolt), suficiente para suportar todas as configurações do equipamento conforme as especificações técnicas contidas no catálogo técnico do mesmo, permitindo o funcionamento por no mínimo 10 horas por dia e 5 dias por semana;
- Possui cabo de energia para a fonte de alimentação de acordo com o novo padrão ABNT (NBR 14136), com comprimento total de no minimo 1.5m;
- Todos os componentes do produto são novos (sem uso, reforma ou recondicionamento) e estão em linha de fabricação;
- Pertence a linha corporativa da HP;
- A HP possui programas de Logística Reversa (https://www.hp.com/br-pt/hp-information/sustainable-impact/planet-product-recycling.html);
- São bens constituídos em parte, por material reciclado, atóxico, biodegradável e atendem a diretiva RoHS;
- Todos os itens e seus acessórios são novos, não recondicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, frisagens, furações, fitas adesivas, marcas, falhas de fabricação ou qualquer outro procedimento ou emprego de materiais inadequados que adaptem forçadamente o equipamento ou suas partes que sejam fisicamente ou logicamente incompatíveis;
- As unidades dos equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, utilizando sempre que possível de materiais recicláveis, de forma a garantir a máxima proteção durante o transporte e a armazenagem;
- Cada equipamento possui um número de série único, afixado em local visível em etiqueta de difícil remoção ou impresso a laser, constando a marca, o modelo e o número de série do equipamento e também na embalagem;
- A HP possui pagina na Internet no qual pelo número de série é possível verificar o início e fim do período de garantia do equipamento;
- Os drivers, softwares e sistema operacional fornecido com o equipamento da HP estão disponíveis para download no site da HP, permitindo a instalação e recuperação do sistema operacional ao padrão de fábrica.
- A HP disponibiliza a ferramenta HP Cloud Recovery que permite realizar o download dos Drivers e do Sistema Operacional de forma automatizada para gerar pendrive de reinstalação;
- É disponibilizada documentação técnica necessária à instalação e operação do equipamento em português;
- A HP Disponibiliza “Central de atendimento telefônico” com número de telefone 0800 ou Whatsapp para abertura de chamado, em dias úteis, (segunda-feira a sexta-feira), em horário comercial (das 8h às18h) e “Central de atendimento via sistema web” para abertura de chamado 24x07, (domingo a domingo), a qualquer horário (das 00:00h às 23:59h);
- A HP Mantém os registros dos chamados que foram abertos, mantendo as informações que foram registradas sobre o mesmo;
- A ferramenta Web de abertura de chamados da HP permite que o cliente a visualize e acompanhe os chamados abertos anteriormente;
- Possui garantia padrão de fábrica de 01 ano para reposição de peças, mão de obra, com atendimento "on-site", conforme descrito na proposta comercial emitida pela CONTRATADA;
- Permite a extensão de garantia para 03, 04 ou 05 anos para reposição de peças, mão de obra, para o monitor, com atendimento do tipo "on-site" através de aquisição da CONTRADA de carepack de extensão de garantia, devendo descrever em sua proposta comercial a descrição da extensão da garantia (HP Carepack);
- A assistência técnica “on-site” será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;

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- Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa, salvo quando o defeito for provocado por uso inadequado dos equipamentos;
- Certificado de Garantia é válido em todo o território nacional;
- Abertura do equipamento para limpeza, adição de memória ou SSD pela CONTRATANTE não implicará em perca da garantia desde que não cause mau uso. A garantia da HP não cobrirá o suporte destas peças.

Declaramos ainda que, o produto **9Z0P1AV#TMP** – EliteBook 640 G11:

- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;
- Informações técnicas básicas como modelo do processador, capacidade de memória instalada, capacidade e tipo do dispositivo de armazenamento, versão do sistema operacional, tamanho da tela do notebook e garantia padrão de fábrica estarão descritas na proposta comercial emitida pela CONTRADA;
- Modelo de equipamento ofertado é a mais recente geração disponibilizada pela HP com comercialização no Brasil;
- A HP disponibiliza a ferramenta HP Support Assistant que permite a verificação e instalação das últimas atualizações de todas as ferramentas e drivers disponibilizadas pela HP para o equipamento. Sendo capaz de monitorar o sistema, realizar diagnósticos, emitir alertas e ajudar a reparar erros do sistema, ajudando assim a manter a saúde e segurança do sistema. Permite verificar o status da garantia pela ferramenta;
- Possui BIOS da HP, desenvolvida pela HP, em conformidade com a especificação minima UEFI 2.7 (http://www.uefi.org/) e capturáveis pela aplicação de inventário como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com descrição do modelo, número de série e campo de registro de número de patrimônio com extensão mínima de 15 digitos, todos gravados em memória não volátil e sendo estas capituraveis por aplicações de inventario como por exemplo SCCM, Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com interface gráfica com navegação utilizando mouse ou teclado, disponível em mais de 3 idiomas (por exemplo: português, espanhol, inglês etc.);
- Possui BIOS atualizável com opção de recuperação de falha, a partir de arquivo de recuperação no disco rígido ou USB externa;
- Possui BIOS com suporte à verificação de integridade, através do recurso Hp Sure Start;
- As atualizações da BIOS, quando necessárias, são disponibilizadas no site da HP Inc., com atualização via download na internet diretamente na interface de configuração da BIOS também;
- Possui BIOS implementada em “flash ROM” atualizável diretamente pelo microcomputador, utilizando memória não volátil e reprogramável, Plug and Play, entregue na versão mais atual disponibilizada pela HP. Podendo ser atualizada por software de gerenciamento remoto;
- Possui BIOS com capacidade de habilitar / desabilitar portas USB, webcam, microfone, WiFi;
- Possui BIOS com possibilidade de configuração de senhas de Setup para Power On, Administrador e unidade de armazenamento;
- Possui BIOS com suporte à tecnologia de previsão/contingenciamento de falhas de disco rígido S.M.A.R.T habilitada;
- Possui BIOS com suporte a boot por pendrive ou unidade de armazenamento externo, conectado a uma porta USB 2.0 ou superior;
- Possui BIOS compatível com o padrão mínimo ACPI 6.0. E também compatível com os padrões: DMI, SNMP, WMI, SMBIOS;
- Possui BIOS em conformidade com a normativa NIST 800-147 e NIST 800-193 (HP Sure Start);

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- Possui a ferramenta HP Secure Erase integrada na BIOS, que possibilita apagar de forma definitiva e irrecuperável todos os dados da unidade de armazenamento, permitindo o descarte seguro de seus equipamentos (NIST 800-88);
- Possui BIOS com ferramenta de diagnóstico UEFI de componentes internos de hardware (processador, memória, unidade de armazenamento, áudio, teclado, rede, placa mae, portas USB e vídeo). Acessivel via BIOS ou teclas de atalho (F1...F12). A mensagem de erro é suficiente para abertura de chamado em garantia;
- Possui sistema de monitoramento de temperatura controlada pela BIOS, adequado ao processador, fonte e demais componentes internos ao gabinete;
- Possui recurso para realizar downgrade de BIOS e replicação de configurações de BIOS em escala utilizando um arquivo referencia ou via Powershell;
- Possui placa mãe fabricada e desenvolvida pela HP, exclusiva para o modelo, com o nome da HP identificado na mesma;
- Possui placa mãe com capacidade de desligamento do vídeo e da unidade de armazenamento após tempo determinado pelo usuário e reiniciar por acionamento de teclado ou pela movimentação do mouse e possui função de economia de energia;
- Possui chip TPM integrado, acompanhado de drivers e a ferramenta nativa do Windows (tpm.msc) para utilização do chip e possibilitando a utilização de todos os recursos de segurança e criptografia (A ferramenta tpm.msc é fornecida com os equipamentos adquiridos com o Sistema Operacional Windows 10 / 11 Pro);
- O chipset é do mesmo fabricante do processador, com tecnologia que permite que o sistema retome rapidamente do estado de hibernação tanto para unidades de armazenamento do tipo SATA e do tipo PCIe;
- Sempre que o equipamento for inicializado, será mostrado no monitor de vídeo o nome da HP;
- Possuem os mesmos padrões de cores, sendo a prata ou cinza escuro a cor predominante e com o logotipo da HP impresso;
- Possui acabamento interno composto de superfícies não cortantes;
- O gabinete possui tratamento anticorrosivo;
- O gabinete possui base/superfície antiderrapante;
- Possui gabinete feito em liga metálica de alumínio e dobradiças em liga metálica para maior resistência.
- Possui afixado no gabinete do equipamento, o Selo Certificado de Autenticidade (COA – Certificate of Authenticity) do software Windows na versão instalada e com serial de ativação do sistema operacional gravado no BIOS, quando adquirido com o sistema operacional Windows 11, conforme descrito na proposta comercial;
- O fluxo do ar interno segue as orientações do fabricante do microprocessador;
- Possui processador da geração mais recente fabricada pela HP no Brasil para este modelo de notebook de uso corporativo;
- Possui tecnologia implementada que controle o nível de desempenho do processador automaticamente, ajustando dinamicamente a frequência e a voltagem a cada a necessidade requerida pela atividade do momento para que seja otimizada a autonomia de bateria do equipamento;
- Possui suporte a implementação de tecnologia dual-channel para a memória RAM;
- As unidades de armazenamento disponíveis para fabricação do modelo, possuem suporte à tecnologia de segurança SMART e NCQ;
- Todos os conectores das portas de entrada/saída são identificados por cores ou símbolos, de acordo com o padrão PC'99 System Design Guide;
- Possui controladora de áudio onboard, com entrada e saída de áudio estéreo (combo jack), capaz de reproduzir os sons gerados pelo sistema (como musicas e beeps de alerta de diagnósticos), e está conectado diretamente a placa mãe sem uso de adaptadores, com suporte a 16bits;
- O sistema de áudio onboard possui a possibilidade de desativação por software ou automaticamente quando houver conexão com a caixa de som ou fone de ouvido;
- Possui controladora de vídeo integrada, com suporte a até 03 monitores simultaneamente (terceiro monitor através da porta USB tipo C), de forma estendida ou espelhada, com capacidade de alocar

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no mínimo 1.5GB de memória de vídeo, compartilhada de forma dinâmica com a memória RAM. Possui suporte para DirectX 12 e Open GL 4.5 e compatibilidade do driver com o padrão WDDM (Windows Display Driver Model);

- Possui controladora de rede Gigabit Ethernet 10/100/1000 Mbps com reconhecimento automático da velocidade da rede, com capacidade de operar no modo full-duplex, autosense, plug and play, com suporte ao protocolo SNMP, totalmente configurável por software, com suporte a VLAN, com suporte a PXE 2.1 e com função Wake-On-Lan instalada e em funcionamento. Com conector RJ-45 com LEDs de diagnostico;
- Possui interface de comunicação wireless integrada, com suporte aos padrões 802.11ax, 802.11ac, 802.11a, 802.11b, 802.11g e 802.11n, com suporte aos protocolos 802.11i (WLAN security, TKIP e AES), WPA, WPA2, WEP 64 e 128, IEEE 802.11 (Wired Equivalent Privacy), IEEE 802.1x. Com certificado de homologação válido da ANATEL, e no Wi-fi Certified Aliance. O ajuste da potência é de acordo com a recepção do sinal, de forma a proporcionar economia de bateria;
- Possui teclado da HP integrado, com todos os caracteres da língua portuguesa incluindo ç, com 83 teclas, com teclado numérico embutido na fileira superior, com teclas Windows Logo (acesso ao menu iniciar), com LEDs indicativos de “caps lock”. A impressão sobre as teclas é do tipo permanente, não apresentando desgaste por abrasão ou uso prolongado e com sistema de proteção contra derramamento acidental de líquidos;
- Possui dispositivo apontador integrado, do tipo “touchpad”, integrado no gabinete, com dois botões integrados e uma área para a função “scroll” (botão de rolagem), com suporte a múltiplos gestos tais como pinça e zoom;
- Fonte externo com ajuste automático 100~240v (bivolt), suficiente para suportar todas as configurações do equipamento conforme as especificações técnicas contidas no catálogo técnico do mesmo, permitindo o funcionamento por no mínimo 10 horas por dia e 5 dias por semana;
- Possui cabo de energia para a fonte de alimentação de acordo com o novo padrão ABNT (NBR 14136), com comprimento minimo de 1,5m (total fonte mais cabo de energia);
- Todos os componentes do produto são novos (sem uso, reforma ou recondicionamento) e estão em linha de fabricação;
- Pertence a linha corporativa da HP;
- A HP possui programas de Logística Reversa (https://www.hp.com/br-pt/hp-information/sustainable-impact/planet-product-recycling.html);
- São bens constituídos em parte, por material reciclado, atóxico, biodegradável e atendem a diretiva RoHS;
- Todos os itens e seus acessórios são novos, não recondicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, frisagens, furações, fitas adesivas, marcas, falhas de fabricação ou qualquer outro procedimento ou emprego de materiais inadequados que adaptem forçadamente o equipamento ou suas partes que sejam fisicamente ou logicamente incompatíveis;
- As unidades dos equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, utilizando sempre que possível de materiais recicláveis, de forma a garantir a máxima proteção durante o transporte e a armazenagem;
- Cada equipamento possui um número de série único, afixado em local visível em etiqueta de difícil remoção ou impresso a laser, constando a marca, o modelo e o número de série do equipamento e também na embalagem;
- A HP possui página na Internet no qual pelo número de série é possível verificar o início e fim do período de garantia do equipamento;
- Os drivers, softwares e sistema operacional fornecido com o equipamento da HP estão disponíveis para download no site da HP, permitindo a instalação e recuperação do sistema operacional ao padrão de fábrica.
- A HP disponibiliza a ferramenta HP Cloud Recovery que permite realizar o download dos Drivers e do Sistema Operacional de forma automatizada para gerar pendrive de reinstalaçao;
- É disponibilizada documentação técnica necessária à instalação e operação do equipamento em português;
- A HP Disponibiliza “Central de atendimento telefônico” com número de telefone 0800 ou Whatsapp para abertura de chamado, em dias úteis, (segunda-feira a sexta-feira), em horário

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comercial (das 8h às18h) e “Central de atendimento via sistema web” para abertura de chamado 24x07, (domingo a domingo), a qualquer horário (das 00:00h às 23:59h);

- A HP Mantém os registros dos chamados que foram abertos, mantendo as informações que foram registradas sobre o mesmo;
- A ferramenta Web de abertura de chamados da HP permite que o cliente a visualize e acompanhe os chamados abertos anteriormente;
- Possui garantia padrão de fábrica de 01 ano para reposição de peças, mão de obra, com atendimento "on-site", conforme descrito na proposta comercial emitida pela CONTRATADA;
- Permite a extensão de garantia para 03, 04 ou 05 anos para reposição de peças, mão de obra, com atendimento do tipo "on-site" através de aquisição da CONTRADA de carepack de extensão de garantia, devendo descrever em sua proposta comercial a descrição da extensão da garantia (HP Carepack);
- A assistência técnica “on-site” será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;
- Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa, salvo quando o defeito for provocado por uso inadequado dos equipamentos;
- Certificado de Garantia é válido em todo o território nacional;
- Abertura do equipamento para limpeza, adição de memória ou SSD pela CONTRATANTE não implicará em perca da garantia desde que não cause mau uso. A garantia da HP não cobrirá o suporte destas peças.

Declaramos ainda que, o produto **9A816AV#TMP** – ZBook Power 16 inch G11:

- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;
- Informações técnicas básicas como modelo do processador, capacidade de memória instalada, capacidade e tipo do dispositivo de armazenamento, versão do sistema operacional, tamanho e especificação da tela do notebook e garantia padrão de fábrica estarão descritas na proposta comercial emitida pela CONTRADA;
- Modelo de equipamento ofertado é a mais recente geração disponibilizada pela HP com comercialização no Brasil;
- A HP disponibiliza a ferramenta HP Support Assistant que permite a verificação e instalação das últimas atualizações de todas as ferramentas e drivers disponibilizadas pela HP para o equipamento. Sendo capaz de monitorar o sistema, realizar diagnósticos, emitir alertas e ajudar a reparar erros do sistema, ajudando assim a manter a saúde e segurança do sistema. Permite verificar o status da garantia pela ferramenta;
- Possui BIOS da HP, desenvolvida pela HP, em conformidade com a especificação mínima UEFI 2.7 (http://www.uefi.org/) e capturáveis pela aplicação de inventário como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com descrição do modelo, número de série e campo de registro de número de patrimônio com extensão mínima de 15 dígitos, todos gravados em memória não volátil e sendo estas capturáveis por aplicações de inventario como por exemplo Microsoft End Point manager, SCCM, Landesk, etc;
- Possui BIOS com interface gráfica com navegação utilizando mouse ou teclado, disponível em mais de 3 idiomas (por exemplo: português, espanhol, inglês etc.);
- Possui BIOS atualizável com opção de recuperação de falha, a partir de arquivo de recuperação no disco rígido ou USB externa;
- Possui BIOS com suporte à verificação de integridade, através do recurso HP Sure Start;
- As atualizações da BIOS, quando necessárias, são disponibilizadas no site da HP Inc., com atualização via download na internet diretamente na interface de configuração da BIOS também;

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- Possui BIOS implementada em “flash ROM” atualizável diretamente pelo microcomputador, utilizando memória não volátil e reprogramável, Plug and Play, entregue na versão mais atual disponibilizada pela HP. Podendo ser atualizada por software de gerenciamento remoto;
- Possui BIOS com capacidade de habilitar / desabilitar portas USB, webcam, microfone, WiFi;
- Possui BIOS com possibilidade de configuração de senhas para Power On, Administrador e unidade de armazenamento;
- Possui BIOS com suporte à tecnologia de previsão/contingenciamento de falhas de disco rígido S.M.A.R.T habilitada;
- Possui BIOS com suporte a boot por pendrive ou unidade de armazenamento externo, conectado a uma porta USB 2.0 ou superior;
- Possui BIOS compatível com o padrão ACPI 6.0. E também compatível com os padrões: DMI, SNMP, SMBIOS;
- Possui BIOS em conformidade com a normativa NIST 800-147 e NIST 800-193 (HP Sure Start);
- Possui a ferramenta HP Secure Erase integrada na BIOS, que possibilita apagar de forma definitiva e irrecuperável todos os dados da unidade de armazenamento, permitindo o descarte seguro de seus equipamentos (NIST 800-88);
- Possui BIOS com ferramenta de diagnóstico UEFI de componentes internos de hardware (processador, memória, unidade de armazenamento, áudio, teclado, rede, placa mãe, portas USB e vídeo). Acessível via BIOS ou teclas de atalho (F1...F12). A mensagem de erro é suficiente para abertura de chamado em garantia;
- Possui sistema de monitoramento de temperatura controlada pela BIOS, adequado ao processador, fonte e demais componentes internos ao gabinete;
- Possui recurso para realizar downgrade de BIOS e replicação de configurações de BIOS em escala utilizando um arquivo referência ou via Powershell;
- Possui placa mãe fabricada e desenvolvida pela HP, exclusiva para o modelo, com o nome da HP identificado na mesma;
- Possui placa mãe com capacidade de desligamento do vídeo e da unidade de armazenamento após tempo determinado pelo usuário e reiniciar por acionamento de teclado ou pela movimentação do mouse e possui função de economia de energia;
- Possui chip TPM integrado, acompanhado de drivers e a ferramenta nativa do Windows (tpm.msc) para utilização do chip e possibilitando a utilização de todos os recursos de segurança e criptografia (A ferramenta tpm.msc é fornecida com os equipamentos adquiridos com o Sistema Operacional Windows 10 / 11 Pro);
- O chipset é do mesmo fabricante do processador, com tecnologia que permite que o sistema retome rapidamente do estado de hibernação tanto para unidades de armazenamento do tipo SATA e do tipo PCIe;
- Sempre que o equipamento for inicializado, será mostrado no monitor de vídeo o nome da HP;
- Possuem os mesmos padrões de cores, sendo o prata ou cinza escuro a cor predominante e com o logotipo da HP impresso;
- Possui acabamento interno composto de superfícies não cortantes;
- O gabinete possui tratamento anticorrosivo;
- O gabinete possui base/superfície antiderrapante;
- Possui gabinete feito em liga metálica e dobradiças em liga metálica para maior resistência.
- Possui afixado no gabinete do equipamento, o Selo Certificado de Autenticidade (COA – Certificate of Authenticity) do software Windows na versão instalada e com serial de ativação do sistema operacional gravado no BIOS, quando adquirido com o sistema operacional Windows 11, conforme descrito na proposta comercial;
- O fluxo do ar interno segue as orientações do fabricante do microprocessador;
- Possui processador da geração mais recente fabricada pela HP no Brasil para este modelo de notebook de uso corporativo;
- Possui tecnologia implementada que controle o nível de desempenho do processador automaticamente, ajustando dinamicamente a frequência e a voltagem a cada a necessidade requerida pela atividade do momento para que seja otimizada a autonomia de bateria do equipamento;

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- Possui suporte a implementação de tecnologia dual-channel para a memória RAM;
- As unidades de armazenamento disponíveis para fabricação do modelo, possuem suporte à tecnologia de segurança SMART e NCQ;
- Todos os conectores das portas de entrada/saída são identificados por cores ou símbolos, de acordo com o padrão PC'99 System Design Guide;
- Possui controladora de áudio onboard, com entrada e saída de áudio estéreo (combo jack), capaz de reproduzir os sons gerados pelo sistema (como músicas e beeps de alerta de diagnósticos), e está conectado diretamente a placa mãe sem uso de adaptadores, com suporte a 16bits;
- O sistema de áudio onboard possui a possibilidade de desativação por software ou automaticamente quando houver conexão com a caixa de som ou fone de ouvido;
- Possui controladora de vídeo integrada ou dedicada conforme descrito na proposta comercial da CONTRATADA, com suporte a até 03 monitores simultaneamente (terceiro monitor através da porta USB tipo C), de forma estendida ou espelhada. Possui suporte para DirectX 12 e Open GL 4.5 e compatibilidade do driver com o padrão WDDM (Windows Display Driver Model);
- Possui interface de comunicação wireless integrada, com suporte aos padrões 802.11ax, 802.11ac, 802.11a, 802.11b, 802.11g e 802.11n, com suporte aos protocolos 802.11i (WLAN security, TKIP e AES), WPA, WPA2, WEP 64 e 128, IEEE 802.11 (Wired Equivalent Privacy), IEEE 802.1x. Com certificado de homologação válido da ANATEL, e no Wi-fi Certified Aliance. O ajuste da potência é de acordo com a recepção do sinal, de forma a proporcionar economia de bateria;
- Possui teclado da HP integrado, com todos os caracteres da língua portuguesa incluindo ç, com 83 teclas, com teclado numérico embutido na fileira superior, com teclas Windows Logo (acesso ao menu iniciar) e Aplicação (acesso ao menu de atalhos, equivalente ao botão direito do mouse), com LEDs indicativos de “caps lock”. A impressão sobre as teclas é do tipo permanente, não apresentando desgaste por abrasão ou uso prolongado e com sistema de proteção contra derramamento acidental de líquidos;
- Possui dispositivo apontador integrado, do tipo “touchpad”, integrado no gabinete, com dois botões integrados e uma área para a função “scroll” (botão de rolagem), com suporte a múltiplos gestos tais como pinça e zoom;
- Fonte externo com ajuste automático 100~240v / 50-60Hz (bivolt), suficiente para suportar todas as configurações do equipamento conforme as especificações técnicas contidas no catálogo técnico do mesmo, permitindo o funcionamento por no mínimo 10 horas por dia e 5 dias por semana;
- Possui cabo de energia para a fonte de alimentação de acordo com o novo padrão ABNT (NBR 14136), com comprimento minimo de 1,5m (total fonte mais cabo de energia);
- Todos os componentes do produto são novos (sem uso, reforma ou recondicionamento) e estão em linha de fabricação;
- Pertence a linha corporativa da HP;
- A HP possui programas de Logística Reversa (https://www.hp.com/br-pt/hp-information/sustainable-impact/planet-product-recycling.html);
- São bens constituídos em parte, por material reciclado, atóxico, biodegradável e atendem a diretiva RoHS;
- Todos os itens e seus acessórios são novos, não recondicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, frisagens, furações, fitas adesivas, marcas, falhas de fabricação ou qualquer outro procedimento ou emprego de materiais inadequados que adaptem forçadamente o equipamento ou suas partes que sejam fisicamente ou logicamente incompatíveis;
- As unidades dos equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, utilizando sempre que possível de materiais recicláveis, de forma a garantir a máxima proteção durante o transporte e a armazenagem;
- Cada equipamento possui um número de série único, afixado em local visível em etiqueta de difícil remoção ou impresso a laser, constando a marca, o modelo e o número de série do equipamento e também na embalagem;
- A HP possui página na Internet no qual pelo número de série é possível verificar o início e fim do período de garantia do equipamento;

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- Os drivers, softwares e sistema operacional fornecido com o equipamento da HP estão disponíveis para download no site da HP, permitindo a instalação e recuperação do sistema operacional ao padrão de fábrica.
- A HP disponibiliza a ferramenta HP Cloud Recovery que permite realizar o download dos Drivers e do Sistema Operacional de forma automatizada para gerar pendrive de reinstalação;
- É disponibilizada documentação técnica necessária à instalação e operação do equipamento em português;
- A HP Disponibiliza “Central de atendimento telefônico” com número de telefone 0800 ou Whatsapp para abertura de chamado, em dias úteis, (segunda-feira a sexta-feira), em horário comercial (das 8h às18h) e “Central de atendimento via sistema web” para abertura de chamado 24x07, (domingo a domingo), a qualquer horário (das 00:00h às 23:59h);
- A HP Mantém os registros dos chamados que foram abertos, mantendo as informações que foram registradas sobre o mesmo;
- A ferramenta Web de abertura de chamados da HP permite que o cliente a visualize e acompanhe os chamados abertos anteriormente;
- Possui garantia padrão de fábrica de 01 ano para reposição de peças, mão de obra, com atendimento "on-site", conforme descrito na proposta comercial emitida pela CONTRATADA;
- Permite a extensão de garantia para 03, 04 ou 05 anos para reposição de peças, mão de obra, com atendimento do tipo "on-site" através de aquisição da CONTRADA de carepack de extensão de garantia, devendo descrever em sua proposta comercial a descrição da extensão da garantia (HP Carepack);
- A assistência técnica “on-site” será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;
- Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa, salvo quando o defeito for provocado por uso inadequado dos equipamentos;
- Certificado de Garantia é válido em todo o território nacional;
- Abertura do equipamento para limpeza, adição de memória ou SSD pela CONTRATANTE não implicará em perca da garantia desde que não cause mau uso. A garantia da HP não cobrirá o suporte destas peças.

Durante o período de garantia do Produto HP, a Fabricante HP responsabiliza-se pela garantia no prazo e condições padrão HP, conforme especificado no termo de garantia que acompanha o Produto HP e no manual técnico do Produto HP.

Serviços adicionais ao especificado na garantia padrão da Fabricante HP poderá ser adquiridos pelo Parceiro HP, com prazos e condições customizados.

B20A5LS#AK4 – HP Elite Mini 800 G9 – Carepack adicional – **U7925E** - HP 5-year Next Business Day Onsite Desktop Hardware Support.

67V68AV#TMP – Z2 Tower G9 – Carepack adicional – **UA935E** - HP 5-year Next Business Day Response Onsite Workstation Hardware Support.

9Z0P1AV#TMP – EliteBook 640 G11 – Carepack adicional – **UA6A3E** - HP 5-year Next Business Day Response Onsite Notebook Hardware Support.

9A816AV#TMP – ZBook Power 16-inch G11 – Carepack adicional – **U85RBE** - HP 5y Onsite Mobile Workstation Support.

Declaramos que os equipamentos fabricados pela HP são novos, que não foram submetidos a uso, nem recondicionamento, ressalvados os testes de fábrica.

JCAJ

Os Produtos da marca HP são de fabricação própria ou homologados por regime de O&M e estão em linha de produção atual.

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Declaramos, ainda, que a HP possui site na internet - www.hp.com.br – onde pode ser efetuado download de drivers para os Produtos HP e número de telefone para Grande São Paulo São Paulo (11) 3878-8338 / Demais Localidades: 0800-709-7751 / Whats app (11) +55 11 3230 4672 para informações e aberturas de chamados técnicos.

A Rede de Serviços Autorizados HP é amplamente distribuída em todo o território nacional, e conta com parceiros altamente qualificados relacionados abaixo. Trata-se de rede de parceiros com técnicos devidamente treinados e certificados pela HP, garantindo assim a excelência e a qualidade dos serviços prestados:

Unisys:	**Unisys:**	**Procedata:**
Acre	Paraíba	Minas Gerais
Alagoas	Paraná	
Amapá	Pernambuco	**Simpress:**
Amazonas	Piauí	Cidade: Vitoria
Bahia	Rio Grande do Norte	Cidade: Brasilia
Ceará	Rio Grande do Sul	Cidade: Recife
Espírito Santo	Rondônia	Cidade: Fortaleza
Goiás	Roraima	
Maranhão	Santa Catarina	**Técnicos HP:**
Mato Grosso	Sergipe	São Paulo (Capital)
Mato Grosso do Sul	Tocantins	Rio de Janeiro
Pará	Distrito Federal	Bahia (Salvador)
Paraíba	São Paulo (Interior)	Paraná (Curitiba)

Esta declaração é válida por 30 (trinta) dias corridos, a contar da data de sua emissão.

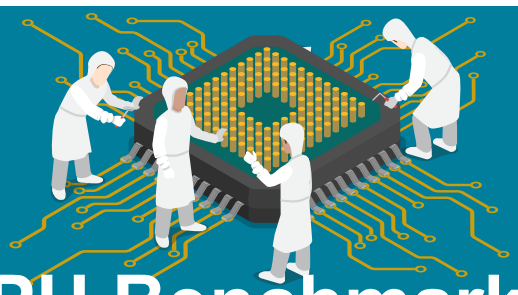
Atenciosamente,

JHENIFER CRISTINA ARAUJO DE JESUS:35253377875

Assinado de forma digital por JHENIFER CRISTINA ARAUJO DE JESUS:35253377875
Dados: 2025.07.17 12:28:58 -03'00'

Jhenifer Cristina Araujo de Jesus
Procuradora
HP Indústria e Comércio de Equipamentos Eletrônicos Ltda.

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CPU Benchmarks

Over 1,000,000 CPUs Benchmarked

Intel Core Ultra 5 135U

Benchmarks for the Intel Core Ultra 5 135U can be found below. Release dates, price and performance comparisons are also listed when available. This is made using thousands of PerformanceTest benchmark results and is updated daily.

- The first graph shows the relative performance of the CPU compared to the 10 other common (single) CPUs in terms of PassMark CPU Mark.
- The 2nd graph shows the value for money, in terms of the CPUMark per dollar.
- The pricing history data shows the price for a single Processor. For multiple Processors, multiply the price shown by the number of CPUs.

Is the Intel Core Ultra 5 135U Good for Gaming?

This is relatively new CPU that contains 12 Cores and 14 Threads. The Intel Core Ultra 5 135U also has reasonable threaded performance that will serve well in games. Paired with a good videocard, *is this CPU Good for Gaming?* Yes, this would be a suitable CPU for gaming. [More ...]

Intel Core Ultra 5 135U	Average CPU Mark
Description: Intel Graphics	
Class: Laptop **Socket:** FCBGA2049	
Total Cores: 12 Cores, 14 Threads	
Performance Cores: 2 Cores, 4 Threads, 1.6 GHz Base, 4.4 GHz Turbo	
Efficient Cores: 10 Cores, 10 Threads, 1.1 GHz Base, 3.6 GHz Turbo	
Typical TDP: 28 W **TDP Down:** 12 W	
TDP Up : 57 W	
Cache per CPU Package: L1 Instruction Cache: 2 x 64 KB L1 Data Cache: 2 x 48 KB L2 Cache: 5 x 2048 KB L3 Cache: 12 MB **Cache per Eff. CPU Package:** Eff. L1 Instruction Cache: 10 x 64 KB Eff. L1 Data Cache: 10 x 32 KB	
Memory Support: Max. Memory Size: 96 GB (Up to LPDDR5/x 7467 MT/s Up to DDR5 5600 MT/s)	

Multithread Rating

17417

Single Thread Rating

3349

Samples: 549*

*Margin for error: Low

+ COMPARE

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Other names: Intel(R) CoreTM Ultra 5 135U, Intel(R) Core(TM) Ultra 5 135U, Intel Core Ultra 5 135U

CPU Benchmarks

CPUmark/$Price: NA

Overall Rank:
956th fastest in multithreading out of 5274 CPUs
474th fastest in single threading out of 5274 CPUs
219th fastest in out of 1498 Laptop CPUs

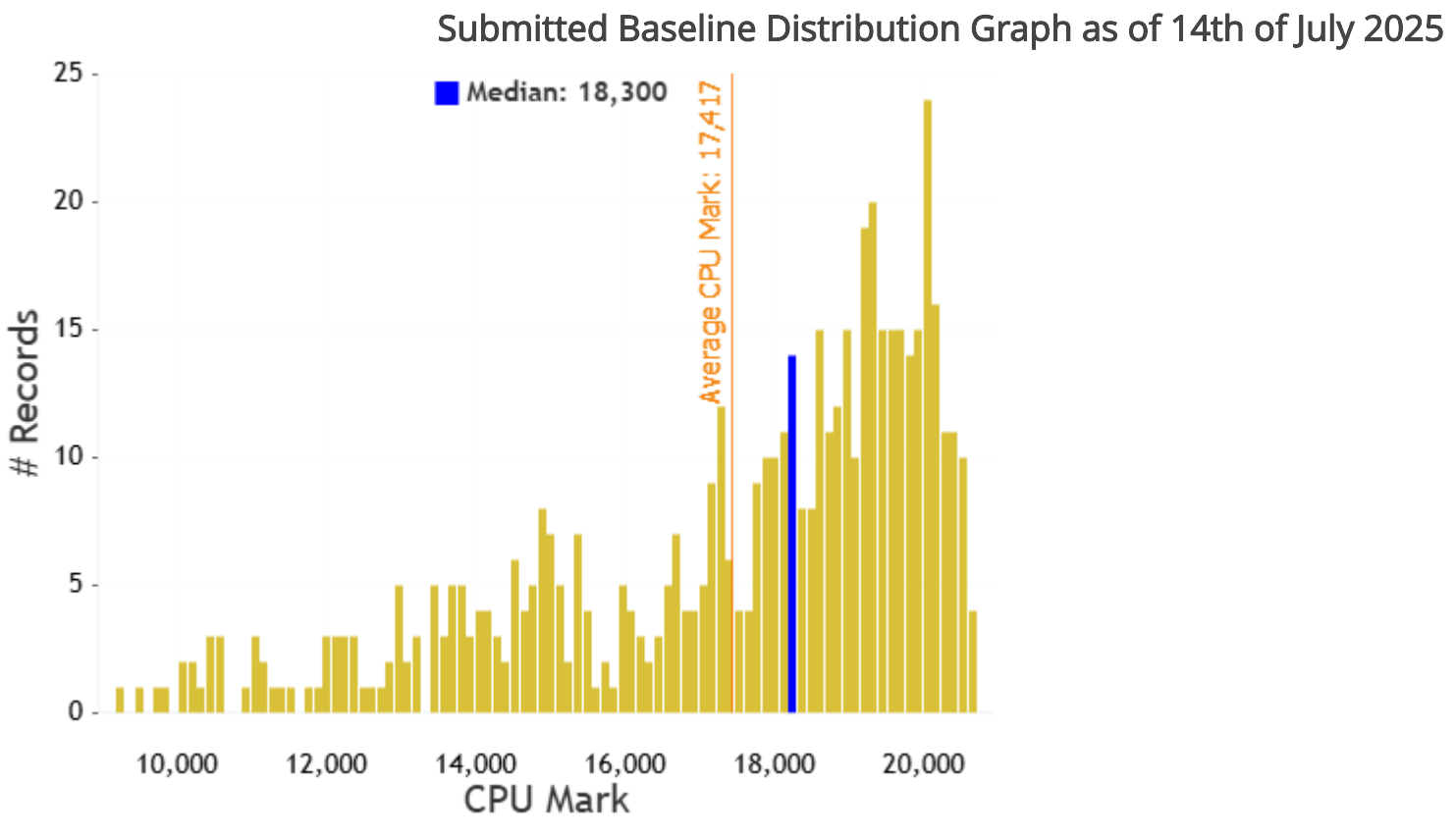
Last Price Change: NA

CPU Test Suite Average Results for Intel Core Ultra 5 135U

Integer Math	56,961 MOps/Sec
Floating Point Math	41,357 MOps/Sec
Find Prime Numbers	64 Million Primes/Sec
Random String Sorting	21,681 Thousand Strings/Sec
Data Encryption	12,236 MBytes/Sec
Data Compression	197,591 KBytes/Sec
Physics	1,126 Frames/Sec
Extended Instructions	11,198 Million Matrices/Sec
Single Thread	3,349 MOps/Sec

From submitted results to PerformanceTest V10 as of 17th of July 2025.

CPU Mark Distribution for Intel Core Ultra 5 135U



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From submitted results since PerformanceTest V10 as of 14th of July 2025.

For distribution graph only: Results are trimmed to exclude outliers by disregarding the bottom 1% and top 1% of submissions.

CPU Benchmarks

Search for Intel Core Ultra 5 135U

from the Featured Merchants below:

amazon

newegg

BEST BUY

ebay

Note: PassMark Software may earn compensation for sales from links on this site through affiliate programs.

Machines with this CPU (or similar)

	Dell Latitude 5450 5000 14" FHD Business Laptop Computer, Intel 12-Core Ultra 5 135U (Beat i7-1355U), 16GB DDR5 RAM, 512GB PCIe SSD, WiFi 6E, Backlit Keyboard, Thunderbolt 4, HDMI, Windows 11 Pro	$979.00 (www.amazon.com)
	Dell Latitude 5550 5000 Business Laptop Computer, Intel 12-Core Ultra 5 135U (Beat i7-1355U), 32GB DDR5 RAM, 1TB PCIe SSD, 15.6" FHD, WiFi 6, Thunderbolt 4, Backlit KB, Fingerprint Reader, Win11 Pro	$1299.00 (www.amazon.com)
	Dell Latitude 3550 Laptop Computer for Business Work, Intel 12-Core Ultra 5 135U (Beat i7-1355U), 32GB DDR5 RAM, 1TB PCIe SSD, 15.6" FHD, WiFi 6, Backlit Keyboard, Fingerprint Reader, Windows 11 Pro	$1199.00 (www.amazon.com)
	HP EliteBook 840 G11 14" Notebook - WUXGA - Intel Core Ultra 5 135U - vPro Technology - 16 GB - 512 GB SSD - English Keyboard	$849.00 (www.amazon.com)
	Dell Latitude 5550 15.6" FHD Business Laptop Computer, Intel Ultra 5 135U (Beat i7-1355U), 16GB DDR5 RAM, 512GB SSD, WiFi 6, Bluetooth 5.3, Backlit Keyboard, Fingerprint Reader, Windows 11 Pro	$1029.00 (www.amazon.com)

Note: PassMark Software may earn compensation for sales from links on this site through affiliate programs.

CPU Mark Relative to Top 10 Common Laptop CPUs

As of 17th of July 2025 - Higher results represent better performance

Processor	Average CPU Mark
Apple M1 Max 10 Core 3200 MHz	22,146
AMD Ryzen 7 5800H	20,795
Intel Core i7-11800H @ 2.30GHz	20,029
AMD Ryzen 7 4800H	18,227
Intel Core Ultra 5 135U	17,417
AMD Ryzen 5 5600H	16,692

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Apple M2 8 Core 3500 MHz		15,656

CPU Benchmarks

Intel Core i7-10750H @ 2.60GHz		11,624
Intel Core i7-9750H @ 2.60GHz		10,678
Intel Core i5-1135G7 @ 2.40GHz		9,514

CPU Value (CPU Mark / $Price)

As of 17th of July 2025 - Higher results represent better value

Processor	CPU Mark / $Price	
Intel Core i7-11800H @ 2.30GHz		50.71
Intel Core i5-1135G7 @ 2.40GHz		30.79
Intel Core i7-9750H @ 2.60GHz		11.12
Intel Core Ultra 5 135U		NA
Apple M1 8 Core 3200 MHz		NA
Apple M2 8 Core 3500 MHz		NA
Apple M1 Max 10 Core 3200 MHz		NA
AMD Ryzen 7 5800H		NA
AMD Ryzen 5 5600H		NA
AMD Ryzen 7 4800H		NA
Intel Core i7-10750H @ 2.60GHz		NA

Single Thread Rating

As of 17th of July 2025 - Higher results represent better performance

Processor	Average Thread Rating	
Apple M2 8 Core 3500 MHz		3,899
Apple M1 Max 10 Core 3200 MHz		3,836
Apple M1 8 Core 3200 MHz		3,680
Intel Core Ultra 5 135U		3,349
Intel Core i7-11800H @ 2.30GHz		3,045

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AMD Ryzen 7 5800H		3,022

CPU Benchmarks

Intel Core i5-1135G7 @ 2.40GHz		2,641
Intel Core i7-10750H @ 2.60GHz		2,627
AMD Ryzen 7 4800H		2,598
Intel Core i7-9750H @ 2.60GHz		2,405

Last 5 Baselines for Intel Core Ultra 5 135U

Most recent listed first

Baseline		CPU Mark
BL2770932 - Jul 17 2025		17926
BL2770238 - Jul 17 2025		12127
BL2769251 - Jul 16 2025		12259
BL2767774 - Jul 16 2025		17271
BL2767337 - Jul 16 2025		17268

Additional baselines can be obtained using Windows version of PerformanceTest's Manage Baselines feature.

Popular comparisons for Intel Core Ultra 5 135U

As of 17th of July 2025 - Higher results represent better performance

Processor		Average CPU Mark
Intel Core Ultra 5 135U		17,417
Apple M3 8 Core vs Intel Core Ultra 5 135U		19,188 *(+10.2%)*
Intel Core Ultra 5 125U vs Intel Core Ultra 5 135U		17,443 *(+0.1%)*
Intel Core Ultra 7 165U vs Intel Core Ultra 5 135U		17,112 *(-1.8%)*
AMD Ryzen 5 7430U vs Intel Core Ultra 5 135U		16,650 *(-4.4%)*
Intel Core Ultra 7 155U vs Intel Core Ultra 5 135U		16,409 *(-5.8%)*
Intel Core 7 150U vs Intel Core Ultra 5 135U		15,264 *(-12.4%)*
Intel Core i5-1335U vs Intel Core Ultra 5 135U		14,291 *(-17.9%)*
Intel Core i7-1355U vs Intel Core Ultra 5 135U		14,263 *(-18.1%)*

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Intel Core 3 100U vs Intel Core Ultra 5 135U		13,931 (-20.0%)

CPU Benchmarks

Apple M2 8 Core 3500 MHz vs Intel Core Ultra 5 135U		15,656 (-10.1%)
Intel Core Ultra 7 164U vs Intel Core Ultra 5 135U		13,296 (-23.7%)

Is the Intel Core Ultra 5 135U Good for Gaming?

As of 17th of July 2025 - Higher results represent better performance

Processor	Relative Gaming Score	
AMD Ryzen 9 9955HX3D		9,790
Intel Core Ultra 9 275HX		9,027
Intel Core Ultra 7 255HX		8,138
Intel Core Ultra 7 265H		7,795
Intel Core i9-14900HX		7,044
Intel Core i9-13900HX		6,778
Intel Core i9-13980HX		6,751
Intel Core i9-13950HX		6,749
AMD Ryzen AI Max Pro 390		6,728
AMD Ryzen AI Max 390		6,686
AMD Ryzen 9 7945HX3D		6,626
AMD Ryzen AI Max+ 395		6,451
Intel Core Ultra 5 135U		3,952

Software

- BurnInTest
- PerformanceTest
- OSForensics
- MemTest86
- WirelessMon
- Management Console

Hardware

- USB3.0 Loopback Plugs
- USB2.0 Loopback Plugs
- PCIe Test Cards
- USB Power Delivery Tester
- Serial and Parallel Loopback Plugs
- USB Short Circuit Testers

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› Zoom Search Engine

› Free Software

CPU Benchmarks

Benchmarks

› CPU Benchmarks

› Video Card Benchmarks

› Hard Drive Benchmarks

› RAM Benchmarks

› PC Systems Benchmarks

› Software Marketshare

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Microsoft

Hardware certification report **Approved**

Private product ID:	**14397863438045820**
Shared product ID:	**401649587**
Submission ID:	**1152921505697346058**
Submission date:	**2/5/2024**
Completion date:	**2/5/2024**
Company:	**HP Inc.**
Product name:	**HP EliteBook 630 13.3 inch G11 Notebook PC_KB**
Category:	**Device**
Product type:	**Keyboard**
Qualification level:	**Certified for Microsoft Windows 11 Client family version 22H2, x64**
Marketing name:	**HP EliteBook 630 13.3 inch G11 Notebook PC** **HP EliteBook 640 14 inch G11 Notebook PC** **HP EliteBook 660 16 inch G11 Notebook PC**

Microsoft Certified

ENERGY STAR CERTIFIED
Computers

HP - HP ProBook 440 14 inch G11 Notebook PC (ENERGY STAR) : HSN-Q38C-4

Specifications

ENERGY STAR Unique ID:	3417694
Brand Name:	HP
Model Name:	HP ProBook 440 14 inch G11 Notebook PC (ENERGY STAR)
Model Number:	HSN-Q38C-4
Type:	Notebook
Category 2: Processor Brand:	Intel
Category 2: Processor Name:	Ultra 7 155H
Category 2: Base Processor Speed Per Core (GHz):	1.4
Category 2: Physical CPU Cores (count):	16
Category 2: System Memory (GB):	64.0
Category 2: Default Low-power Mode:	ALPM
Category 2: Long Idle Power Used for Sleep Mode:	No
Category 2: Off Mode (watts):	0.4
Category 2: Sleep Mode (watts):	2.1
Category 2: Long Idle (watts):	2.1
Category 2: Short Idle (watts):	4.1
Category 2: Base TEC Allowance (kWh):	14
Category 2: Functional Adder Allowances (kWh):	29.9
Category 2: TEC of Model (kWh):	19.9
Notebooks, Desktops, Integrated Computers, Slate/Tablets, Two-in-one Notebooks, and Portable All-in-ones Category for TEC (Typical Energy Consumption) Criteria:	2
Category 2: Operating System Name:	Windows 11
Sleep Mode Default Time Upon Shipment (min.):	5
Display Sleep Mode Default Time Upon Shipment (min.):	5
WOL (Wake on LAN) From Sleep:	Shipped Enabled Under All Conditions
Will the Speed of Any Active 1 GB/s or Higher Ethernet Network Links be Reduced to Less Than 1 GB/s When Transitioning to Sleep or Off Mode?:	Yes

Ethernet Capability:	Yes
Touch Screen:	No
Date Available On Market:	2024-04-26
Date Certified:	2024-03-01
Markets:	United States, Switzerland, Taiwan, Japan, Canada
ENERGY STAR Certified:	Yes

Additional Model Information

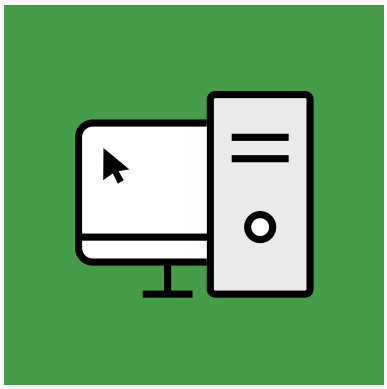
HP EliteBook 640 14 inch G11 Notebook PC (ENERGY STAR)„

UPC Codes	197498563671, 197498563688, 197498563695, 197498563701, 197498563718, 197498563725, 197498563732, 197498563749, 197498589992, 197498590011, 197498590035, 197498590059, 197498590073, 197498590097, 197498590110, 197498590141, 197498590189, 197498590219, 197498590233, 197498590257, 197498590271, 197498590295, 197961721003, 197961721027, 198122428052, 198122428069, 198122428076, 198122428083, 198122428090, 198122428106, 198122428113

Captured On:
11/14/2024

RETURN TO SEARCH

HP EliteBook 640 14 inch G11 Notebook PC (ENERGY STAR)



COMPUTERS & DISPLAYS

Product Summary:

Product Type:	Notebook
Registered In:	Brazil
Manufacturer:	HP
EPEAT Tier:	Gold
Registration Date:	2024-04-22
Product Status:	Active
EPEAT Climate+:	Achieved 2024-04-22
Exceptions:	Configurations that are not ENERGY STAR qualified do not meet required criterion 4.5.1.1.
Universal Product Code(s):	197498589992, 197498590011, 197498590035, 197498590059, 197498590073, ... View all (21)

All unique product identifiers existing for this product may not be listed here. If the unique product identifier you are looking for is not listed, please contact EPEAT at EPEAT@GEC.org.

EXPORT PRODUCT SUMMARY

EPEAT Tier Score Detail

For a product to be listed on the EPEAT Registry, it must, at a minimum, meet the applicable "required" criteria. Click here to see a list of the required criteria for this product category.

This product has met the necessary required criteria.

Along with required criteria, products can also meet optional criteria and score optional points. It is not required for a product to achieve any optional points.

Products that meet all required criteria and achieve **less than 50%** of the optional points are rated at **EPEAT Bronze**	Products that meet all required criteria and achieve **50 - 74%** of the optional points are rated at **EPEAT Silver**	Products that meet all required criteria and achieve **75 - 100%** of the optional points are rated at **EPEAT Gold**

The optional criteria for this product category and optional points achieved by this product are listed below.

Optional Criteria	Scores
4.1 Substance Management	13 / 16
4.2 Materials Selection	2 / 2
4.4 Product longevity/life-cycle extension	3 / 4
4.5 Energy Conservation	2 / 3
4.7 Packaging	2 / 2
4.8 Life cycle assessment and carbon footprint	6 / 6
4.9 Corporate Environmental Performance	9 / 9
4.10 Corporate social responsibility	4 / 6
TOTAL OPTIONAL CRITERIA SCORE:	**41 / 48**

Please note that it is not required for a

Some optional criteria may not be applicable to a product. Optional criteria that are not applicable

product to achieve any optional points.

(N/A) to the product are not included in the Total Optional Criteria Score, and are not reflected above.

For any questions, comments, or feedback regarding the EPEAT Registry, please contact us.

Contact Us

+1.503.279.9383

PO Box 12149 Portland, OR 97212-0149 USA

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TECHNICAL WHITEPAPER

HP WOLF SECURITY

HP Secure Erase for SSDs & HDDs

Safely and effectively erase sensitive data



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HP Secure Erase is a critical resource for IT

IT administrators are tasked with protecting sensitive data on business PCs, even after devices are recycled, disposed of, or reprovisioned. HP Secure Erase[1] makes it easy to sanitize local magnetic hard disk drives (HDDs) or solid-state drives (SSDs) to industry standards before disposal or recycling.

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Local storage sanitation—an important last step in the PC lifecycle

In an environment where sensitive user information is under attack at every stage of the system lifecycle, ensuring that data can be securely erased from a data storage device is paramount. Information can be vulnerable if left on a storage drive when a system is recycled, disposed of, or reprovisioned for another user. Properly sanitizing storage drives according to industry standards is a critical step in the PC lifecycle.

In addition to meeting industry standards for data erasure in standard magnetic hard disk drives (HDDs), HP has taken the additional step of extending HP Secure Erase to also support industry-standard Solid State Drives (SSDs). HP Secure Erase is a standard feature in all HP business notebooks, supporting the methods outlined in the National Institute of Standards and Technology Special Publication 800-88. Manufacturers of industry standard SSDs approved for use in HP business notebook products have verified that running HP Secure Erase on their SSDs fully removes all user data so that it cannot be recovered.

Erasing SSDs vs. HDDs

Using HP Secure Erase on standard HDDs, data is overwritten using a data-removal algorithm that writes multiple patterns on every sector, cluster, and bit of the hard drive. This process is documented in the Department of Defense (DOD) 5220.22-M Chapter 8 specification.[2] This overwrite-based process is only effective on standard HDDs. Writing a predetermined data pattern to a NAND flash-based SSD does not result in an empty drive. Instead it results in a drive full of data that must be erased before new user data can be written, which massively shortens the service life.

INDUSTRY-STANDARD DISK SANITATION

To securely erase all user data from an SSD and restore the drive to a fresh-out-of-box (FOB) performance state, the National Institute of Standards Technology (NIST) supports the following commands that meet the minimum guideline for media sanitization of SSDs (NIST SP800- 88 Rev.[1]).

Block Erase is a function enabled only in SATA SSDs, using the ATA command BLOCK ERASE EXT. Block Erase will instruct the SSD controller to apply an erase voltage to all NAND cells of the device (including any cells which form blocks that have been retired, re-allocated, involved in garbage collection or

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over-provisioning, or are part of a reserved pool of spare blocks). This functionality provides a very fast, complete and robust erasure of the SSD.

Crypto Erase is a function enabled only in SATA SSDs. Using the ATA command CRYPTO SCRAMBLE EXT, this function removes the encryption key effectively making it impossible to reconstruct any of the data on the storage device. Crypto Scramble is implemented on both HDD and SSD SED devices.

Block Erase and Crypto Erase Sanitize Operation is a function enabled only in PCIe NVMe SSDs. NVMe does not follow conventional ATA feature sets. Instead, NVMe devices support a sanitization function, inside their FORMAT NVM command structure that includes BLOCK ERASE SANITIZE and CRYPTO ERASE SANITIZE operation. So, by setting some specific bits in this command structure, a function similar to Secure Erase can be carried out.

WHAT DATA IS NOT ERASED?

After deploying HP Secure Erase on an SSD, all data in the user space is completely and irretrievably erased, and every block in the user space is ready to accept new host-written data, which moves the drive to its highest performance state (FOB).

However, some data must be left in place, including data required for normal drive operation: SSD firmware copies that reside in the NAND, all SMART data, and retired NAND block mapping tables.

CONCLUSION

Writing or overwriting data to drive is the accepted practice of securely eliminating data from an HDD. However, in the case of NAND flash-based SSDs, overwriting is redundant, unnecessary, and a potentially insecure method of eliminating data.

By using HP Secure Erase, users can ensure that SSDs are completely sanitized and meet the minimum industry standards. HP Secure Erase is easily enabled through the standard F10 BIOS setup process on most HP business PCs.

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HP WOLF SECURITY

[1] For the methods outlined in the National Institute of Standards and Technology Special Publication 800-88 “Clear” sanitation method. Secure Erase does not support platforms with Intel® Optane™. HP Secure Erase does not support platforms with Intel® Optane.

[2] Specification 5220.22-M no longer exists. The DoD has subsequently decided that secure information must be destroyed to remain secure. The NIST guidelines restate in clear terms that a two-person rule (read human verification) shall be implemented but did not establish guidelines on the method of sanitization (it could be a single wipe with dual human verification, or a single destruction with the same).

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WHITEPAPER

HP WOLF SECURITY

HP Sure Start



HP Sure Start

Going beyond system BIOS protection,

HP Sure Start Gen7 protects against firmware attacks and/or accidental corruption for the majority of boot-critical system firmware.

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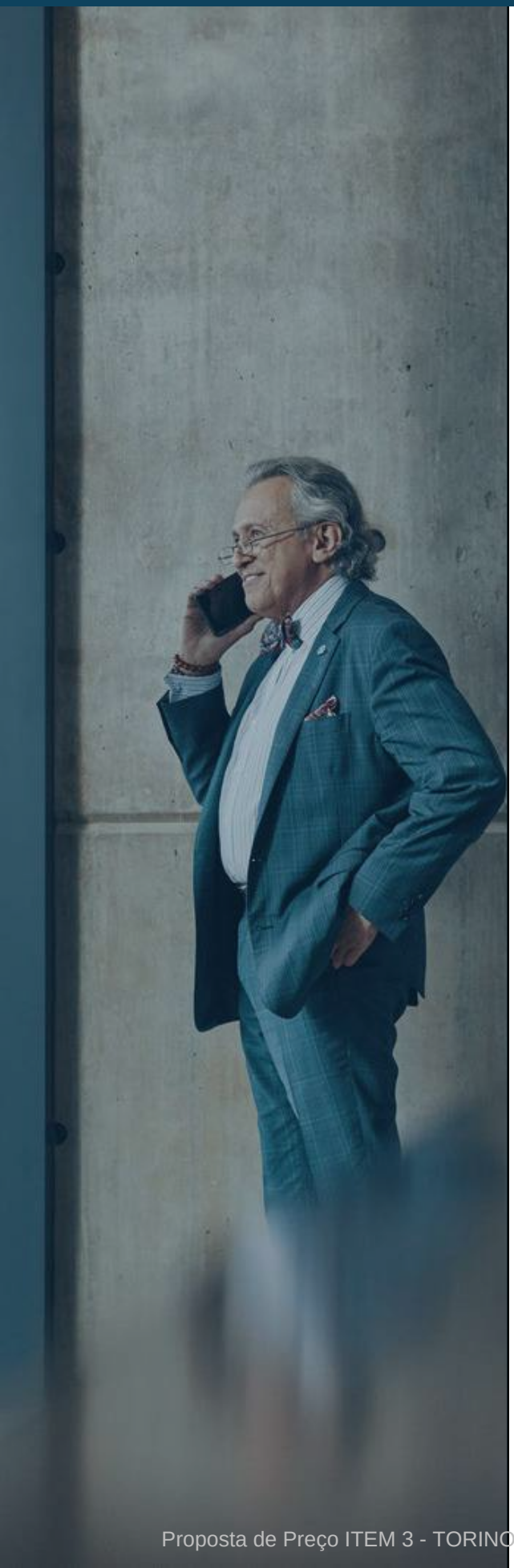
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Introduction

HP Sure Start is a comprehensive security and advanced resilience firmware solution. Going well beyond system BIOS protection, HP Sure Start protects against firmware attacks and/or accidental corruption for the majority of boot-critical system firmware.

With little or no interruption to user productivity, HP Sure Start can automatically detect, stop, and recover from attacks or corruption without IT intervention. Every time the PC powers on, HP Sure Start automatically validates the integrity of the firmware to help ensure that the PC is safeguarded from malicious attacks. Once the Operating System is running on the PC, runtime intrusion detection constantly monitors memory. In the case of an attack, the PC can self-heal using an isolated "golden copy" of the firmware in minutes.

Why is firmware protection important?

As our world becomes more connected, cyber-attacks are targeting client device firmware and hardware with increasing frequency and sophistication. Tools and techniques to attack firmware were once theoretical and thought only to be available to nation-states. Such tools and techniques have since been shown to not only exist, but to be readily available in the public domain.

The critical device firmware (HP BIOS, HP Endpoint Security Controller firmware, Intel Management Engine Firmware, AMD Security Processor Firmware, etc.) is an attractive target for attackers because of the potential advantages a successful breach could provide:

Persistence: Firmware resides in a nonvolatile memory on the circuit board and can't be removed simply by erasing the hard drive.

Control: Firmware executes at the highest privilege level—outside of the OS domain— which enables the possibility of OS-independent malware.

Stealth: Firmware occupies a region of memory that is completely inaccessible to the operating system and system software; since it can't be scanned by antivirus it may never be detected.

Difficulty of recovery: All these aspects make it extremely difficult to recover from this type of infection without resorting to a service event that includes a system board replacement.

The ideal solution to protect devices against this type of attack is designed from the hardware up, using “cyber resiliency” principles. These principles acknowledge that it is extremely difficult, if not impossible, to foresee and prevent every possible attack. The ideal solution not only provides enhanced protection of the firmware, but also includes a hardware rooted ability to both detect a successful attack and recover from it.

HP Sure Start provides superb firmware protection

HP Sure Start is HP’s unique and groundbreaking approach to provide advanced firmware protection and resiliency to HP PCs. It uses hardware enforcement via the HP Endpoint Security Controller (HP ESC) to provide protection of the BIOS and other critical platform firmware that reaches well beyond the industry standard and ensures that the system will only boot Genuine HP BIOS and other critical firmware. Additionally, if HP Sure Start detects tampering with BIOS, other critical firmware, or runtime System Management Mode (SMM) BIOS code, it can recover using a protected backup copy.

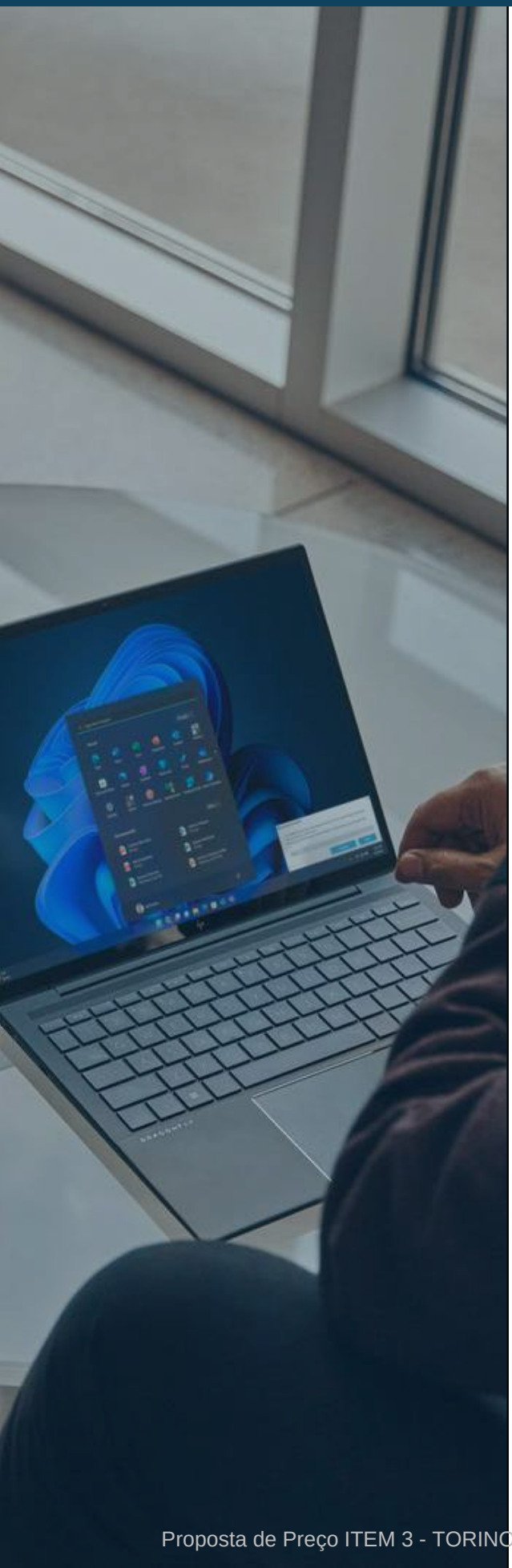
Summary of HP Sure Start features:

HP platform firmware authenticity enforcement and tamper protection
HP Endpoint Security Controller hardware enforcement of the system boot, so only authentic and unmodified critical firmware and HP BIOS are loaded.

Firmware health monitoring and compliance
Logging of firmware health-related events via isolated HP Endpoint Security Controller; presents the platform firmware state along with any anomalies that could indicate thwarted attacks.

Self-healing
Automatic repair of HP BIOS and other critical firmware corruption, using the HP Endpoint Security Controller isolated backup copy of HP BIOS and other critical firmware.

BIOS setting protection
Extension of the HP Endpoint Security Controller protection of the BIOS code to include HP ESC backup and integrity-checking of all user or admin- configured BIOS settings.



Runtime Intrusion Detection
Ongoing monitoring of critical BIOS code in runtime memory (SMM) while the OS is running.

Secure boot keys protection
Significantly enhanced protection of databases and keys stored by the BIOS that are critical to the integrity of the OS secure boot feature versus standard UEFI BIOS implementation.

Protected storage
Strong cryptographic methods to store BIOS settings, user credentials, and other settings in the HP Endpoint Security Controller hardware to provide integrity protection, tamper detection, and confidentially protection for that data.

Intel® Management Engine firmware protection
Full backup, integrity monitoring, and recovery services for Intel Management Engine firmware and critical data. Fully compliant with all NIST 800-193 resilience requirements.

AMD Secure Processor firmware protection
Full backup, integrity monitoring, and recovery services for AMD Secure Processor firmware and critical data. Fully compliant with all NIST 800-193 resilience requirements.

Manageability
Administrator management of HP Sure Start capabilities with the Manageability Integration Kit (MIK) plug-in for Microsoft® System Center Configuration Manager (SCCM).

Direct Memory Access (DMA) Protection
Utilizes the I/O Memory Management Unit (IOMMU) to provide hardware protection against attacks to system memory via DMA capable thunderbolt devices. Also enables support for Microsoft. "Kernel DMA Protection for Thunderbolt™ 3" (Win10 RS4 and forward). HP Sure Start Gen6+ also extends support for protection against DMA attacks beyond external thunderbolt devices to include DMA attacks via internal slots.

For a summary of capabilities added in each generation of HP Sure Start, see Appendix A.

Third-party security certification

The HP Endpoint Security Controller hardware used in HP Sure Start has undergone third- party security assessment and has been certified to provide hardware enforcement so that only authorized firmware can start on the target PC.[1]

Assurance that a security solution works as stated is a critical piece of any purchase decision related to security products. And because a reputation for quality can only go so far, HP has exposed the HP Endpoint Security Controller inner workings for review and testing by an independent and accredited laboratory to validate that it works as claimed per publicly available criteria, methodology, and processes.

Cyber-resilient design

Not only does HP Sure Start provide enhanced BIOS protection beyond the industry standard approach, but it is designed from the hardware up to provide unmatched platform cyber-resilience to ensure critical device firmware recovery even in the event of a breach or destructive attack.

All HP Sure Start Gen6+ systems include the ability to recover from a completely erased system flash. The system flash contains the majority of the boot critical firmware elements that are required to boot the system and have reasonable functionality. Those boot critical elements include system BIOS, HP Endpoint Controller firmware, video BIOS, Intel Descriptor Region firmware, AMD Secure Processor firmware, and Intel Management Engine firmware. If any one of these firmware elements in the system flash becomes corrupted in a manner that renders that subsystem non-functional, the system will be unable to boot. With an HP Sure Start Gen5+ system, all these components are restored from the HP Sure Start private flash in order to ensure that the system does not become non-operational due to firmware attack or corruption.

HP business PCs with HP Sure Start exceed the National Institute of Standards and Technology (NIST) Platform Firmware Resiliency guidelines (Special Publication 800- 193) for host processor boot firmware and other critical platform device firmware, as discussed in Appendix C. NIST SP 800-193 is one of the leading public sector efforts to formalize requirements for cyber-resilient platforms. For more details about HP Sure Start and NIST 800-193, see Appendix C.

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HP Sure Start – Supported models

HP introduced Sure Start in 2013. Since that time, HP has enhanced Sure Start and expanded the number of products that include it. HP Sure Start is available on many HP business PCs, including Pro and Elite, platforms, Workstations, Thin Clients, and Point of Sale Systems (RPOS). HP Sure Start is available on both Intel and AMD platform in this lineup.

Architectural overview and capabilities

HP Sure Start consists of two major architectural components:

- HP Endpoint Security Controller running HP Sure Start firmware
- HP Sure Start BIOS working in conjunction with the HP Endpoint Security Controller hardware and firmware.

Firmware integrity verification - The core of HP Sure Start

The HP Endpoint Security Controller (HP ESC) is the first device in the system to execute firmware when the system powers on, active well before the system boots. The HP ESC activities include, but are not limited to, monitoring the system power button and power sequencing, then start of the host CPU execution when the user presses the power button.

When power is first applied to the platform (before the system is turned on), the HP ESC validates that its own firmware is authentic HP code before loading and executing the code. The HP ESC hardware uses industry-standard, strong cryptographic methods to perform the integrity verification. The method employs a 2048-bit HP RSA public key contained within internal permanent read-only memory. Therefore, the HP ESC is the built-in hardware-based Root of Trust (RoT) for the platform, used to validate its firmware and the HP BIOS before they are executed. This hardware Root of Trust protects against firmware replacement attacks regardless of their deployment method and serves as the foundation upon which HP platform security is built.

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Figure 1:
Firmware integrity verification process

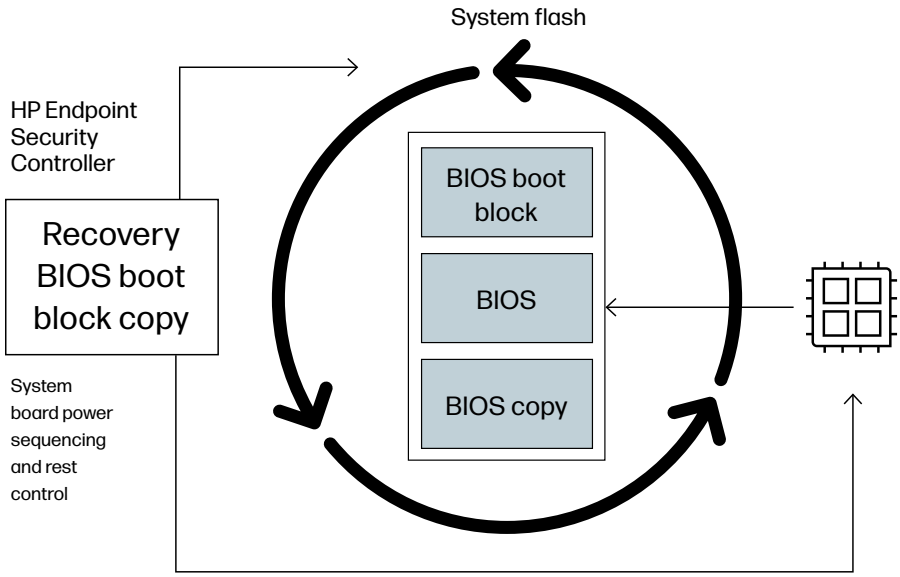


Figure 1 illustrates the firmware integrity verification process. Once the HP ESC authenticates and starts executing the HP Sure Start firmware, that firmware uses the same strong cryptographic operations to verify the integrity of the system flash BIOS boot block. If a single bit is invalid, the HP ESC replaces the system flash contents with its own copy of the HP BIOS boot block that is stored within an isolated nonvolatile memory (NVM) dedicated to the HP ESC.

The HP Sure Start design ensures that all the firmware and BIOS code running on both the HP ESC and the host CPU is the code HP intended to be on the device.*

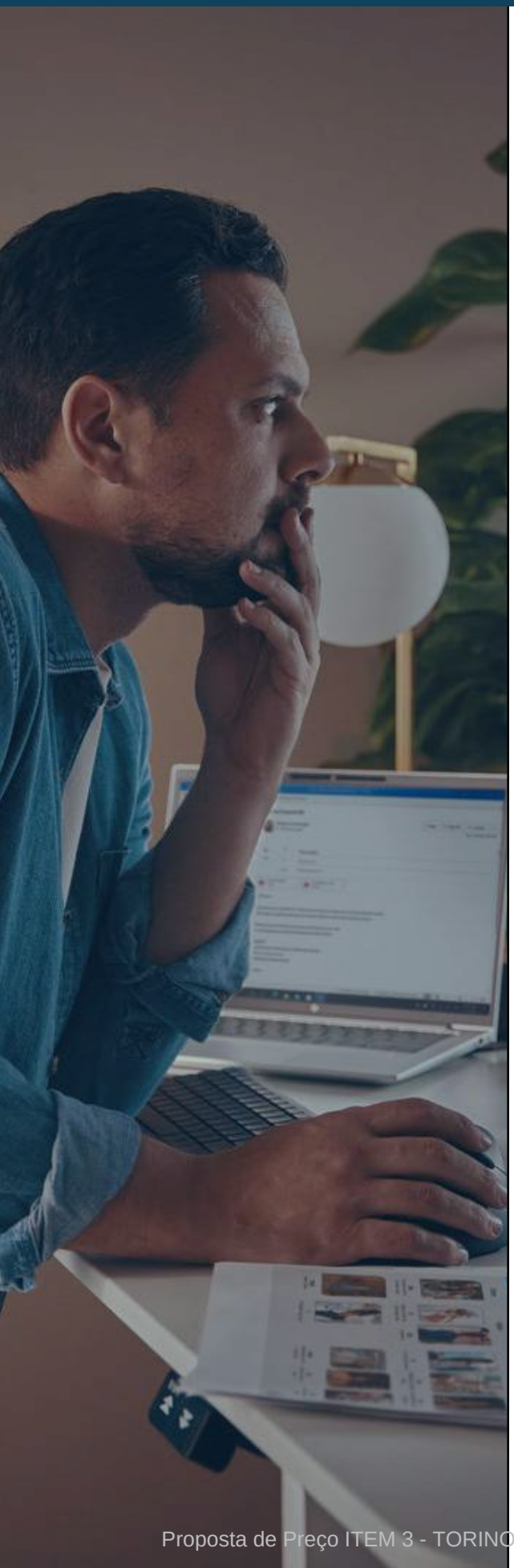
The system flash BIOS boot block is the foundation of the HP BIOS. The HP ESC hardware ensures that the BIOS boot block is the first code that the CPU executes after a reset. Once the HP ESC determines that the BIOS boot block contains authentic HP code, it allows the CPU to begin executing code and the system to boot as it normally would.

The HP ESC also checks the integrity of the system flash boot block code each time the system is turned off or put into a hibernate or sleep mode. Since the CPU is powered off in each of these states and the CPU is therefore required to re-execute BIOS boot block code to resume, it is crucial to re-verify the integrity of the BIOS boot block each time before the CPU starts at power-on to check for tampering.

Additionally, for HP Intel models, HP Sure Start checks the integrity of the system flash BIOS boot block every 15 minutes while the system is running[2].

* Note:
The system flash boot block integrity checking, and any needed recovery performed by the HP ESC, take place while the host CPU is off. Therefore, from a user point of view, the entire operation takes place when the system is still off, in sleep mode, or hibernate mode.

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Machine-unique data integrity

The HP ESC and BIOS work together to provide advanced protection of factory-configured critical variables unique to each machine that are intended to be constant over the life of any specific platform. In the factory, a backup copy of this variable data is saved in the HP ESC nonvolatile memory store. The backup is made available to the HP Sure Start BIOS component on a read-only basis to perform integrity checking of the data on every boot. If any setting in the shared flash is different from the factory settings, the HP Sure Start BIOS components will automatically restore the data in the System Flash from the backup copy provided by the HP ESC.

Descriptor region

For HP Intel models, HP Sure Start protects the descriptor region of the system flash. Unique to Intel architecture, the descriptor region contains critical configuration parameters that are sampled by the Intel Core™ logic at reset and used thereafter to configure the Core logic. The descriptor region also includes partitioning information for the system flash that is used by the Intel Core logic to determine where the BIOS region resides within the flash and therefore where their CPU retrieves code for execution from reset. HP Sure Start monitors the integrity of this region and recovers it to the intended configuration in the event of tampering or corruption.

Network controller protection

In addition, for HP Intel models, HP Sure Start protects the network controller (NIC) settings contained with the system flash. Some HP customers have use cases that require legitimate changes to factory configured NIC settings. Therefore, HP Sure Start does not prevent changes to NIC settings by default. Instead, HP Sure Start provides a feature that, when enabled, warns the user that NIC settings have changed. In addition, HP Sure Start provides a method to restore the NIC settings to factory values. Protected settings include the MAC address, the Pre-boot Execution Environment (PXE) settings, and the remote initial program load (RPL). This restoration is possible via a read-only backup copy protected by the HP ESC.

BIOS setting protection

As previously described, HP Sure Start verifies the integrity and authenticity of the HP BIOS code. Since this code is static after it is created by HP, digital signatures can be used to confirm both attributes of the code. The dynamic and user-configurable nature of BIOS settings, however, create additional challenges to protecting those settings. Digital signatures cannot be generated by HP and used by the HP Sure Start ESC hardware to verify those settings.

HP Sure Start BIOS setting protection provides the capability to configure the system so the HP ESC hardware is used to back up and check the integrity of all the BIOS settings preferred by the user.

When this feature is enabled on the platform, all policy settings used by BIOS are subsequently backed up and an integrity check is performed on each boot to ensure that none of the BIOS policy settings have been modified. If a change is detected, the system uses the backup from the HP Sure Start-protected storage to automatically revert to the user-defined setting.

The HP Sure Start BIOS setting protection feature generates events to the HP Sure Start ESC hardware when an attempt to modify the BIOS settings is detected. The event is logged in the HP Sure Start audit log, and the local user will receive a notification from BIOS during boot.

HP SureStart - Protected storage

Protected storage rooted in the HP Endpoint Security Controller hardware provides the highest level of protection for BIOS/firmware data and settings protected by HP Sure Start. HP Sure Start-protected storage is designed to provide confidentiality, integrity, and tamper detection even if an attacker disassembles the system and establishes a direct connection to the nonvolatile storage device on the circuit board.

Data integrity

The integrity of the dynamic data stored in nonvolatile memory by firmware and used to control the state of various capabilities is critical to the security posture of the overall platform. Dynamic data includes all BIOS settings that can be modified by the end user or administrator of the device. Examples include (but are not limited to) boot options such as the secure boot feature, BIOS administrator password and related policies, Trusted Platform Module–state control, and HP Sure Start policy settings.



Any successful attack that bypasses the existing access restrictions designed to prevent unauthorized modifications to these settings could defeat the platform security. As an example, consider a scenario where an attacker makes an unauthorized modification to the secure boot state to disable it without being detected. In this scenario, the platform would boot the attacker's root kit before the OS starts, without the user's knowledge.

Industry-standard Unified Extensible Firmware Interface (UEFI) BIOS does implement access restrictions that should prevent unauthorized modifications to these variables, and HP implements these just like the rest of the PC industry. However, given the risks a breach of these mechanisms poses to the platform, HP Sure Start provides secondary defenses that are stronger than the baseline industry standard.

BIOS settings and other dynamic data used by firmware to control the state that is protected by HP Sure Start are stored in the isolated nonvolatile memory of the HP Endpoint Security Controller that is not directly accessible to software running on the host CPU.

Additionally, the HP ESC creates and appends unique integrity measurements each time a data element is stored in this nonvolatile memory store. The integrity measurements are based on a strong cryptographic algorithm (hashed-based message authentication code utilizing SHA-256 hashing) that is rooted to a secret contained within the HP ESC. The secret is unique to each HP ESC, such that each controller generates a unique integrity measurement given an identical element. When the data element is read back from the nonvolatile memory, the HP ESC recalculates the integrity measurement for that data element and compares it to the integrity measurement that is appended to the data. Any unauthorized changes to the data in the nonvolatile memory store result in a mis-compare. Using this approach, the HP ESC can detect tampering with data elements stored in the nonvolatile memory store.

Data confidentiality

For many of the data elements stored by the platform, maintaining confidentiality is critical. Examples include BIOS administrator password hashes, user credentials, and secrets optionally stored by firmware on behalf of the user for firmware-based features such as HP Sure Run and HP Sure Recovery.

Protection of these secrets is challenging when industry-standard UEFI BIOS approaches are used, since the nonvolatile storage is typically readable by software running on the host processor. HP Sure Start–protected storage is intended to provide much greater protection of this confidential data than a standard UEFI BIOS implementation.

In addition to a separate isolated storage, HP Sure Start leverages the Advanced Encryption Standard (AES) hardware block contained within the HP ESC to perform AES-256 encryption on all confidential data elements stored in the HP Sure Start nonvolatile memory, in addition to the data integrity measurements for those elements. The encryption key used is unique to each HP ESC and never leaves that controller, so data encrypted by any individual HP ESC component can only be decrypted by that same HP ESC.

Secure boot keys protection

Compared to the industry-standard UEFI secure boot implementation, HP Sure Start provides enhanced protection of the UEFI secure boot key databases that are stored by the firmware. These variables are critical to proper operation of the UEFI secure boot feature that verifies integrity and authenticity of the OS bootloader before allowing it to start at boot.

HP Sure Start protects UEFI secure boot key databases by maintaining a master copy in HP Sure Start–protected storage.

Any authorized modifications to the UEFI standard secure boot key databases by the OS during runtime are tracked by HP Sure Start and applied to the master copy by the HP ESC. HP Sure Start then uses the master copy in HP Sure Start– protected storage to identify and reject any unauthorized changes to the UEFI standard secure boot keys databases.

This capability, enabled by default, covers the following databases:

- Signature database (db)
- Revoked signatures database (dbx)
- Key Enrollment Key (KEK)
- Platform Key (PEK) updated dynamically at runtime by the OS

Runtime Intrusion Detection (RTID)

On each boot, the BIOS code starts execution from flash memory at a fixed address. This is known as the BIOS boot code and provides capabilities needed before the OS starts. However, a portion of BIOS remains in DRAM that is needed to provide advanced power- management features, OS services, and other OS-independent functions while the OS is running. This BIOS code, referred to as System Management Mode (SMM) code, resides in a special area within the DRAM that is hidden from the OS. We also refer to this code as "runtime" BIOS code in the context of HP Sure Start's Runtime Intrusion Detection feature. (For more details on SMM and how it works, please see Appendix B.)

The integrity of SMM code is critical to the client device security posture. HP Sure Start checks to make sure HP SMM BIOS code is intact at OS start. By adding new protection capabilities and/or providing a means to detect any attack to that code, Runtime Intrusion Detection provides mechanisms to ensure that the SMM BIOS code remains intact while the OS is running.

Figure 2

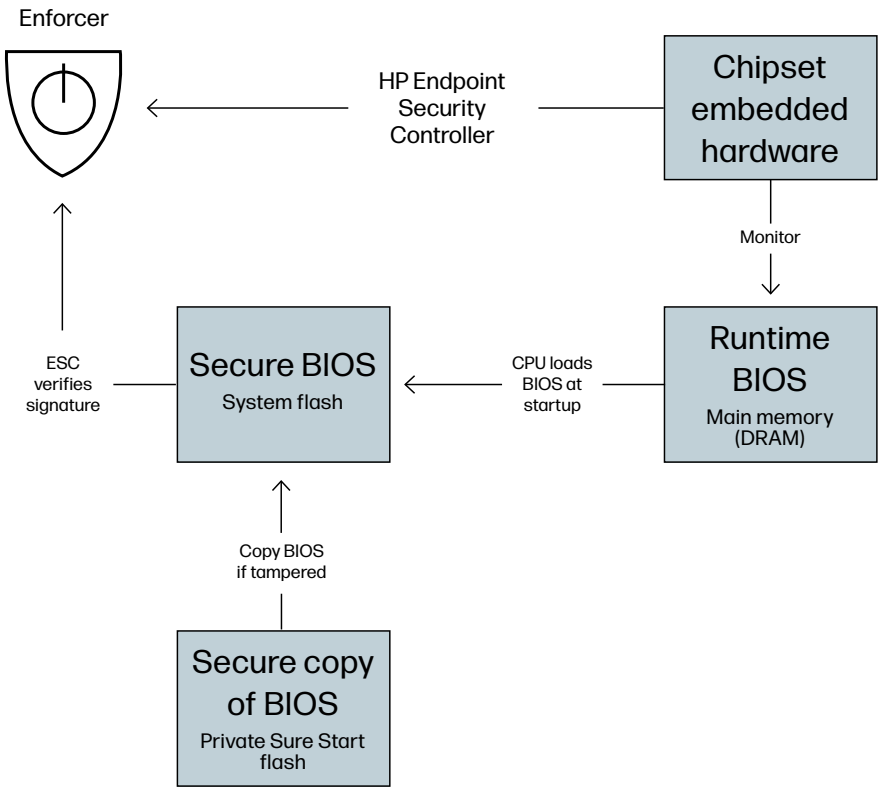


Figure 2:
Runtime Intrusion Detection uses specialized hardware embedded within the platform chipset to monitor SMM code for any changes.



Runtime Intrusion Detection architecture

The RTID feature utilizes specialized hardware in the platform chipset to detect anomalies in the Runtime HP SMM BIOS. Detection of any anomalies results in a notification to the HP Endpoint Security Controller, which can take the configured policy action independent of the CPU.

Intel® Management Engine firmware protection

All HP Sure Start Gen6+ systems include the ability to fully recover from corrupted Intel Management Engine firmware and/or critical data associated with the Intel Management Engine subsystem.

In those systems that include support for HP Sure Recover with Embedded Reimaging, HP Sure Start Gen6+ is able to recover the entire Intel Management Firmware using a copy of Intel Management engine firmware stored on the Embedded Reimaging device on the system board with no additional dependencies.

On HP Sure Start Gen6+ systems that do not support Embedded Reimaging, HP Sure Start uses a copy of the Intel Management firmware that is included on the system EFI partition on the primary mass storage device for full recovery.

In the event that the Intel Management Engine firmware update has been removed from the EFI partition, HP Sure Start Gen6+ will only perform a partial recovery of the Intel Management Engine firmware and/or critical data from the HP Sure Start private flash that will enable the system to operate with reasonable functionality. In order to fully restore all functionality provided the Intel Management Engine Firmware, it will be necessary to apply an update to the intel Management Firmware Engine firmware which will restore the full recovery image to the EFI partition.

Customers that deploy their own OS images need to take some additional steps to ensure that HP Sure Start Gen6+ can fully recover the Intel Management Engine Firmware with complete autonomy. Those steps include creating a system EFI partition that is at least 360MB, and applying an HP Intel Management Engine firmware update package.

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AMD® Secure Processor protection

All HP Sure Start Gen6+ systems include the ability to fully recover from corrupted AMD Secure Processor firmware and/or critical data associated with the AMD Secure Processor subsystem.

HP Sure Start Gen6+ is able to recover the entire AMD Secure Processor subsystem using a copy of AMD Secure Processor firmware stored within the HP Endpoint Security Controller isolated non-volatile memory with no additional dependencies.

Smart Flash

HP Sure Start Gen6+ adds Smart Flash technology which can dramatically reduce the time required for firmware updates and Sure Start firmware recovery operations. With Smart Flash, the HP Endpoint Security Controller will only modify those portions of the flash are corrupted (recovery) or changed (update) for both the HP Endpoint Security Controller backup copies of firmware and the primary copies of firmware in the primary flash.update package.

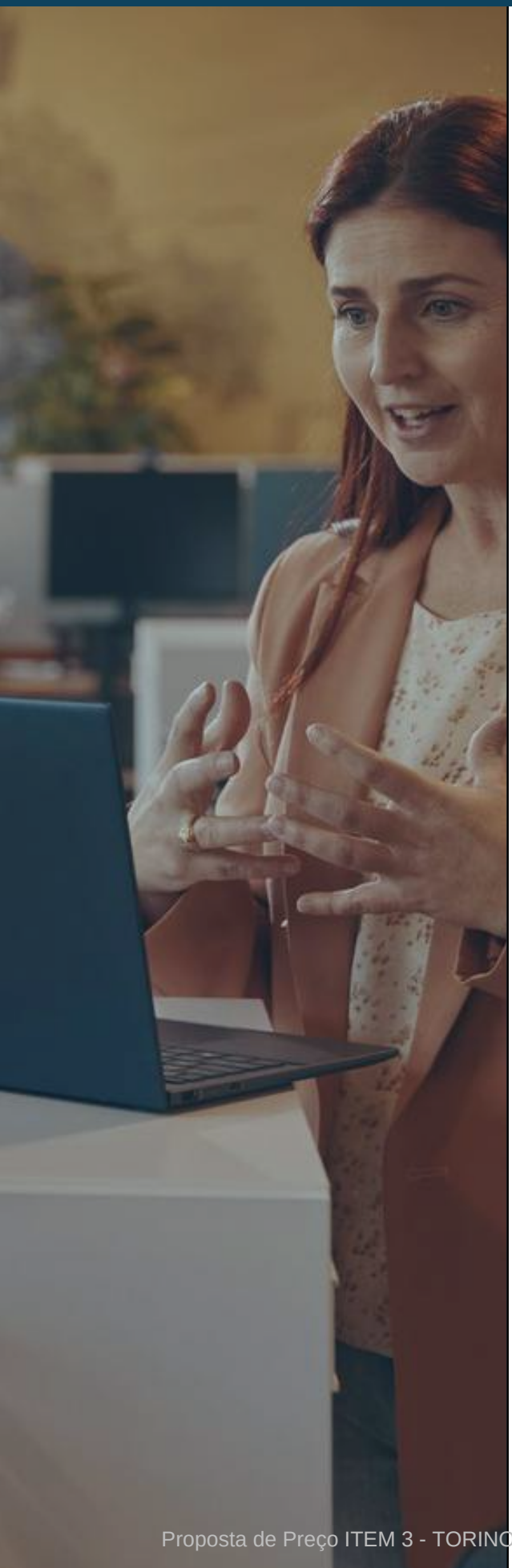
HP Endpoint Security Controller runtime intrusion detection

Starting from HP Sure Start Gen6+, the HP Endpoint Security Controller firmware utilizes a hardware Memory Protection Unit within the HP Endpoint Security Controller to detect, block, and log an event in the event of any unauthorized attempt to modify the run-time HP Endpoint Security Controller run-time code or critical data.

FIPS 140-3 Certification

FIPS (Federal Information Processing Standards Publication 140-3, is a standard developed by the National Institute of Standards and Technology (NIST) and defines the security requirements for cryptographic modules used in various IT products. HP's ESC, beginning with Sure Start Gen 7, has received level 1 certification (FIPS 140-3 Certificate), which ensures that the cryptography used in these modules provides a secure environment for the processing of sensitive information.

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SPI Host Interface Monitoring

The HP ESC now integrates SPI (Serial Peripheral Interface) Protocol Analyzer hardware, which enables HP Sure Start Gen7 to protect the system against malicious/unauthorized activity on the SPI bus. The SPI bus is the interface between the CPU and system flash memory holding the system firmware and settings (such as HP UEFI BIOS, Intel CSME firmware, AMD Security Processor firmware, and more). The HP ESC SPI protocol analyzer is also connected to this SPI bus and configured by HP Sure Start to monitor and analyze the SPI bus traffic in real time to identify and block malicious transactions to the SPI flash.

User notifications, event logging, and policy management

HP Sure Start end user notifications

Under normal operating conditions, HP Sure Start is invisible to the user. When HP Sure Start identifies a problem, recovery operations are automatic, using the default settings with no end user or IT interaction usually required.

Users may see runtime notifications in the event of a BIOS integrity problem detected via the HP Sure Start Dynamic Protection or the Runtime Intrusion Detection features while the OS is running[2]. If any significant event is detected or action is taken, HP Sure Start displays a warning message via Windows® notifications on the next boot. HP Notifications Software is required to enable the viewing of these Windows notifications.

HP Sure Start event logging

The HP Endpoint Security Controller records critical events related to the firmware/BIOS code and data monitored by HP Sure Start. These events are stored within the Sure Start nonvolatile memory store. When HP Notifications software is installed, the events are copied from the HP ESC to the Windows Event Viewer[3] to facilitate access to these events by the local user as well as the customer's preferred manageability agent.

The following events trigger the HP Notifications Software to gather all events from the HP Sure Start subsystem and ensure that the Windows Event Viewer is updated with any events that are not already recorded there:

- Windows Boot
- Windows Resume from Sleep/Hibernate
- HP Sure Start with dynamic protection runtime event notifications
- HP Sure Start Runtime Intrusion Detection (RTID)

HP Notifications Software populates HP Sure Start events into a unique "HP Sure Start" application event log. Only HP Sure Start events will be included in this log. The Windows Event Viewer path to the HP Sure Start events is the following: System Tools/Event Viewer/ Applications and Services Logs/HP Sure Start.

The Windows Event Viewer level categories related to HP Sure Start events are defined in Table 1. The events are populated into Windows Event Viewer in the order that they were generated by HP Sure Start. The oldest event in the HP Sure Start subsystem is added to the Windows Event Viewer first and the most recent event is added last.

The timestamp for each Windows Event Viewer entry is the time it was added to that log, NOT the time the event occurred. Each Sure Start Windows Event Viewer entry includes detailed data within the event details, which includes the timestamp of the actual occurrence.

Note: Events are persistent in the HP Endpoint Security Controller even after being copied to the Windows Event Viewer. If the Windows Event Viewer is cleared, the HP Notifications Software application will replace all HP Sure Start entries on the next event that triggers it to check for HP Sure Start event logs.

Table 1:
Types of HP Sure Start Windows Event Viewer events protection and resiliency

Event Level	Definition
Info	Events that are expected to occur during the normal course of operation (e.g., updating the BIOS).
Warning	Unexpected events that have occurred but were fully recovered from by HP Sure Start and no user/admin action is required for the platform to be fully operational. These events are anomalous operations that the user/admin may want to investigate further, especially if there is a trend of these events across multiple machines.
Error	Events that require the admin/HP service to act on the platforms to fully recover.

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HP Sure Start provides superb firmware protection

Out of the box, the HP system BIOS enables and optimizes HP Sure Start policies for the typical user. Since HP Sure Start is enabled by default, the typical user is protected by HP Sure Start without having to modify the settings. For advanced users, the system BIOS provides some control of HP Sure Start behavior, using policy settings in the (F10) BIOS Setup. Unless otherwise noted, these settings and functions are located under Security/BIOS Sure Start.

Note: Policies are stored within the HP ESC nonvolatile memory that is not directly accessible by the host CPU; therefore, a reboot is required before any Sure Start settings take effect.

The following HP Sure Start settings and functions are available:

- Verify Boot Block on Every Boot
- BIOS Data Recovery Policy
- Network Controller Configuration Restore (Intel only)
- Prompt on Network Controller Configuration Change (Intel only)
- Dynamic Runtime Scanning of Boot Block (Intel only)
- HP Sure Start BIOS Setting Protection
- HP Sure Start Secure Boot Keys Protection
- Enhanced HP Firmware Runtime Intrusion Prevention and Detection (Intel only)
- HP Firmware Runtime Intrusion Detection (AMD only)
- HP Sure Start Security Event Policy
- HP Sure Start Security Event Boot Notification
- Lock BIOS Version
- Save/Restore MBR of System Hard Drive
- Save/Restore GPT of System Hard Drive
- Boot Sector (MBR/GPT) Recovery Policy
- DMA Protection
- DMA Pre-boot Protection

Verify Boot Block on Every Boot

HP Sure Start always verifies the integrity of the system flash BIOS boot block before resuming from sleep, hibernate, or power-off. When set to enable, HP Sure Start will also verify the integrity of the boot block on each warm boot (Windows restart). The trade-off to consider is faster restart time versus more security. The default setting of this feature is set to “Disable”.



BIOS Data Recovery Policy

When set to Automatic, HP Sure Start automatically repairs the BIOS or the Machine Unique Data when necessary. When set to Manual, HP Sure Start requires a special key sequence to proceed with the repair. In the case of an issue with the boot block code, the system will refuse to boot, and a unique blink sequence will flash on the system LED. The system LED that lights may vary by platform and by instance. In the case of an issue with the Machine Unique Data, the system will display a message on the screen. The key sequence required, and the blink sequence displayed, vary depending whether the system is a notebook, a desktop, or a tablet. Manual mode is useful to users who can perform forensics on the system flash contents before repair. Typical users are not encouraged to use manual mode. The default setting of this feature is set to “Automatic”.

Network Controller Configuration Restore (Intel only)

When selected, HP Sure Start immediately restores the network controller configuration to factory defaults.

Prompt on Network Controller Configuration Change (Intel only)

HP provides a factory-defined network controller configuration which includes the MAC address. When this setting is set to enable, the system monitors the state of the network controller configuration and prompts the user in the event of a change from the factory-configured state. The default setting of this feature is set to “Disable”.

Dynamic Runtime Scanning of Boot Block (Intel only)

When in the default setting of enable, HP Sure Start periodically checks the integrity of the BIOS boot block while the OS is running. When in the disable setting, HP Sure Start only checks the integrity before a boot or resume from sleep or hibernate.

HP Sure Start BIOS Setting Protection

The BIOS setting protection policy is disabled by default. To enable the feature, the owner/administrator of the client device should first configure all BIOS policies to the preferred setting. The owner/ administrator also must configure a BIOS setup administrator password.

Once that is completed, the BIOS setting protection policy should be changed to “Enable.” At this point, a backup copy of all BIOS settings is created in the HP Sure Start–protected storage. Going forward, none of the BIOS settings can be modified locally or remotely. On each boot, the BIOS policy settings are verified to be in the desired state, and if there is any discrepancy, the BIOS settings are restored from the HP Sure Start–protected storage.

To modify a BIOS setting, the BIOS administrator password must be provided and BIOS setting protection subsequently disabled, at which point changes can be made to the BIOS settings.

HP Sure Start Secure Boot Keys Protection

With this setting at the factory default of enable, HP Sure Start provides enhanced protection of the secure boot databases and keys used by BIOS to verify the integrity and authenticity of the OS bootloader before launching it at boot. When set to “Disable”, only standard UEFI secure boot variable protection is used, and no backup copy is kept by the HP Sure Start subsystem.

HP Firmware Runtime Intrusion Prevention and Detection (RTID)

The RTID feature is enabled by default for all platforms shipped from the HP factory. There is no need for the end customer/administrator to enable or otherwise deploy the feature to take advantage of HP Sure Start RTID. The RTID feature can be optionally be set to “Disable” by the platform owner/ administrator.

HP Sure Start Security Event Policy

This BIOS policy setting controls what action is taken when HP Sure Start detects an attack or attempted attack while the OS is running. There are three possible configurations for this policy:

- Log event only: When this setting is selected, the HP ESC logs detection events, which can be viewed in the Applications and Services Logs/HP Sure Start path of the Microsoft Windows Event Viewer[4].
- Log event and notify user: This is the default setting. When this setting is selected, the HP ESC logs detection events, which can be viewed in the Applications and Services Logs/HP Sure Start path of the Microsoft Windows Event Viewer. Additionally, the user is notified within Windows that the event occurred[5].
- Log event and power off system: When this setting is selected, the HP ESC logs detection events, which can be viewed in the Applications and Services Logs/HP Sure Start path of the Microsoft Windows Event Viewer. Additionally, the user is notified within Windows that the event occurred, and that system shutdown is imminent.

HP Sure Start Security Event Boot Notification

This BIOS policy setting controls whether HP Sure Start warnings and error messages that are displayed when the system is booted require the local user to acknowledge the error before the boot continues. With the default Require Acknowledgement setting, the system halts with the error message displayed. The local user must press a key to continue the boot. If changed to Time out after 15 seconds, the message is displayed, but the boot process continues automatically after the message is displayed for 15 seconds.



Lock BIOS Version

In the (F10) BIOS setup, this feature is located in Main/Update System BIOS.

When set to “Disable”, you can update the BIOS using any supported process. When the HP ESC detects a valid boot block update in the system flash, it updates the backup copy of the boot block.

When set to “Enable”, all HP BIOS update tools refuse to update the BIOS. In addition, HP Sure Start protects the BIOS from attempts to change the BIOS version by removing the system flash via an unauthorized method. The HP ESC records the locked-down version of BIOS. When the HP ESC detects that the BIOS in the system flash changed, the HP ESC overwrites the BIOS boot block with the HP ESC copy of the boot block. The HP ESC copy of the boot block executes and recovers the remainder of the correct version of the BIOS. The default setting of this feature is “Disabled”.

Save/Restore MBR of System Hard Drive and Save/Restore GPT of System Hard Drive

In the (F10) BIOS setup, this feature is located in Security/Hard Drive Utilities. Only one of these capabilities is available, depending on the partition type of the primary drive (GPT or MBR), as detected by HP Sure Start.

When set to “Enable”, HP Sure Start maintains a protected backup copy of the MBR/GPT partition table from the primary drive and compares the backup copy to the primary on each boot. If a difference is detected, the user is prompted and can choose to recover from the backup to the original state, or to update the protected backup copy with the changes. The Boot Sector (MBR/GPT) Recovery Policy can optionally be used to remove the user decision for the action taken in the event of a discrepancy found by HP Sure Start.

When set to “Disable” (default), no MBR/GPT protection is provided by HP Sure Start.

Boot Sector (MBR/GPT) Recovery Policy

When set to Local User Control (default) the user is prompted for the action to take when HP Sure Start detects a change in the MBR/GPT partition table. When set to Recover in the event of corruption, HP Sure Start automatically restores the MBR/GPT to the saved state any time differences are encountered.

DMA Protection

When set to "Enable" (default), HP firmware configures the IO Memory Management Unit (IOMMU) to block DMA (Direct Memory Access) by peripheral devices per the Pre- Boot DMA Protection setting while in the BIOS pre-boot environment. The BIOS will also configure the system appropriately to enable Microsoft Kernel DMA protection for Thunderbolt 3 which takes over management of the IOMMU at OS start time to provide the same protections from DMA attacks in the OS environment.

Pre-boot DMA Protection

When set to "All PCI-e Devices", HP firmware configures the IO Memory Management Unit (IOMMU) to block DMA (Direct Memory Access) by peripheral devices per the Pre-Boot DMA Protection setting while in the BIOS pre-boot environment. Available options and defaults vary as shown in the table below.

Table 2:
Pre-boot DMA protection options and defaults

Notebook with Thunderbolt support	Notebook without Thunderbolt support	Desktop with Thunderbolt support	Desktop without Thunderbolt support
Thunderbolt Only	Disabled	Thunderbolt Only	Disabled
All PCI-e devices (Default) (Recommended)	All PCI-e devices (Default) (Recommended)	All PCI-e devices (Recommended)	All PCI-e devices (Recommended)
-	-	All PCI-e devices (Default)	All PCI-e devices (Default)

Remote management of HP Sure Start policy controls

Out of the box, HP Sure Start policies are optimized for the typical user. Since HP Sure Start is enabled by default, there is no need for the remote administrator to take any action to enable ("deploy") HP Sure Start. If a remote administrator wants to modify HP Sure Start policy settings, the same Windows Management Instrumentation (WMI) APIs or HP BIOS Configuration Utility scripts that are used to manage other platform BIOS policies can be used to manage HP Sure Start policies. In addition, administrators can remotely manage HP Sure Start capabilities with the Manageability Integration Kit (MIK) plug-in for Microsoft System Center Configuration Manager (SCCM).

Also, administrators can remotely manage HP Sure Start capabilities and view HP Sure Start events with the Manageability Integration Kit (MIK) plug-in for Microsoft System Center Configuration Manager (SCCM).

Conclusion

HP Sure Start delivers these key benefits:

- Uninterrupted productivity: HP Sure Start maintains business continuity in the event of an attack or accidental corruption by eliminating downtime waiting for an IT/Service event.
- Lower cost: HP Sure Start's ability to recover automatically reduces calls to the IT Help Desk and enhances productivity, which ultimately helps lower the maintenance cost for the platform.
- Peace of mind: HP Sure Start has multiple security features that run across a wide variety of software and hardware platforms.

Protect critical BIOS firmware from malware with the industry-leading firmware intrusion detection and automatic repair offered by HP Sure Start, available on many HP business PCs, including Pro and Elite platforms, Workstations, Thin Clients, and Retail Point of Sale (RPOS) PCs.

Learn more hp.com/go/computersecurity
Links to technical content support.hp.com/us-en/topic/goIT

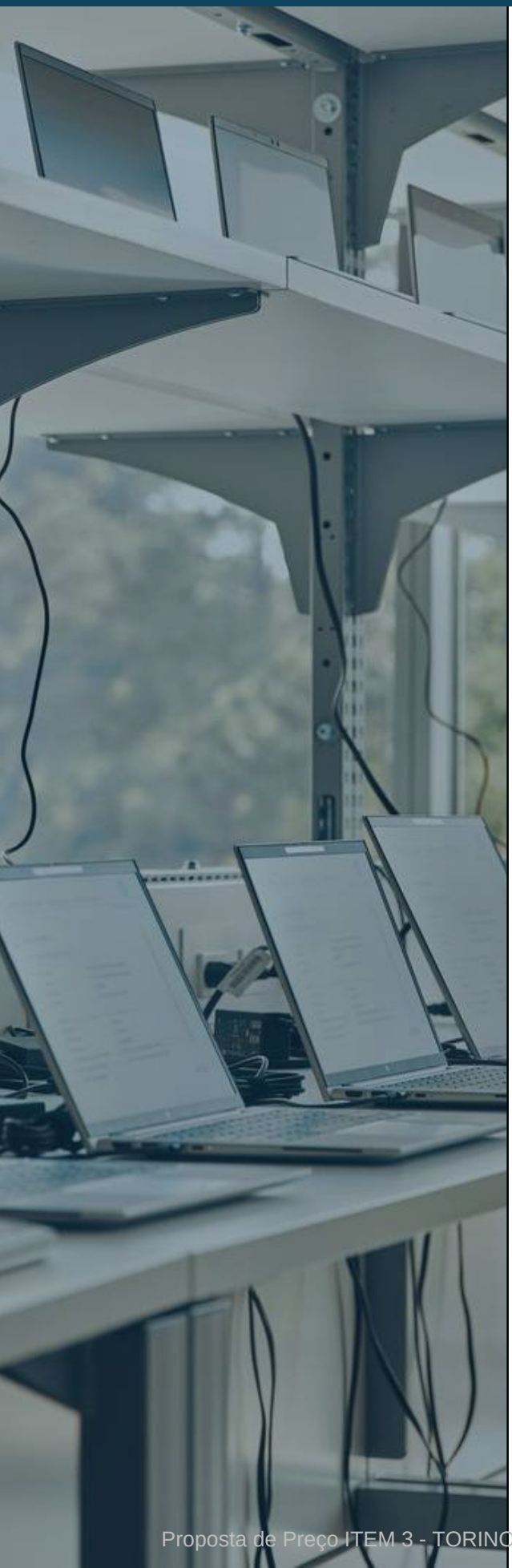
Appendix A - Sure Start, Gen by Gen

HP introduced Sure Start in 2014. Since that time, HP has enhanced Sure Start and expanded the number of products that use it. The table below provides a summary of the capabilities that were added with each generation.

Table 3:
Sure Start, Gen by Gen

Generation	Release Date	Capabilities Added
HP Sure Start	2013	▪ Firmware and BIOS authenticity enforcement, with the ability to self-heal ▪ Firmware monitoring and compliance
HP Sure Start with Dynamic Protection	2015	▪ Windows Event Viewer support ▪ Dynamic Protection (for select Intel products)
HP Sure Start Gen3 (select intel products)[6]	2017	▪ Runtime Intrusion Detection ▪ BIOS setting protection ▪ Manageability Integration Kit (MIK) plug-in for Microsoft SCCM
HP Sure Start Gen4[7]	2018	▪ Protected storage—strong cryptographic methods to store BIOS settings, user credentials, and other settings in the HP Endpoint Security Controller hardware to provide integrity protection, tamper detection, and confidentiality protection for that data ▪ Secure boot database protection—enhanced protection of databases and keys stored by BIOS that are critical to the integrity of the OS secure boot feature versus standard UEFI BIOS implementation ▪ On Intel platforms, enhanced protection and recovery of the Intel Management Engine Firmware for any failures that occur across updates or failure of main Intel ME firmware ▪ Third-party security certification of HP Endpoint Security Controller—testing by an independent and accredited laboratory to validate that the HP ESC hardware core functionality works as claimed per publicly available criteria, methodology, and processes[1] ▪ HP business PCs with HP Sure Start exceed the NIST Platform Firmware Resiliency guidelines (Special Publication 800-193) for host processor boot firmware and other critical platform device firmware, as discussed in Appendix C.
HP Sure Start Gen5[8]	2019	▪ Full back-up, integrity monitoring, and recovery services for of Intel Manageability Engine firmware including main firmware and boot critical portions of code and data. ▪ DMA Protection for attacks via Thunderbolt devices
HP Sure Start Gen6[9]	2020	▪ Smart flash ▪ Enhanced DMA protection for attacks via internal devices slots ▪ HP Endpoint Security Controller run-time Intrusion detection ▪ AMD Secure Processor firmware protection
HP Sure Start Gen7[10]	2023	▪ FIPS 140-3 Certification ▪ SPI Host Interface monitoring

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Appendix B

System Management Mode (SMM) Overview

System Management Mode (SMM) is an industry-standard approach used for PC advanced power-management features and other OS-independent functions while the OS is running. While the SMM term and implementation is specific to x86 architectures, many modern computing architectures use a similar architectural concept.

SMM is configured by the BIOS at boot time. The SMM code is populated into the main (DRAM) memory. Then BIOS uses special (lockable) configuration registers within the chipset to block access to this area when the microprocessor is not executing in an SMM context. At runtime, entry into SMM mode is event-driven. The chipset is programmed to recognize many types of events and timeouts. When such an event occurs, the chipset hardware asserts the System Management Interrupt (SMI) input pin. At the next instruction boundary, the microprocessor saves its entire state and enters SMM.

As the microprocessor enters SMM, it asserts a hardware output pin, SMI Active (SMIACT). This pin serves notice to the chipset hardware that the microprocessor is entering SMM. An SMI can be asserted at any time, during any process operating mode, except from within SMM itself. The chipset hardware recognizes the SMIACT signal and redirects all subsequent memory cycles to a protected area of memory (sometimes referred to as the SMRAM area), reserved specifically for SMM. Immediately after receiving the SMI input and asserting the SMIACT output, the microprocessor begins to save its entire internal state to this protected memory area.

After the microprocessor state has been stored to SMRAM memory, the special SMM handler code that also resides in SMRAM (placed there by system BIOS at boot time) begins to execute in a special SMM operation mode. While operating in this mode, most hardware and memory isolation mechanisms are suspended, and the microprocessor can access virtually all resources in the platform to enable it to perform required tasks. The SMM code completes the required task, and then it's time to return the microprocessor to the previous operating mode. At that point, the SMM code executes the Return from System Management Mode (RSM) instruction to exit SMM. The RSM instruction causes the microprocessor to restore its previous internal state data from the copy saved in SMRAM upon SMM entry. Upon completion of RSM, the entire microprocessor state has been restored to the state just prior to the SMI event, and the previous program (OS, applications, hypervisor, etc.) resumes execution right where it left off.

Appendix C

NIST SP 800-193: Platform Firmware Resiliency Guidelines

Released in May 2018, the NIST SP 800-193: Platform Firmware Resiliency Guidelines describe guidelines for security mechanisms to protect platform firmware against unauthorized changes, detect unauthorized changes that occur, and recover from these unauthorized changes.

These guidelines outline three different resiliency properties:

1. Protected: meets all Protection and Secure Update requirements
2. Recoverable: meets all Detection and Recovery requirements
3. Resilient: meets all Protection, Detection, and Recovery requirements

Of these three properties, Resilient is the strongest, providing the most benefit to HP Customers.

HP Sure Start Gen3+ meet and exceed all Resilient guidelines in NIST SP 800-193 for host processor boot firmware, also known as the UEFI BIOS. Further, HP Sure Start Gen3 and subsequent generations progressively expand the number of other firmware based Critical Platform Device Firmware that are protected per NIST 800-193 requirements, as shown in Table 3.

Prior NIST guidelines for BIOS security

NIST SP 800-193 goes beyond NIST SP 800-147, which only addressed protection and the secure update of the platform's UEFI BIOS. All generations of HP Sure Start along with all generations of HP BIOSphere support NIST SP 800-147.

NIST SP 800-193 also goes beyond NIST SP 800-155, which outlined security components and guidelines to establish a secure BIOS integrity measurement and reporting chain. Likewise, all generations of HP Sure Start along with all generations of HP BIOSphere support NIST SP 800-155.

NIST SP 800-193 Critical Platform Devices in HP Commercial PCs

NIST SP 800-193 acknowledges that the definition of Critical Platform Devices can vary. Critical Platform Devices are defined in section 3.2 (Resiliency Properties):

"For a platform as a whole to claim resiliency to destructive attacks, the set of platform devices necessary to minimally restore operation of the system, and sufficient to restore reasonable functionality, should themselves be resilient. We call this set of devices critical platform devices. The particular resiliency properties may vary from platform-to-platform."

For that reason, it is important to define this set of devices and applicable firmware for HP Commercial PCs. NIST SP 800-193 provides a reference platform architecture in Section 2 along with a list of devices which are "often critical to the normal and secure operation of a platform." The table below provides a mapping to each of those devices/subsystems to the applicable firmware components in the HP Commercial Notebook PCs.

Note that each customer environment should be evaluated to determine whether there are additional peripheral devices that are critical to restore reasonable functionality specific to the customer's deployment.

Table 4:
Critical Platform Device Firmware Protected by HP Sure Start or other technology.

NIST SP 800-193 Platform Architecture Reference	HP Commercial PC critical platform device firmware	Protected by
1. Embedded Controller (EC)/ Super I/O (SIO) 4. Host Processor 6. Graphics Processing Unit (GPU) when implemented as Unified Memory Architecture (UMA) 8A. Host Controller (HC) for mass storage device 10. Host Processor Boot Firmware 11. Platform Runtime Firmware 12. Power Supply 14. Fans	HP ESC firmware HP UEFI BIOS firmware	HP Sure Start Gen3+
2. Trusted Platform Module (TPM)	Discrete TPM component firmware[1]	TPM
3. Baseboard Management Controller (BMC)/ Management Engine (ME)	Intel Management Engine firmware or AMD Secure Processor firmware	HP Sure Start Gen5+ HP Sure Start Gen6+
5. Network Interface Controller (NIC)	Intel integrated GbE NIC firmware[2]	HP Sure Start Gen3+
7. Serial Peripheral Interface (SPI) Flash	Intel Descriptor firmware	HP Sure Start Gen3+
8A. Hard Disk Drive (HDD)/Solid State Drive (SSD)	HDD/SSD firmware[3]	N/A[4]
9. Embedded MultiMediaCard (eMMC) / Universal Flash Storage (UFS)	N/A[4]	N/A[4]
13. Glue Logic (CPLD's, FPGA's)	N/A[4]	N/A[4]

1. This component is not critical to boot of the platform.
2. This component is not critical to minimally restore operation of the system but is required to establish Ethernet connectivity in environments where that connectivity is deemed critical to platform resiliency.
3. Mass storage devices are outside the scope of this document. Resiliency capabilities vary by storage supplier and by storage device. Not all suppliers or devices currently meet all Resiliency requirements in 800-193.
4. No devices of this type are included.

Acronyms

- BIOS
  Basic Input/Output System (aka host processor boot firmware)
- CPU
  Central processing unit
- ESC
  HP Endpoint Security Controller
- Gen3+
  Applies to HP Sure Start Gen3, Gen4, Gen5, Gen6, and Gen7
- Gen4+
  Applies HP Sure Start Gen4, Gen5, Gen6, and Gen7
- Gen5+
  Applies HP Sure Start Gen5, Gen6, and Gen7
- Gen6+
  Applies only to HP Sure Start Gen6, and Gen7
- HMAC
  Hash-based message authentication code
- HW
  Hardware
- OS
  Operating system
- POST
  Power-On Self-Test
- RoT
  Root of Trust (defined in NIST SP 800-193)
- RTD
  Root of Trust for Detection (defined in NIST SP 800-193)
- RTRec
  Root of Trust for Recovery (defined in NIST SP 800-193)
- SMM
  System Management Mode
- UEFI
  Unified Extensible Firmware Interface

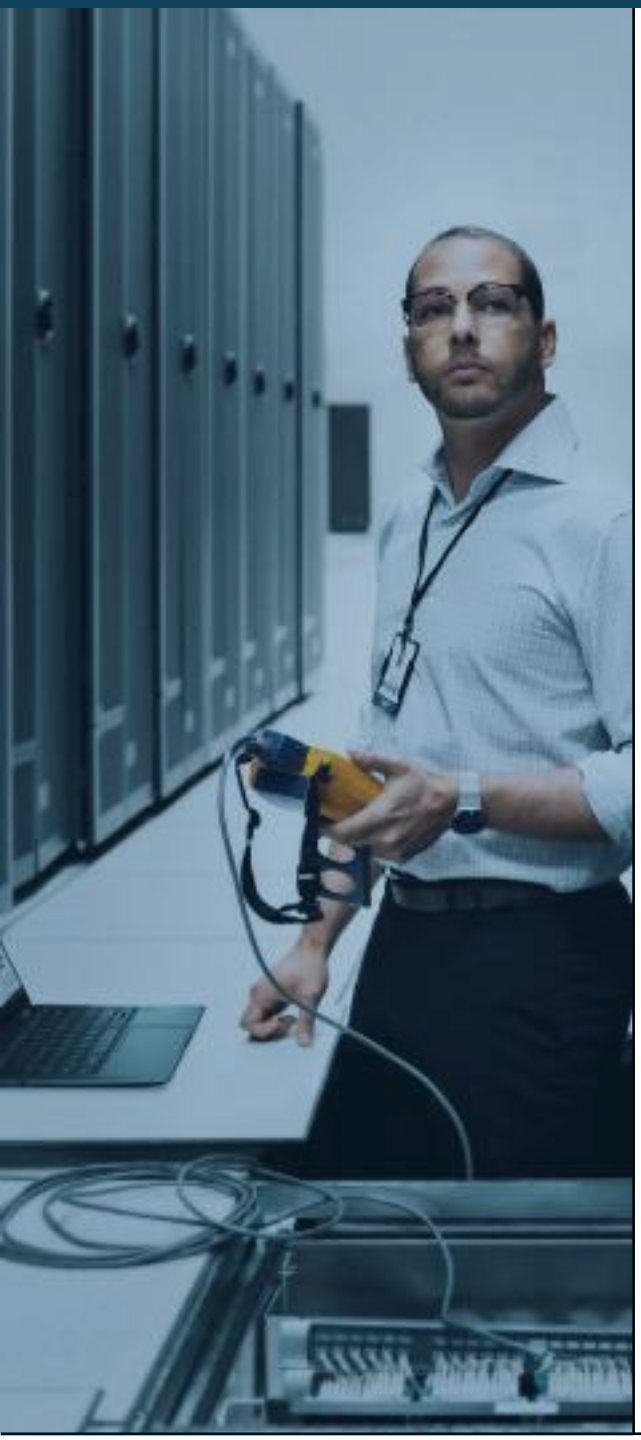
Table 5:
Required functions for Host Processor Boot Firmware.

The table below provides a summary of each function described by NIST SP 800-193.

NIST SP 800-193	HP Sure Start	
Roots of Trust (Section 4.1)	Meets all Resiliency Requirements	▪ Gen3+ uses a hardware-based RoT (the HP ESC) with immutable boot firmware, which cryptographically verifies subsequent firmware before launching it, creating a Chain of Trust. ▪ Gen3+ includes a key store and approved digital signing algorithms based on FIPS 186-4 to verify the digital signature of firmware update images. ▪ Gen3+ uses authenticated update, detection, and recovery mechanisms, which are anchored in Gen3+'s HW-based RoT.
Protection and Update of Mutable Code (Section 4.2.1)	Meets all Resiliency Requirements	▪ Gen3+ uses an authenticated update mechanism anchored in Gen3+'s ▪ HW-based RoT. ▪ Firmware update images are digitally signed by HP's code signing service (HP Secure Sign) and verified by Gen3+ prior to updating. ▪ Gen3+ integrity protects the HP ESC and UEFI flash regions, so that only its authenticated update mechanism or a secure local update through physical presence can modify those flash regions. ▪ Gen3+ has no known authenticated update bypass mechanisms and contains the ability to prevent rollback to earlier authentic firmware images with known security vulnerabilities.
Protection of Immutable Code (Section 4.2.2)	Meets all Resiliency Requirements	▪ Gen3+ uses a hardware-based RoT (the HP ESC) with immutable boot firmware.
Runtime Protection of Critical Platform FW (Section 4.2.3)	Meets all Resiliency Requirements	Critical Platform Firmware executing in volatile storage (RAM) runs and: ▪ Ceases its operation prior to the loading of system software. That is, it runs during POST and stops before the OS is loaded. ▪ is protected from system software using SMM protections enforced by the CPU.
Protection of Critical Data (Section 4.2.4)	Meets all Resiliency Requirements	▪ Gen4+ Critical Data, such as Secure Boot authenticated variables, are only modifiable through defined APIs provided by device firmware. These APIs employ a mechanism to authenticate that the data is originating from an authorized source before applying the change. ▪ Gen4+ Critical Data, such as per-platform unique factory configuration settings, are only modifiable through defined APIs provided by device firmware. These APIs employ a mechanism to authenticate that the request is originating from an authorized HP service provider before they allow the change. ▪ Gen4+ Critical Data, such as BIOS settings that can be configured in the field, are only modifiable through defined APIs. These APIs are accessed only via a system administrator who has configured the BIOS administrator password. ▪ Gen3+ factory default settings, which are not per- platform-specific, employ the same protection as the code. This includes integrity and authenticity verification via digital signature. These setting updates are controlled and protected in the same manner as the firmware.

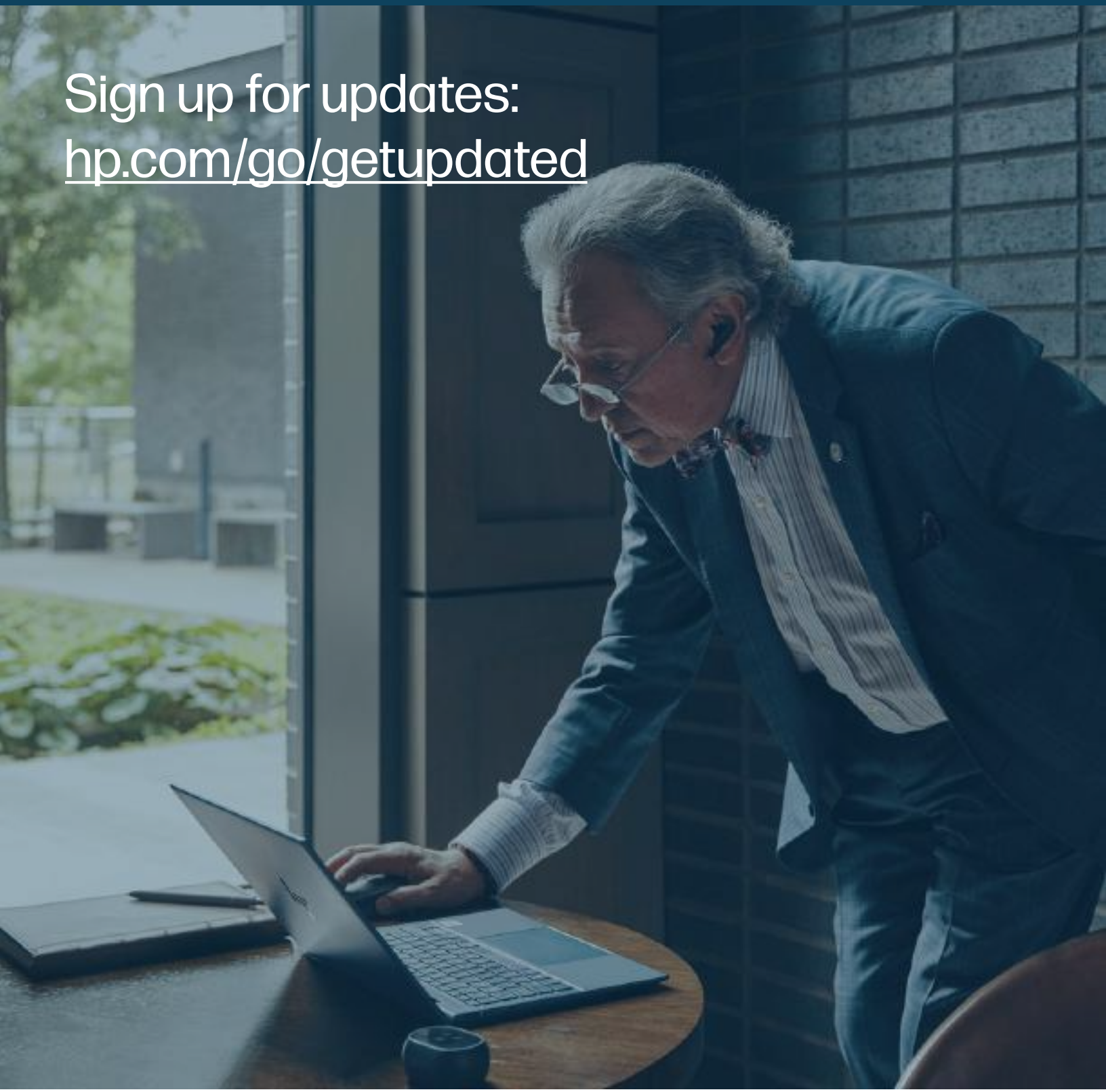
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NIST SP 800-193	HP Sure Start	
Detection of Corrupted Code (Section 4.3.1)	Meets all Resiliency Requirements	▪ A successful attack on the platform firmware will not impact Gen3+'s RTD. The RTD is maintained in a private flash area inaccessible to the system software that might compromise the platform firmware. ▪ Firmware code is validated by Gen3+'s RTD using approved digital signature algorithms and cryptographic hashes.
Detection of Corrupted Critical Data (Section 4.3.2)	Meets all Resiliency Requirements	▪ A successful attack on the Active Critical Data will not impact Gen3+'s RTD. The RTD is maintained in a private flash area inaccessible to the system software that might compromise Active Critical Data. ▪ Gen3+ can save and validate critical data through use of digest hashes prior to using that critical data, and Gen3+ can initiate a recovery of the critical data if corruption is detected.
Recovery of Mutable Code (Section 4.4.1)	Meets all Resiliency Requirements	▪ Gen3+'s ESC implements the recovery capability. ▪ A successful attack on the platform firmware will not impact Gen3+'s RTRec. The RTRec is maintained in a private flash area inaccessible to the system software that might compromise the platform firmware. ▪ Gen3+'s RTRec has access to a locally stored copy of the platform's UEFI image in its private flash area, which is inaccessible to (protected from) system software. ▪ Gen3+ can update the locally stored authentic UEFI image in its private flash area through an Authenticated Update mechanism.
Recovery of Critial Data (Section 4.4.2)	Meets all Resiliency Requirements	▪ Gen3+'s ESC implements the recovery capability. ▪ A successful attack on Active Critical Data will not impact Gen3+'s RTRec. The RTRec is maintained in a private flash area inaccessible to the system software that might compromise Active Critical Data. ▪ Gen3+ can recover critical data back to factory defaults including per-platform-specific data that is backed up in isolated & protected storage. ▪ Gen3+ can recover non-per-platform-specific defaults from the backup BIOS image stored in isolated and protected storage. ▪ Gen3+ does not use policies included as part of Critical Data to restore critical data.
Logging and notification	Exceeds all Resiliency Requirements	▪ Gen3+ will notify user of corruption and log the event. ▪ Gen3+'s detection mechanism is capable of logging events when corruption ▪ is detected Gen3+ will notify user of a recovery event and log the event. ▪ Gen3+'s detection mechanism is capable of logging events when a recovery action has taken place.
Policy-based controls	Exceeds all Resiliency Requirements	▪ Gen3+'s detection mechanism has policies which control the action taken by the Runtime Detection.



NIST SP 800-193	HP Sure Start	
Automatic or manual recovery options	Exceeds all Resiliency Requirements	▪ Gen3+ Runtime Detection can initiate a recovery process automatically or after notification of detection corruptions to the user. ▪ Gen3+ can automatically perform its recovery operations without user interaction or it may require user approval, dependent on policy setting. ▪ Gen3+ gains approval from the user before replacing the current Critical Data, based on recovery policy setting. ▪ Gen3+ can recover Critical Data back to a last-known good state. ▪ Gen3+ gains approval from the user before replacing the current Critical Data, based on recovery policy setting.
Local or remote IT Recovery	Exceeds all Resiliency Requirements	▪ Gen3+ can automatically perform its recovery operations without user interaction or may require user approval, dependent on policy setting.
Rollback pre-vention	Exceeds all Resiliency Requirements	▪ Gen3+ and the UEFI boot block both have controls in place to protect against recovery to an earlier firmware version with security weaknesses.
Runtime intru-sion detection	Exceeds all Resiliency Requirements	▪ NIST SP 800-193 is silent on what happens to firmware once it is loaded from nonvolatile storage (flash) into volatile storage (RAM) for execution. Gen3+ provides runtime intrusion detection of UEFI SMM code loaded into SMM RAM.
Physical attack detection	Additional Functionality not required in NISTSP800-193	▪ Gen4+ provides protection against physical attacks to the protected backup copy of dynamic critical data. ▪ AES encryption is used on a per-component unique key to provide confidentiality of private data. In addition, HMAC integrity measurements provide tamper prevention/detection of those keys.

1. The HP Sure Start controller hardware has been certified per the CSPN certification framework.
2. HP Sure Start with Dynamic Protection is available on HP Elite products equipped with 6th generation Intel Core processors and higher.
3. HP Sure Start end user notifications and pushing of HP Sure Start events to OS event viewer support is limited to Windows Operating system. These features are not supported in Linux.
4. HP Notification Software must be installed to view HP Sure Start events in the Windows Event Viewer.
5. HP Notification Software must be installed to receive notifications.
6. HP Sure Start Gen3 is available on HP Elite products equipped with Intel 7th generation processors.
7. HP Sure Start Gen4 is available on HP Elite and HP Pro 600 products equipped with 8th generation Intel or AMD processors.
8. HP Sure Start Gen5 is available on select HP PCs with Intel processors. See product specifications for availability.
9. HP Sure Start Gen6 is available on select HP PCs.
10. HP Sure Start Gen7 is available on select HP PCs.



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4AA7-6645ENW, January 2024

Technical white paper

HP Support Assistant

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Solution overview

HP Support Assistant is a one-stop solution for connected, contextual support. Aided with a new user interface and other usability enhancements, HP Support Assistant helps you maintain your HP devices— enabling you to prevent or resolve problems by using automated updates and self-help options. What's more, HP Support Assistant guides you to expert support when you need it.

Requirements and setup

HP Support Assistant is ready to go when you turn on your new HP desktop and notebook models running Microsoft Windows 11 or Windows 10 RS4 (and higher).

Once installed, you can find HP Support Assistant on your PC using one of the following two methods:

1. Access HP Support Assistant by clicking the question mark (?) icon in the taskbar. (If you do not see HP Support Assistant already pinned in your taskbar, please see the 'How do I add the HP Support Assistant icon to my taskbar?' item in the Frequently Asked Questions section of this document.)

2. Use the Windows search function and simply type 'HP Support Assistant'.

You can download the latest version of HP Support Assistant here.

Key features

HP Support Assistant features can be accessed by selecting the various cards on your device's page. The cards allow you to access your updates, messages, diagnostics, specifications, warranty information, contact HP support options, and other useful resources for your HP devices.

HP Services and offers

If available in your region, your HP Services can be found in the left navigation bar of the HP Support Assistant window. HP Services provides relevant service offers based on regional and country business rules as well as your device specifications. You can also find promotional codes, discount offers, coverage remaining and status for the various services here. Some of the services offered include consumer and commercial HP Care Packs, SmartFriend, McAfee, and Instant Ink.

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Your devices

Adding devices

You can add more of your HP devices within your environment by clicking on the ‘Add device’ button in the HP Support Assistant window. After clicking on ‘Detect my devices’, HP Support Assistant will scan for printers attached to your network. You will be able to select from a list of detected printers and type in a custom name, for example ‘My home printer’. You can also manually add a device in the same window by typing the serial number in the appropriate field, then clicking ‘Find my device’.

Updates and Messages

HP Support Assistant automatically performs a weekly background scan for new messages and updates. During the scan, HP Support Assistant detects your devices, checks their status, and then populates relevant messages and software updates. The messages and software updates are split into two separate cards on the dashboard and include different priority categories. These categories are *important*, *recommended*, and *optional*. *Important* messages and updates are critical in nature and can address issues, improving overall reliability. *Recommended* messages and updates are less critical in nature but can be useful in improving the performance of your HP PC and printers. *Optional* messages and updates can help to improve your experience. For example, if during the weekly scan HP Support Assistant determines that your Windows firewall is disabled, a *recommended* message will be delivered with information on how to address this condition.

Windows security

The information displayed in the Security card of HP Support Assistant is useful in identifying key settings and options for your device. General security settings include network firewall status, virus protection status, and spyware and unwanted applications protection status.

Troubleshooting

HP Support Assistant includes Fixes & Diagnostics as well as Guided Troubleshooters through our Virtual Agent for a variety of issues including operating system, display, power, performance, audio, and storage. These troubleshooters will work to solve problems automatically or will guide you through steps involved in resolving more complicated issues with our Virtual Agent.

For printers, HP Support Assistant provides troubleshooting tools that can help resolve common problems you might experience when your HP printer is connected to any Windows-based computer.

HP is always working to develop new self-help tools and improve our library of current solutions so be sure to open HP Support Assistant the next time you run into technical issues.

Fixes & Diagnostics

HP Support Assistant offers variety of one-click-fixes which are designed to troubleshoot and automatically fix various issues in PCs.

The Operating System Check tool performs a comprehensive scan to identify common issues within the operating system and auto applies the necessary fixes.

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The Performance Tune-up tool analyzes the system to identify areas which may be causing slower performance and can clean up subsequent files and caches.

The Audio Check tool can identify various issues with audio and can apply auto fixes to volume and microphone issues, primary audio devices, re-installation of drivers, and provide virtual support if needed.

The Battery Check tool tests the functionality of the battery and can show both basic or advanced information on the results as well as offering a link to purchase a replacement if needed.

The Network Check tool detects an operating system's common problems with a network and can reset the adapters and apply fixes automatically.

Printer fixes and diagnostics can also be found in the same section. HP Support Assistant provides tools that can help resolve common problems you might experience when your HP printer is connected to any Windows-based computer.

Virtual Agent

The HP Virtual Agent (VA) is an AI-driven bot that allows you to chat using Natural Language Processing (NLP). The VA will discover your intent from your input and direct you to the most relevant solutions, whether it be a knowledge-based document, a guided troubleshooter, or a turn-by-turn solution directly in the VA chat window. Context is passed to the VA to identify specific issues, products, and installed features so you don't have to enter it yourself. The VA can also access HP services such as the Product Content Browser, Warranty Check, and other services to help gather additional context. It is also used to start interactive diagnostics on your devices, such as checking for OS issues. If the Virtual Agent is unable to solve your problem, you also have the option of escalating to a live agent.

Specifications

For PCs, general specifications show information about your operating system version, microprocessor type, system memory configuration, system board, and system basic input/output system (BIOS) revision. The video section shows the graphic device, current resolution, refresh rate, and driver version. The audio section displays a list of configured audio devices, current status, driver name, and version information.

Battery

For devices with batteries, the battery card will be displayed giving you information on overall battery health, useful links, as well as the HP Battery Check tool. The Battery Check tool tests the functionality of the battery and can show both basic or advanced information on the results as well as offering a link to purchase a replacement if needed.

Storage

The storage card also shows the health of your configured storage options as well as displaying model information and storage-related links and tools.

Warranty

Your warranty start and end dates are available under the warranty card. You can also extend your warranty period by purchasing an HP Care Pack or explore other premium services offered by HP.

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Support

Support Resources

Contact HP and other support resources will vary based on country, model, and the status of your warranty coverage.

Contact HP Customer Support options: Online Chat, Call Me, and Call HP

If you've tried everything and still can't find the answers, you can always get assistance from an HP Customer Support agent. Relevant options are available from HP Support Assistant to make this quick and easy. You must be signed-in to HP Support Assistant to use this feature and options are displayed based on several factors, including your model, country, and time of day.

HP Support Community

Join the conversation in HP peer-to-peer forums to find solutions, ask questions, and share tips on HP printers, tablets, and computer products including hardware, software, and operating system support topics.

The support card provides access to a wealth of information from the HP support website for your model.

HP SmartFriend (available in select countries)

Providing technical support for computer software, hardware or peripheral, and networking issues over the phone and through online chat for a single designated computer. No more trying to decide which software or hardware vendor to contact for support, or wasting hours spinning your wheels trying to search for answers. SmartFriend technicians can even access your computer remotely to diagnose and resolve issues.

Virtual Repair Center

Looking to repair your printer, laptop, or other HP device? The new Virtual Repair Center is here to help! Learn how to get your HP device repaired and where to check the status online.

HP Service Center Locator

Need to get your HP device serviced? The new HP Service Center Locator allows you to enter a city or zip code then filter by distance and supported products to discover the best place to take your HP device to be repaired or serviced.

HP Support Cases

If a support case is created for you through any of our HP Support Assistant contact methods, you can track the progress and get updates like repair status under the Support Resources section.

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General

Application settings

Use the Application Settings page (accessed through the navigation bar) to choose how you would like to receive software updates from HP and set scheduling options for the weekly scan. In addition, you can enable HP Support Assistant to use your registration information, including the serial number and product number of your PC and any attached HP printers to provide you with personalized information about your products. You can also choose whether you'd like to share your usage data that will then be used to help HP improve the features and performance of future releases of HP Support Assistant.

Frequently asked questions

HP Support Assistant basics

What is HP Support Assistant?

HP Support Assistant is a self-help application for your HP devices pre-installed on your Windows PCs. It helps you maintain peak performance and resolve problems through automatic updates, built-in diagnostics, and a variety of assistance options including the Virtual Agent. You can also download and install HP Support Assistant by visiting our website.

How much does HP Support Assistant cost?

HP does not charge for the use of HP Support Assistant but may charge for technician assistance on out-of-warranty products.

How do I use HP Support Assistant?

Clicking on the question mark (?) icon in your taskbar gives you simple instructions on the action you need to take, if any. This icon will change based on various factors such as the priority of pending updates and messages, or the status of other parameters like battery health, security, or storage capacity. If you do not see HP Support Assistant already pinned in your taskbar, please see the 'How do I add the HP Support Assistant icon to my taskbar?' item in the Frequently Asked Questions section of this document.

Do I need to be connected to the Internet to use HP Support Assistant?

You do not need to be connected to the Internet to use HP Support Assistant, but some features such as the Virtual Agent, receiving updates, connecting to hp.com, or contacting HP require an Internet connection.

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Finding or installing HP Support Assistant

Is HP Support Assistant available on all computers?

HP Support Assistant is pre-installed on HP computers shipped with Microsoft Windows 11 or Windows 10 RS4 (and higher).

If HP Support Assistant is not installed on your computer, you can download the latest version by visiting our website here. If your PC does not qualify for the latest version, you can download the legacy version of HP Support assistant on the same page.

Note that the HP Support Assistant features may vary depending on the version installed, your computer model, and your location.

Where can I find HP Support Assistant on my computer?

To find HP Support Assistant on your PC, try any of these methods:

• Click on the question mark (?) icon in your taskbar. (If you do not see HP Support Assistant already pinned in your taskbar, please see the 'How do I add the HP Support Assistant icon to my taskbar?' item in the Frequently Asked Questions section of this document.)

• Use the Windows search capability to search for 'HP Support Assistant'.

• If HP Support Assistant is not installed on your computer running Windows 11 or Windows 10 RS4 (and higher), you can download the latest version by clicking here. You can also download the legacy version of HP Support assistant for older devices in the same link.

How do I add the HP Support Assistant icon to my taskbar?

In both Windows 10 and Windows 11 you can use either of the methods below to pin HP Support Assistant to your taskbar.

1. Use the Windows search function to type in 'HP Support Assistant', right-click on HP Support Assistant in the results and select 'Pin to taskbar'.
2. While HP Support Assistant is launched, right-click on the (?) icon in the taskbar and select 'Pin to taskbar'.

If you are in Windows 10 you can also visit the Application Settings section of HP Support Assistant, select the 'More settings' drop-down, and check the 'Display application icon in the taskbar (recommended)' box.

Can I uninstall HP Support Assistant?

You can uninstall HP Support Assistant using the remove program capability in the Apps and Features section of the Windows operating system or by right clicking HP Support Assistant in the start menu and clicking 'Uninstall', but HP does not recommend uninstalling the application. HP Support Assistant allows you to receive updates from HP that keep your PC and printers running smoothly and offers several options whenever you need assistance.

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Can I remove the HP Support Assistant icon from my taskbar?

You can remove the HP Support Assistant icon from your taskbar, but HP does not recommend removing the icon. You would no longer receive notifications of pending actions through your taskbar, and not be able to directly access some of the HP Support Assistant capabilities. Remove the icon from your taskbar by right-clicking the HP Support Assistant icon and selecting 'Unpin from taskbar'.

Can I reinstall HP Support Assistant if I have uninstalled the application?

You can download and install the latest version of HP Support Assistant by clicking here.

Where can I find technical information about my PC and printers?

You can find technical information by selecting the PC or printer you want to view from your list of devices in the HP Support Assistant window. If your device is not present, please refer to the 'How do I add a device to HP Support Assistant?' question in this document.

HP Support Assistant features and functions

How do I check the status of my warranty?

Warranty status can be checked by selecting the device you want to view from your device list in the HP Support Assistant window and then clicking on the warranty card.

How do I keep my devices up to date?

By default, important updates are set to automatically install with HP Support Assistant. HP recommends leaving automatic updates turned on to ensure that you receive the latest updates and messages. If needed, this setting can be turned off by visiting the Software Updates Section of HP Support Assistant (accessible by selecting the settings button at the bottom-left corner of the HP Support Assistant window or selecting 'Update settings' in the Updates card). If you choose to turn off automatic updates you will need to visit HP Support Assistant and manually download and install updates yourself.

How do I add a device to HP Support Assistant?

You can add HP devices to HP Support Assistant by selecting the 'Add device' button in the HP Support Assistant window. HP Support Assistant will scan to detect supported devices connected to your computer or on your network.

How do I change the nickname I have given my printer?

You can edit a device nickname by clicking the 'pencil' icon next to the device's current nickname.

How do I remove a device from my list?

To remove a device from your list just click on your name in the top right of the HP Support Assistant window then select 'View profile' from the drop-down. If you are not signed in the button will say 'Create account / Sign in' instead of your name. Once on your profile, you will see a list of your current devices. Click the blue 'x' next to the device you want to remove.

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Can I receive printer updates?

HP Support Assistant will periodically check for printer updates and notify you. When a printer update is available, you will need to follow the on-screen instructions to complete the installation.

What happens if I postpone an update or want to find previously installed updates?

Any postponed updates can be launched from the action log. The action log is a history of all the actions that have been performed or postponed on the computer. In the action log, status for items is displayed as installed, installation failed, postponed, or deleted.

What kind of messages will I receive in HP Support Assistant?

Messages in HP Support Assistant include helpful tips and information that HP publishes from time to time. These messages can also be important alerts related to the security or functionalities of your HP devices. These messages can be about anything from cleaning your desktop to computer security.

How can I find diagnostics for my computer?

Relevant diagnostics and one-click-fixes can be found in the Fixes & Diagnostics card on your device's dashboard. For more complex problems, the Virtual Agent can give you step-by-step assistance with guided troubleshooting.

At what point do I contact technical support?

HP Support Assistant is designed to provide as much information as possible to help you diagnose and troubleshoot any issues. If HP Support Assistant does not provide an answer to your query, then it is time to contact support. Charges will apply to out-of-warranty products.

How do I contact technical support?

Select the Support Resources section located at the bottom of HP Support Assistant. There are several options available depending on your location, warranty, and availability of service. You will need to select a country and allow HP to check your warranty status to enable one or more of the support options listed below:

1. **Chat:** If you have an active Internet connection, you can chat online with HP Customer Support. Device information, such as your serial number, is automatically relayed from your computer to HP once you approve of that information to be sent.

2. **Call:** When you call HP Customer Support, you may be asked to provide information such as your model number or serial number. Both numbers can be found easily on the device's dashboard. To speed-up issue resolution, your computer can transfer data to HP Customer Support prior to your conversation, if you approve of this information to be sent.

Can I get help and support if I do not have an Internet connection?

HP Support Assistant can use the information and diagnostics on the local computer even without an Internet connection.

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How do I ensure I always have the latest version of HP Support Assistant?

HP Support Assistant will automatically update itself as new versions are released; you do not need to do anything to keep your version up-to-date. If you need to download and install HP Support Assistant you can do so by visiting this link.

Why should I provide feedback to HP?

Providing your feedback allows you to provide input on HP Support Assistant and helps us identify current issues and future improvements for the support application itself.

Where do I get more information about HP Support Assistant?

You can find more information about HP Support Assistant by clicking here.

What are the hardware and software requirements for HP Support Assistant?

HP Support Assistant is pre-installed on HP computers running Microsoft Windows 11 or Windows 10 RS4 (and higher). HP Support Assistant can also be installed on non-HP PCs running Microsoft Windows 11 or Windows 10 RS4 (and higher). Some HP Support Assistant features require an active Internet connection.

Is HP Support Assistant available worldwide in my local language?

The application is available in all countries worldwide and has been translated into the 36 languages listed below.

Languages
Arabic (Saudi Arabia)
Bulgarian
Czech
German (Germany)
Danish
Greek
Spanish (Spain)
English (United States)
Estonian
French (France)
Finnish
Hebrew
Croatian (Croatia)
Hungarian
Italian (Italy)
Japanese
Korean
Lithuanian
Latvian
Norwegian (Bokmål)
Dutch (Netherlands)

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Polish
Portuguese (Portugal)
Portugal (Brazil)
Romanian (Romania)
Russian
Slovak
Slovenian
Serbian (Latin, Bosnia and Herzegovina)
Swedish (Sweden)
Thai
Turkish
Ukrainian
Chinese (Simplified)
Chinese (Traditional)
Chinese (Traditional)

Differences between HP Support Assistant and other software and services

Does HP Support Assistant work with my antivirus software?

HP Support Assistant works independently of any antivirus software application.

What are the differences between Microsoft updates and HP updates?

Windows updates are released by Microsoft to fix or repair issues with Windows products. HP updates are more tailored to your specific HP devices. Using HP updates ensures that you have the latest drivers and software tested and approved by HP.

Conclusion

HP Support Assistant can help keep your HP PCs and printers running smoothly with automatic software and driver updates. A wealth of information and support resources for your devices is only a few clicks away and when the time comes to get additional help, HP Support Assistant gives you multiple options to contact skilled technical support agents.

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Members List

Board

Broadcom Inc. (http://www.broadcom.com)

Cisco (http://www.cisco.com)

Dell Technologies (http://www.dell.com)

Hewlett Packard Enterprise (http://www.hpe.com)

Intel Corporation (http://www.intel.com)

Lenovo (http://www.lenovo.com)

Positivo Tecnologia S.A. (https://www.positivotecnologia.com.br/)

Verizon (http://www.verizon.com)

Leadership

Advanced Micro Devices (http://www.amd.com/)

Alibaba (China) Co., Ltd

Daten Tecnologia Ltda (http://www.daten.com.br)

Ericsson AB (http://www.ericsson.com)

Google LLC (http://www.google.com)

H3C (http://www.h3c.com)

HP, Inc (http://www.hp.com/)

Huawei (http://www.huawei.com/)

IBM (http://www-03.ibm.com/systems/power/)

IEIT SYSTEMS Co., Ltd (https://zh.ieisystem.com/)

Microsoft Corporation (http://www.microsoft.com)

MULTILASER INDUSTRIAL S/A (https://www.multilaser.com.br/)

NVIDIA Corporation (http://www.nvidia.com)

Supermicro (http://www.supermicro.com)

xFusion Digital Technologies Co., Ltd. (http://www.xfusion.com)

Participation

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Ampere Computing LLC (https://amperecomputing.com/)

ARM, Inc (http://www.arm.com)

ASPEED Technology Inc (https://www.aspeedtech.com/)

Atos (https://atos.net/)

Celestica (https://www.celestica.com/)

Code Construct (https://codeconstruct.com.au)

CoreWeave (https://www.coreweave.com/)

Cornelis Networks, Inc. (http://www.cornelisnetworks.com)

DigitalOcean (https://www.digitalocean.com/)

Eaton (http://www.eaton.com/us/en-us.html)

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Insyde Software (http://www.insyde.com)

Jabil (http://jabil.com)

KIOXIA Corporation (http://www.kioxia.com)

LOGIN INFORMATICA (http://www.login.com.br)

Loongson Technology Corporation Limited (http://www.loongson.cn)

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Meta (https://about.facebook.com/meta)

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NetApp (http://www.netapp.com)

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Phoenix Technologies (http://www.phoenix.com)

Qualcomm Inc

Quanta Computer Inc (http://www.quantatw.com/)

Rambus Inc. (https://www.rambus.com)

Realtek Semiconductor (http://www.realtek.com.tw)

Samsung (https://semiconductor.samsung.com/)

Seagate Technology (http://www.seagate.com/)

Solidigm (https://www.solidigm.com/)

Synopsys (http://www.synopsys.com)

Vertiv (http://www.avocent.com)

Western Digital Technologies, Inc. (https://www.westerndigital.com/)

ZT Systems (https://www.ztsystems.com/)

Alliance Partner

Learn more: Current Work Registers (/about/registers)

ASHRAE (https://www.ashrae.org/home)

Broadband Forum (BBF) (https://www.broadband-forum.org/)

China Communications Standards Association (http://www.ccsa.org/cn/english)

China Electronics Standardization Institute (CESI) (http://www.en.cesi.cn/)

CXL Consortium (https://www.computeexpresslink.org/)

ETSI-NFV (http://portal.etsi.org/portal/server.pt/community/NFV/367)

HDBaseT (https://hdbaset.org/)

MIPI Alliance (https://www.mipi.org/)

NVM Express (http://nvmexpress.org/)

OMG-Cloud Working Group (http://www.cloud-council.org)

Open Compute Project (OCP) (http://www.opencompute.org/)

Open Data Center Committee (ODCC) (http://www.opendatacenter.cn/)

Open Fabrics Alliance (OFA) (https://www.openfabrics.org/)

Open Grid Forum (http://ogf.org)

OpenInfra Foundation (https://openinfra.dev/)

PCI Industrial Computer Manufacturer Group (PICMG) (https://www.picmg.org/)

PCI-SIG (https://pcisig.com/)

SNIA (http://www.snia.org/)

TeleManagement Forum (http://www.tmforum.org/)

The Green Grid (http://www.thegreengrid.org)

The Open Group (http://www.opengroup.org)

Unified Extensible Firmware Interface (http://www.uefi.org/)

Universal Chiplet Interconnect Express (UCIe) (https://www.uciexpress.org/)

Academic Alliance

"Gheorghe Asachi" Technical University of Iaşi (http://www.tuiasi.ro/en/)

Arizona State University (https://www.asu.edu/)

Athens University of Economics and Business (https://www.aueb.gr/en)

Dongguk University (http://www.dongguk.edu)

Federal Institute of Technology of Espirito Santo (https://www.ufes.br/)

George Mason University (http://c4i.gmu.edu)

Hungarian Academy Of Sciences Institute For Computer Science And Control (https://sztaki.hu/en)

Indian Institute of Technology Roorkee (https://www.iitr.ac.in/)

Institute of Information Security (IISEC) (https://www2.iisec.ac.jp/english/)

Kasetsart University (https://www.ku.ac.th/th)

Logitrain (https://logitrain.edu.au)

Marshall University (http://www.marshall.edu)

National Technical University of Athens (http://www.ntua.gr/)

Paul Sabatier University (https://www.univ-tlse3.fr/)

Research Center on Scientific and Technical Information (CERIST) (http://www.cerist.dz/index.php/en/)

Ruprecht-Karls-University Heidelberg (https://www.uni-heidelberg.de/en)

Shanghai Jiao Tong University (http://en.sjtu.edu.cn/)

Swami Rama Himalayan University (http://www.srhu.edu.in/)

Technische Universitaet Dresden (https://tu-dresden.de/)

Texas Tech University (http://www.ttu.edu/)

Universidade de Sao Paulo (https://www5.usp.br)

University of California (https://www.universityofcalifornia.edu/)

University of New Hampshire (http://unh.edu)

University of Pisa - Italy (https://www.unipi.it/)

University of Seville (https://www.us.es/)

University of Sydney (https://www.sydney.edu.au/)

University of Western Ontario (https://www.uwo.ca/)

University of Wuerzburg (https://www.uni-wuerzburg.de/startseite/)

CIM Forum Leadership

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Broadcom Inc. (http://www.broadcom.com)

Dell Technologies (http://www.dell.com)

CIM Forum Participatory

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Intel Corporation (http://www.intel.com)

Lenovo (http://www.lenovo.com)

Microsoft Corporation (http://www.microsoft.com)

Supermicro (http://www.supermicro.com)

Verizon (http://www.verizon.com)

Redfish Forum Supporter

Advanced Micro Devices (http://www.amd.com/)

Alibaba (China) Co., Ltd

American Megatrends, Inc. (http://www.ami.com)

ARM, Inc (http://www.arm.com)

CoreWeave (https://www.coreweave.com/)

DigitalOcean (https://www.digitalocean.com/)

Eaton (http://www.eaton.com/us/en-us.html)

Extreme System Design Co.

Fujitsu (http://www.fujitsu.com/)

Google LLC (http://www.google.com)

H3C (http://www.h3c.com)

Huawei (http://www.huawei.com/)

Jabil (http://jabil.com)

KIOXIA Corporation (http://www.kioxia.com)

Marvell Asia Pte, Ltd. (http:/www.marvell.com)

Meta (https://about.facebook.com/meta)

Microchip Technology Inc. (http://www.microchip.com/)

NetApp (http://www.netapp.com)

NVIDIA Corporation (http://www.nvidia.com)

Phoenix Technologies (http://www.phoenix.com)

Quanta Computer Inc (http://www.quantatw.com/)

Rambus Inc. (https://www.rambus.com)

Seagate Technology (http://www.seagate.com/)

Vertiv (http://www.avocent.com)

ZT Systems (https://www.ztsystems.com/)

Workspace (http://members.dmtf.org/kws) **Members Area (http://members.dmtf.org/members)** **DMTF中国 (/cn)**

DMTF 日本 (/jp)

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Brief

Reduce your downtime with HP PC Hardware Diagnostics

Check your HP PC for hardware failures using these comprehensive tests



Diagnose hardware problems

Determine if your HP hardware is defective with HP PC Hardware Diagnostics – a proprietary tool that helps diagnose problems. The tool is built using the Unified Extensible Firmware Interface (UEFI) specification, and is non-Windows based. That means you can use HP PC Hardware Diagnostics even if a computer doesn't open to Windows.

HP PC Hardware Diagnostics comes preinstalled on all HP notebooks, desktops and workstations built on ARM, Intel and AMD platforms, but not on Android™ or Chrome™ devices.

Save time by testing your hardware
Running these diagnostics tests allows you to:

- Quickly know if you have a hardware failure
- Simplify troubleshooting to streamline support calls to HP
- Avoid returns of working components

Get the tools you need
If you are having issues with a system or suspect a component is failing, running HP's Diagnostics will provide you with tools that can help pinpoint the problem. Within moments, you can be testing a specific component – or multiple components.

- Products with a UEFI BIOS include the diagnostics within the BIOS
- The latest diagnostics can be quickly downloaded online
- The diagnostics can be accessed immediately on your hard drive

Choose which tests to run
The menu-driven interface provides easy access to the hardware test of your choice, and running each hardware test is a simple one-click operation. You can also choose quick or extensive tests. Here's a partial list of hardware you can test:

- Processors
- Hard drives
- Memory
- System boards
- Batteries (notebooks)
- Optical drives
- Video components
- I/O devices

Get started now
Download the latest version of HP PC Diagnostics, plus find more information and resources at hp.com/go/techcenter/pcdiags.

Sign up for updates
hp.com/go/getupdated

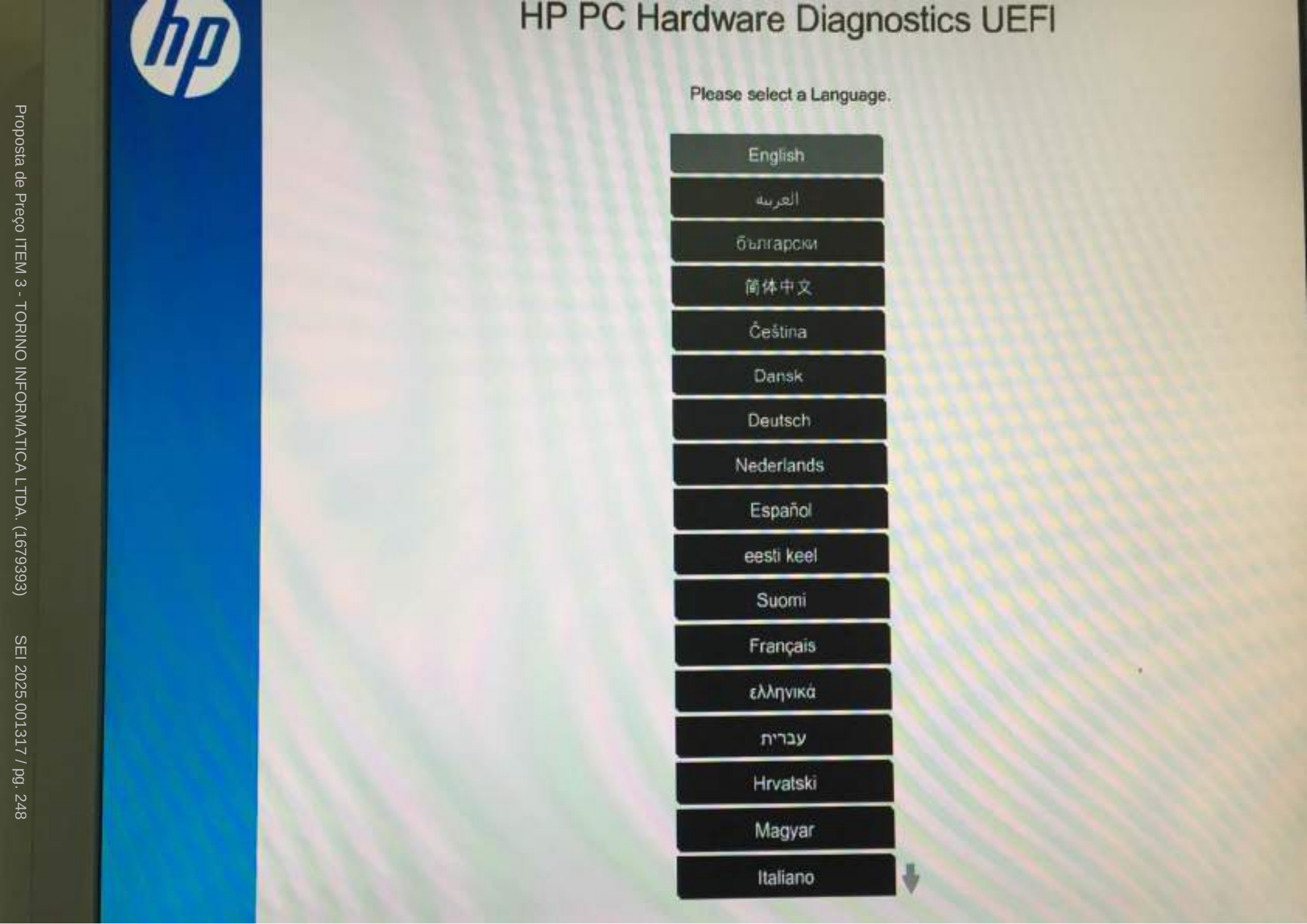
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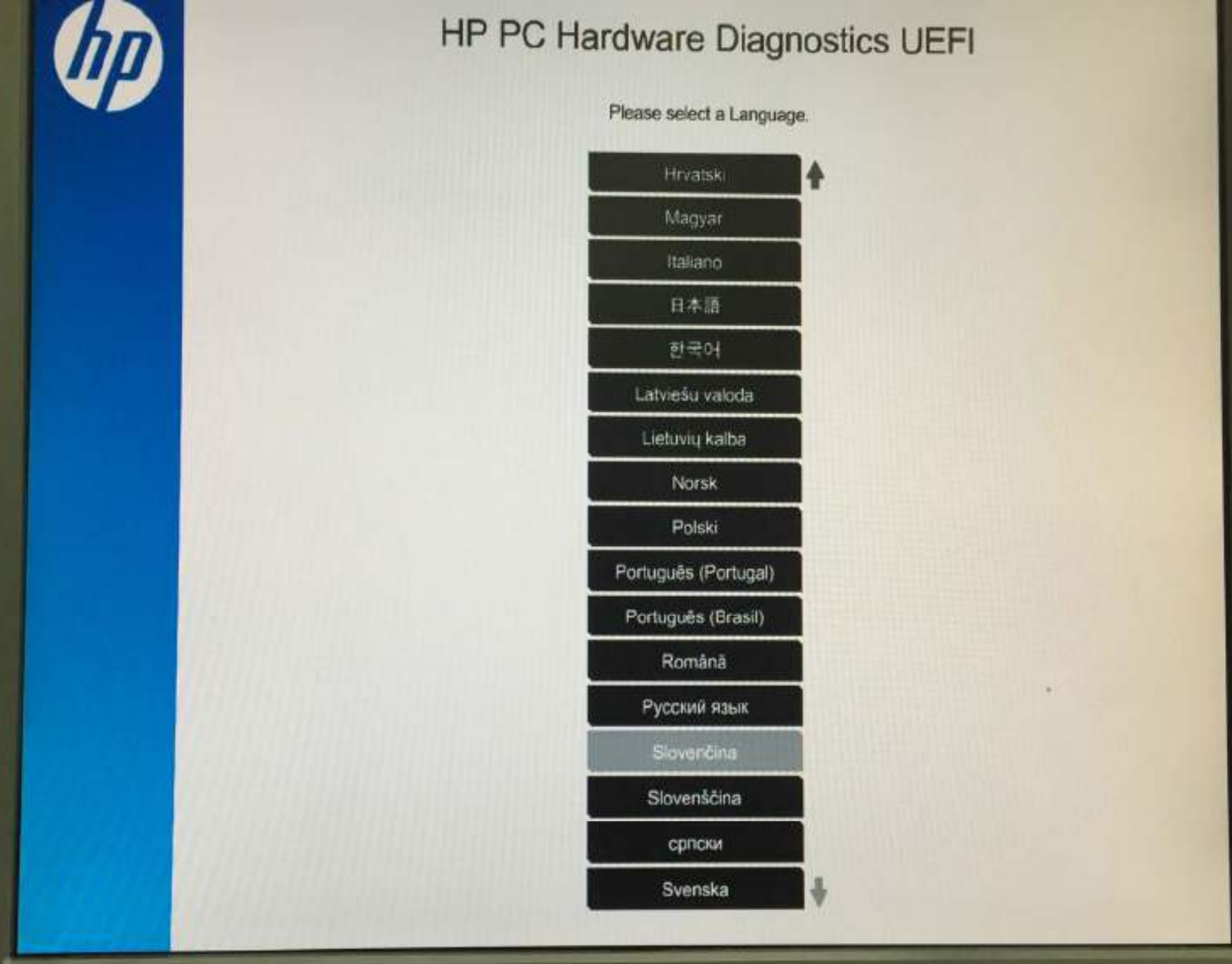
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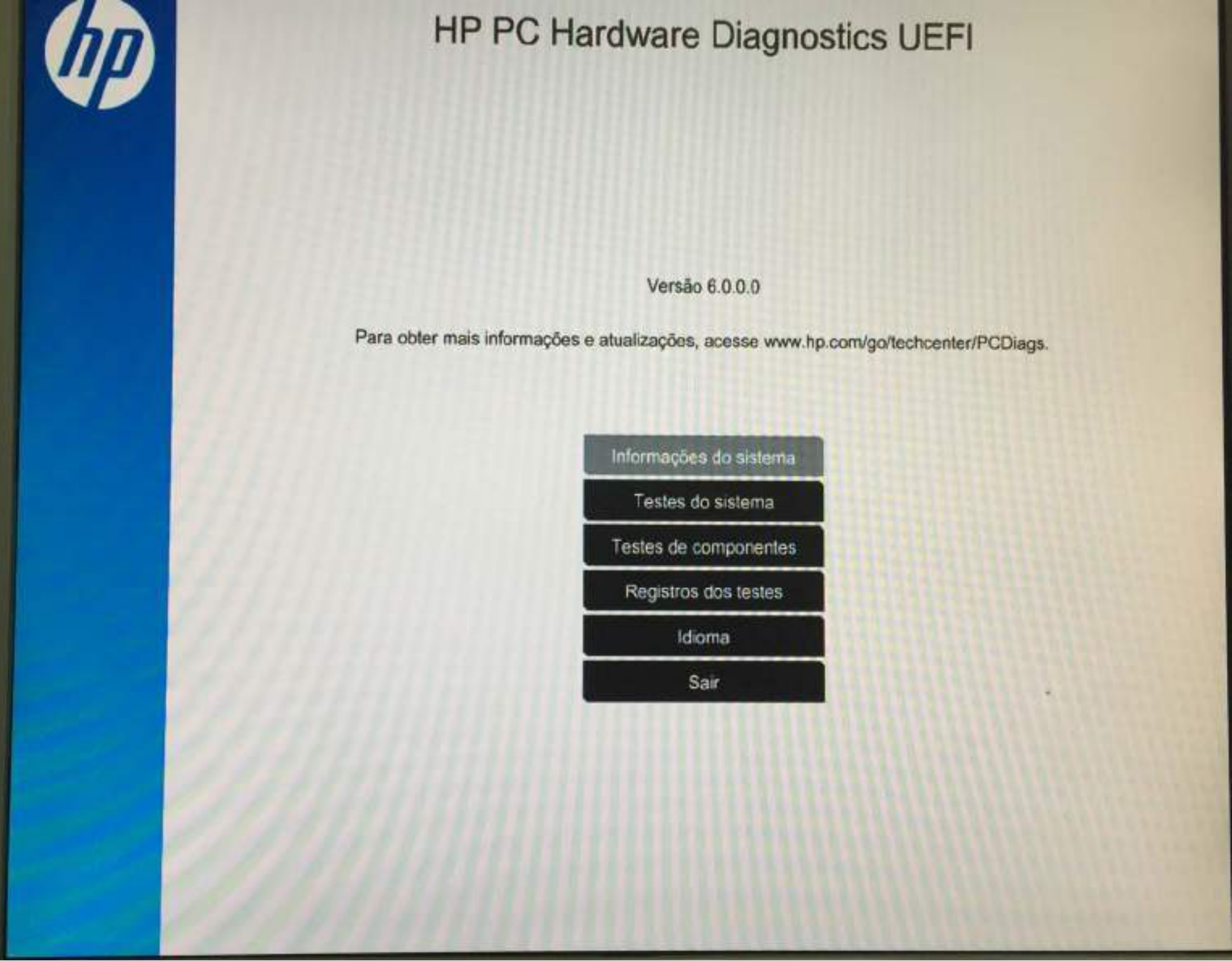
4AA5-3192ENW, June 2014



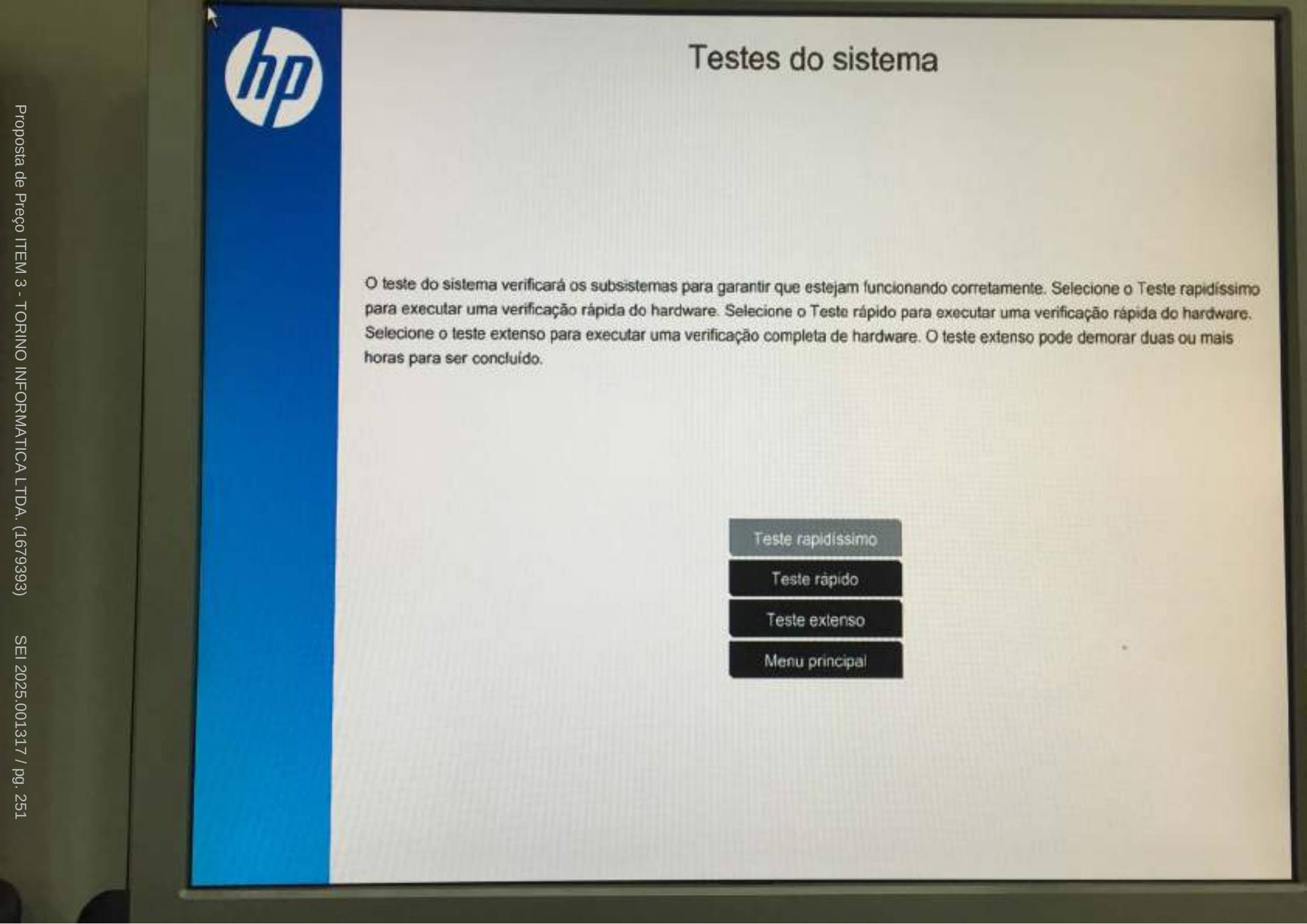
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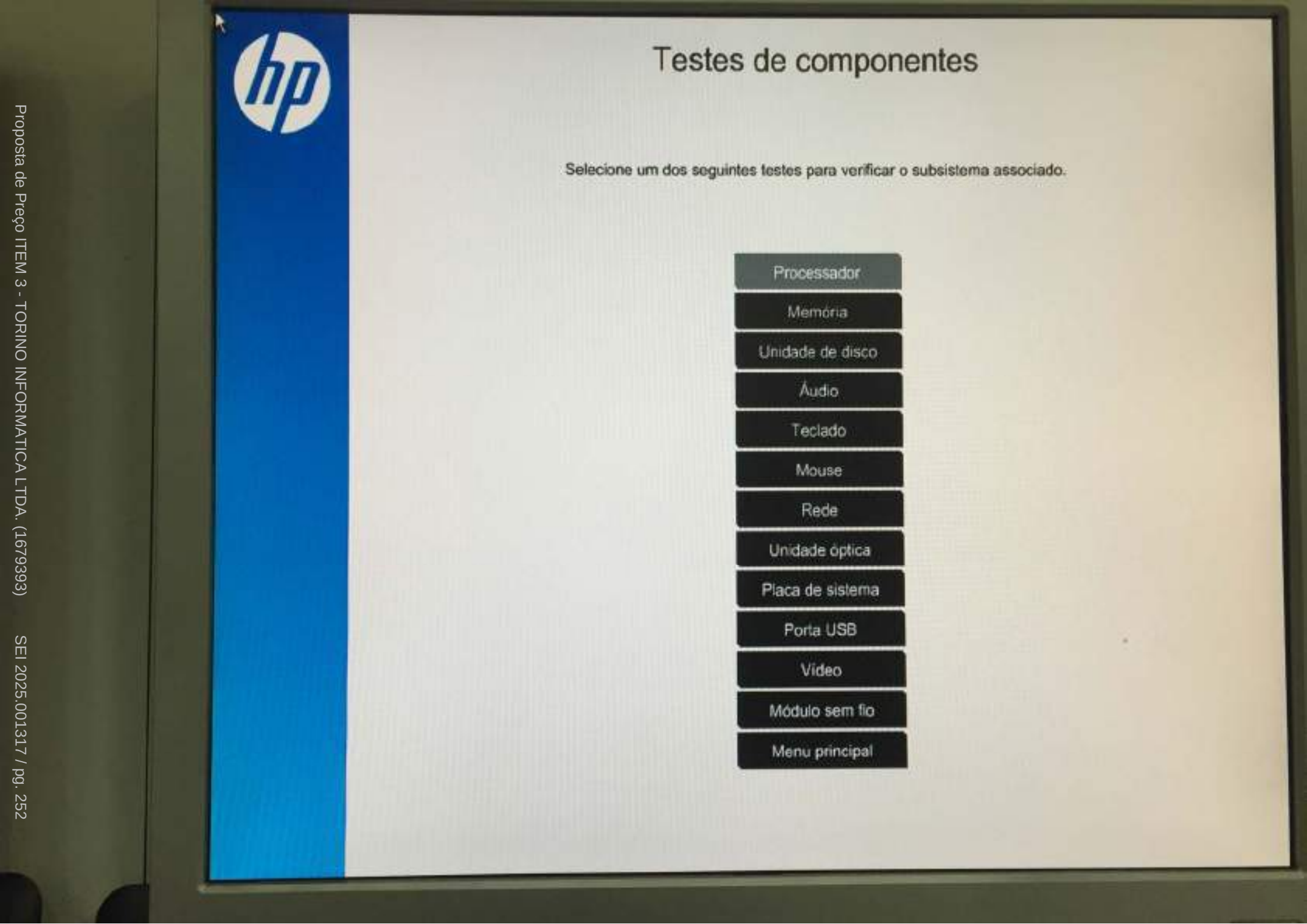
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HP's Compliance with Restriction of Hazardous Substances (RoHS) Legislation in the EU and other jurisdictions

(Rev 14c September 2019)

HP Inc
1501 Page Mill Road
Palo Alto, CA 94304-1112
www.hp.com

HP is committed to compliance with all applicable laws and regulations, including material restriction requirements under the European Union Recast RoHS Directive 2011/65/EU, otherwise known as EU RoHS 2, as amended by Directive 2015/863/EU and RoHS legislation in other jurisdictions such as China's Management Methods for Restricted Use of Hazardous Substances in Electrical and Electronic Products, otherwise known as China RoHS, and the materials restriction requirements of India's E-Waste Management Rules, 2016.

HP believes that legislation, like EU RoHS 2, plays an important role in promoting industry-wide transition to restrict substances of concern. In general, the restriction of any substance should take into account the following key items:

- Global harmonization of the legislation content and implementation requirements
- Substance risk assessment, including a clear understanding of the environmental impacts of alternative substances
- Clear identification of what substances (vs. broad classes or categories) are to be restricted
- Clear identification of when alternative technologies are proven and readily available
- Appropriate lead time to allow the industry to transition
- Substances that are not used or found in final products should not be included in the restrictions
- Material application exemptions should be allowed for the use of restricted substances in applications where current substitution is not technically feasible
- Inclusion of maximum concentration values setting de minimis levels below which the relevant substances may be present

HP believes other substances should be considered for inclusion in future RoHS legislation. This includes the restriction of polyvinyl chloride (PVC) and brominated flame retardants (BFRs) from electrical and electronic products (EEE). HP believes PVC and BFRs should be the focus for the restriction of chlorine (Cl) and bromine (Br) from electrical and electronic products, where technically feasible. HP's reasons for focusing on PVC and BFRs are:

- PVC and BFRs cover 99% of the uses for Cl and Br in electronics;
- Given the high percentage usage, these substances have the highest impact;
- Restriction of these substances where technically feasible would substantially accomplish the goal to eliminate Cl and Br from electronic products

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In order to make these material transitions in all the many types of products in the industry, HP believes restriction under RoHS legislation is possible. However, some critical issues would need to be overcome or addressed by specific exemptions, including technical issues for certain applications, availability of environmentally preferable alternatives, and ability to maintain high recycled content as substances are restricted.

Our continued voluntary goal is to apply the EU RoHS 2 substance and exemption requirements outside the EEA (and other countries that are tracking EU compliance dates) on a worldwide basis within 6 months of each of the EU's various legal compliance dates for virtually all HP branded new products in the scope of EU RoHS 2, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the EU RoHS Directive).

HP began proactively eliminating substances of concern in the early 1990s. The HP Materials and Chemical Management Policy guides how we specify materials and chemicals for use in products, packaging, and manufacturing processes. For key milestones see our Green Chemistry Timeline.

In early 2003, a company-wide RoHS team was formed to manage all aspects of HP's global response to RoHS legislation around the world. HP's initiative to address RoHS legislation is part of the company's Design for Sustainability program, which includes advancing materials innovation to improve environmental and human health impacts. For more information, see the materials innovation section of HP's Sustainable Impact Report.

HP continues to plan for further "RoHS like" legislations in other jurisdictions and will meet any additional requirements that arise. HP complies with the requirements of all the RoHS legislations currently in effect (including those specifically listed under Compliance Status below). HP's Compliance Verification is based on our risk analysis of restricted substances entering the supply chain and includes technical documentation outlined in the European Union's EN 50581:2012 standard and the International IEC 63000:2018 standard.

More detailed information can be found at: Sustainable Impact at HP

Sustainability Impact Report
Sustainable Design
Compliance Verification
General Specifications for the Environment
Eco Declarations

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HP's Compliance Status to EXISTING RoHS Legislation:

Europe, Middle East and Africa

European Union and European Economic Area
- HP products [1] comply with EU Directive 2011/65/EU of 8 June 2011 as amended by EU Directive 2015/863 of 31 March 2015 and including amendments to the exemptions in Annex III.

Switzerland
- HP products [1] comply with the Swiss Ordinance on the Reduction of Risks relating to the Use of Certain Particularly Dangerous Substances, Preparations and Articles, otherwise known as the Swiss Chemical Risk Reduction Ordinance, ORRChem, as of May 18, 2005 (as amended)

Ukraine
- HP products [1] comply with the substance restrictions in Ukraine's "Technical Regulation on Restriction of the use of certain hazardous substances in electrical and electronic equipment, approved by Decree of the Cabinet of Ministers of Ukraine dated 10 March, 2017 No. 139", otherwise known as Ukraine RoHS which came into effect on 22 September 2017 and repealed Technical Regulation on the restriction of the use of certain hazardous substances in electrical and electronic equipment, approved by Decree of the Cabinet of Ministers of Ukraine dated December 3, 2008 No. 1057.

Serbia
- HP products [1] comply with Serbia's WEEE and RoHS "Regulations on the List of Electrical and Electronic Products, Measures Banning and Restricting the Recovery of Electrical and Electronic Equipment Containing Hazardous Materials, and the Methods and Procedures for Managing Waste from Electrical and Electronic Products" that entered into force on January 4, 2011. RoHS restrictions apply to equipment placed on the market on or after July 1, 2011.

Turkey
- HP products [1] comply with Turkey's "Regulation on Waste Electronic and Electrical Equipment" (WEEE) which came into effect on May 22, 2012 and incorporates the rules for the Restriction of Certain Hazardous Substances in Electrical and Electronic Equipment", otherwise known as Turkey RoHS.

Bosnia-Herzegovina
- HP products [1] comply with Bosnia-Herzegovina's "Regulation of Restrictions of Use of Certain Dangerous Substances in Electrical and Electronic Equipment (RoHS Regulation 50/15) was published in Official Gazette of Republic of Srpska 50/15", otherwise known as Bosnia-Herzegovina RoHS which came into effect on June 1, 2016.

UAE
- HP products [1] comply with UAE's "Cabinet Decision No. 10/2017 to control hazardous materials in electrical and electronic devices (RoHS) OG No. 614 of 27.04.2017 (officially published and came to power on 16.05.2017)", otherwise known as UAE RoHS which came into effect on January 1, 2018.

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Asia

China

- HP products [1] comply with China's, "Management Methods for Restricted Use of Hazardous Substances in Electrical and Electronic Products", otherwise known as China RoHS which came into effect on July 1, 2016. And comply with "Catalog of Electrical and Electronic Products that have met the standard in Limited Use of Hazardous Substances (Batch one) which comes into effect on Nov 1, 2019.

India

- HP products [1] comply with the material restrictions of India's legislation "E-waste Management Rules, 2016", otherwise known as India RoHS which came into effect on October 1, 2016.

Korea

- HP products [1] comply with Korea's legislation "The Act on Resource Circulation of Electrical and Electronic Equipment and Vehicles", otherwise known as Korea's RoHS which came into effect on January 1, 2008. You can find HP's Korean RoHS declarations at: http://www8.hp.com/us/en/hp-information/environment/msds-specs-more.html.

Vietnam

- HP products [1] comply with Vietnam's legislation "Circular 30/2011/TT-BCT: Temporarily regulating the permitted limits for a number of hazardous substances in electric and electronic products", otherwise known as Vietnam RoHS which came into effect on December 1, 2012. You can find HP's Vietnam RoHS declarations at: http://www8.hp.com/us/en/hp-information/environment/msds-specs-more.html

Japan

- HP products [1] comply with the labeling requirements set out in Japan's "The Marking of Presence of the Specific Chemical Substances for Electrical and Electronic Equipment" (JIS-C-0950), otherwise known as J-MOSS which came into effect on July 1, 2006. You can find HP's J-MOSS declarations at http://www8.hp.com/us/en/hp-information/environment/msds-specs-more.html

Singapore

- HP products [1] comply with Singapore's "Environment Protection and Management Act (Chapter 94A) Environmental Protection and Management Act (Amendment of Second Schedule) Order 2016", otherwise known as Singapore RoHS which came into effect on June 1, 2017.

Taiwan BSMI

- HP products [1] comply with Taiwan's "CNS 15663 Guidance to reduction of the restricted chemical substances in electrical and electronic equipment released by Bureau of Standards, Metrology and Inspection (BSMI), MOEA through notification dated 29 December 2015 added the requirement for RoHS labelling to BSMI certification requirement." Otherwise known as Taiwan BSMI RoHS which came into effect as of July 1, 2017.

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Americas

California

- HP products [1] comply with California's, "Electronic Waste Recycling Act of 2003 (Senate Bill 20) substance restrictions", otherwise known as California RoHS which came into effect on January 1, 2007.

New Jersey

- HP products [1] comply with New Jersey's "Electronic Waste Recycling Act" (Senate Bill 2144), otherwise known as New Jersey RoHS which came into effect on 1 January 2011.

Worldwide

- HP continues to achieve its internal voluntary goal to meet the substance restrictions of the EU RoHS legislation on a worldwide basis, except where it is widely recognized that there is no technically feasible alternative (as indicated by an exemption under the EU RoHS Directive), for virtually all HP branded products in scope of EU Directive 2011/65/EU as amended.

Notes:
[1] HP products that are both in scope and put on the market in the given jurisdiction.

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Annex B2 - Product environmental attributes
Computers and computer monitors

The declaration may be published only when all rows and/or fields marked with * are filled-in (n.a. for not applicable). Additional information regarding each item may be found under P15.

Brand *	***HP***	Logo
Company name *	***HP***	
Contact information * e-mail address	***HP Sustainability and Compliance Center*** ***sustainability@hp.com***	
Internet site *	***http://www.hp.com/hpinfo/globalcitizenship/environment/***	
Additional information		

The company declares (based on product specification or test results based obtained from sample testing), that the product conforms to the statements given in this declaration.	
Type of product *	***Notebook PC***
Commercial name *	***HP EliteBook 640 14 inch G11 Notebook PC (ENERGY STAR)***
Model number *	***640 G11***
Issue date *	***4/19/2024***
Intended market *	☒ **Global** ☒ **Europe** ☐ **Asia, Pacific & Japan** ☐ **Americas** ☐ **Other**
Additional information	

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

er

About Annex B2
Annex B2 reflects Product environmental attributes relevant for Computers and Computer Monitors. The following items from the ECMA-370 Main body are not shown in the template:
P4.1 – P4.3 Consumable materials
P9.1 TEC and Print speed
P10.2 - P10.3 Chemical emissions from printing products
P11.1 - P11.3 Consumable materials for printing products.

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Model number *	***640 G11***	**Logo**	
Issue date *	***4/19/2024***		

Product environmental attributes - Legal requirements		**Requirement met**		
Item		Yes	No	n.a.
P1	**Hazardous substances and preparations**			
P1.1*	Products do comply with current European RoHS Directive. (See legal reference and NOTE B1)	☒	☐	
P1.2*	Products do not contain Asbestos (see legal reference). Comment: Legal reference has no maximum concentration value.	☒	☐	
P1.3*	Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), hydrobromofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1-trichloroethane, methyl bromide (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	
P1.4*	Products do not contain more than; 0,005% polychlorinated biphenyl (PCB), 0,005% polychlorinated terphenyl (PCT) in preparations (see legal reference).	☒	☐	
P1.5*	Products do not contain more than 0,1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in the chain containing at least 48% per mass of chlorine in the SCCP (see legal reference).	☒	☐	
P1.6*	Parts with direct and prolonged skin contact do not release nickel in concentrations above 0,5 μg/cm²/week (see legal reference). Comment: Max limit in legal reference when tested according to EN1811:2011-5.	☒	☐	☐
P1.7*	REACH Article 33 information about substances in articles is available at (add URL or mail contact): REACH Article 33 Declarations (hp.com)	☒	☐	☐
P2	**Batteries**			
P2.1*	If the product contains a battery or an accumulator, the battery/accumulator is labeled with the disposal symbol. Information on proper disposal is provided in user manual. (See legal reference)	☒	☐	☐
P2.2*	Batteries or accumulators do not contain more than 0,0005% of mercury or 0,002% of cadmium. (See legal reference)	☒	☐	☐
P2.3*	Batteries and accumulators are readily removable. (See legal reference)	☐	☒	☐
P2.4*	Documentation includes the number of cycles the (secondary) battery can withstand. (See legal reference)	☒	☐	☐
P2.5*	When internal batteries of a notebook computer cannot be “accessed and replaced by a nonprofessional user”, the related text is present and legible on the external packaging (see legal reference)	☒	☐	☐
P3	**Conformity verification & Eco design (ErP)**			
P3.1*	The product is CE-marked to show conformance with applicable legal requirements (see legal reference). The Declaration of Conformity can be requested at (add link or e-mail address): http://www8.hp.com/uk/en/certifications/technical/regulations-certificates.html sustainability@hp.com	☒	☐	☐
P3.2*	The product complies with the applicable Eco design requirements for energy-related products, (see legal reference).	☒	☐	☐
	Required information is; ☒ given in item P15 or added to this document,	☒	☐	☐
	☐ available at (add URL):			
P5	**Product packaging**			
P5.1*	Packaging and packaging components do not contain more than 0,01% lead, mercury, cadmium and hexavalent chromium by weight of these together.	☒	☐	
P5.2*	The packaging materials are marked with abbreviations and numbers indicating the nature of the material(s) used (see legal reference).	☒	☐	☐
P5.3*	The product packaging material is free from ozone depleting substances as specified in the Montreal Protocol (see legal reference). Comment: Legal reference has no maximum concentration values.	☒	☐	☐
P6	**Treatment information**			
P6.1*	Information for recyclers/treatment facilities is available (see legal reference).	☒	☐	☐

NOTE B1 Restriction applies to the homogeneous material, unless other specified and expressed in weight %. Stating “Yes” means that the product is compliant with the mandatory requirements.

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Model number *	***640 G11***	**Logo**	
Issue date *	***4/19/2024***		

Product environmental attributes - Market requirements (See General NOTE GN below) **- Environmental conscious design**		**Requirement met**		
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.	Yes	No	n.a.
P7	**Design** **Disassembly, recycling**			
P7.1*	Parts that have to be treated separately are easily separable	☒	☐	☐
P7.2*	Plastic materials in covers/housing have no surface coating.	☐	☒	☐
P7.3*	Plastic parts > 100 g consist of one material or of easily separable materials.	☒	☐	☐
P7.4*	Plastic parts > 25 g have material codes according to ISO 11469 referring ISO 1043-4.	☒	☐	☐
P7.5	Plastic parts are free from metal inlays or have inlays that can be removed with commonly available tools.	☒	☐	☐
P7.6*	Labels are easily separable. (This requirement does not apply to safety/regulatory labels).	☒	☐	☐
	Product lifetime			
P7.7*	Upgrading can be done e.g. with processor, memory, cards or drives	☒	☐	☐
P7.8*	Upgrading can be done using commonly available tools	☒	☐	☐
P7.9	Spare parts are available after end of production for: **5** years			☐
P7.10	Service is available after end of production for: **5** years			☐
	Material and substance requirements			
P7.11*	Product cover/housing material type (e.g. plastics, metal, aluminum): Material type: ***aluminium*** Material type: ***stainless steel*** Material type:			
P7.12	Insulation materials of external electrical cables are PVC free.	☐	☒	☐
P7.13	Insulation materials of internal electrical cables are PVC free.	☒	☐	☐
P7.14	External plastic casing/cover parts > 25 g contain no more than 0,1% weight (1000 ppm) bromine and 0,1% weight (1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame retardants, and polyvinyl chloride or 0,3% weight (3000 ppm) bromine and 0,3% weight (3000 ppm) chlorine in parts containing more than 25% post-consumer recycled content.	☒	☐	☐
P7.15	Printed circuit boards, PCBs (without components) are low halogen: all ☐ PCBs > 25 g ☒ are low halogen as defined in IEC 61249-2-21. (See [5]NOTE B2)	☒	☐	☐
P7.16	Flame retarded plastic parts > 25 g in covers / housings are marked according ISO 1043-4: Marking:	☐	☐	☒
P7.17	Alt. 1: Chemical specifications of flame retardants in printed circuit boards > 25 g (without components): TBBPA (additive) ☐, TBBPA (reactive) ☐ (See NOTE B3), Other; chemical name: , CAS #: Alt. 2: Chemical specifications of flame retardants in printed circuit boards (without components) > 25 g according ISO 1043-4:***FR(40)***	☐ ☒	☐ ☐	☐ ☐
P7.18	Alt. 1: Flame retarded plastic parts > 25 g contain the following flame retardant substances/preparations in concentrations above 0,1%: 1. Chemical name: , CAS #: (See NOTE B4) 2. Chemical name: , CAS #: " 3. Chemical name: , CAS #: " Alt. 2: Chemical specifications of flame retardants in plastic parts > 25 g according ISO 1043-4:	☐ ☐	☐ ☐	☐ ☒
P7.19	In plastic parts > 25 g, flame retardant substances/preparations above 0,1% are used which have been assigned the following Risk phrases; and Hazard statements: The source(s) for these classifications is/are found at (add URL(s)): ***http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database*** (See note B5)	☐	☐	☒

GENERAL NOTE Standard references should direct to the latest version of a standard. If an older version of a standard is used, section P15 shall be used for explanation.

NOTE B2 IEC 61249-2-21 defines maximum limits of 900 ppm for each of the substances chlorine and bromine and a maximum limit of 1500ppm of these substances combined. The standard does not address fluorine, iodine and astatine which are included in the group of halogens.

NOTE B3 and B4 A Guidance document on Chemical substances is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm.

NOTE B5 If a certain substance has been assigned a certain risk phrases / hazard statement in the referenced source, this does not necessarily mean the substance has been tested for all of the hazards referred to by a certain customer.

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Model number *	***640 G11***	**Logo**
Issue date *	***4/19/2024***	

Product environmental attributes - Market requirements (continued)		**Requirement met**		
Item		Yes	No	n.a.
	Material and substance requirements (continued)			
P7.20*	Postconsumer recycled plastic material content is used in the product (See NOTE B6): ☒ If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the postconsumer recycled plastic material content (calculated as a percentage of total plastic by weight) is ***23.4*****%**. or b) The weight of recycled material is g.	☒	☐	☐
P7.21*	Biobased plastic material content is used in the product (See NOTE B7): ☐ If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the biobased plastic material content (calculated as a percentage of total plastic by weight) is %. or b) The weight of the biobased plastic material is g.	☐	☒	☐
P7.22*	Light sources are free from mercury, i.e. less than 0,1 mg/lamp. ☒ If mercury is used specify: Number of lamps: and maximum mercury content per lamp: ***0*** mg	☒	☐	☐
P7.23*	If product includes an integral display, the total mercury content in the integrated display: ***0*** mg ☒	☒	☐	☐
P8	**Batteries**			
P8.1*	Battery chemical composition: ☒			☒
P9	**Energy consumption (See NOTE B8)**			
P9.1	For the product the following power levels or energy consumptions are reported:			

Energy mode *	Power level at **100** V AC	Power level at **115** V AC	Power level at **230** V AC	Reference/Standard for energy modes and test method *	
EPS No-load (External power supply / charger plugged in the wall outlet but disconnected from the product.)	***31mw***	***33mw***	***74mw***	***EPS Energy Test Report***	
PTEC * Typical Energy Consumption	***N/A*** W	***N/A*** W	***N/A*** W	***EnergyStar@ Program Requirements for Computer***	☒
ETEC * Annual Energy Consumption	***13.61*** kWh/year	***14.48*** kWh/year	***14.76*** kWh/year	***EnergyStar@ Program Requirements for Computer***	☐
External Power Supply Efficiency Level (International Efficiency Marking Protocol) * : ***VI***				***EnergyStar@ Program Requirements for Computer***	☐
Display resolution * : ***1920*1200*** megapixels				***EnergyStar@ Program Requirements for Computer***	☐
Default time to enter energy save mode: minutes				***EnergyStar@ Program Requirements for Computer***	☐

P9.2*	Information about the energy save function is provided with the product.	☒	☐	☐
P9.3	Energy efficiency class (monitors only):			☒

NOTE B6 Applies to a product containing plastic parts whose combined weight exceeds 100 g with the exception of printed circuit boards, cables, connectors and electronic components and bio-based plastic material.

NOTE B7 The following is to be excluded from the calculation of percentage: printed circuit boards, labels, cables, connectors and electronic components and postconsumer recycled plastic

NOTE B8 A Guidance document on Energy Efficiency is available;

see http://www.ecma-international.org/publications/standards/Ecma-370.htm.

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Model number *	*640 G11*	**Logo**	
Issue date *	*4/19/2024*		

Product environmental attributes - Market requirements (continued)				**Requirement met**		
Item				Yes	No	n.a.
P10	**Emissions**					
	Noise emission – Declared according to ISO 9296 (See NOTE **B9**)					
P10.1	Mode	Mode description	Statistical upper limit A-weighted sound power level, $L_{WA,c}$ (B)			
	Idle	**** Fans on***	**** 2.6***			☐
	Operation	**** Operating SSD***	**** 2.9***			☐
	Other mode					
	Measured according to: ☒ ISO 7779 ☒ ECMA-74 ☐ Other (only if not covered by ECMA-74)					
	Electromagnetic emissions					
P10.4	Computer display meets the requirement for low frequency electromagnetic fields of the following voluntary program(s):			☐	☐	☐
P12	**Ergonomics for computing products**					
P12.1*	The display meets the ergonomic requirements of ISO 9241-307 for visual display technologies.			☒	☐	☐
P12.2*	The physical input device meets the requirements of ISO 9995 and ISO 9241-410.			☒	☐	☐
P13	**Packaging and documentation**					
P13.1*	Product packaging material type(s): ***PAPER/ Corrugated*** weight (kg): ***0.230*** Product packaging material type(s): ***PAPER/Molded Pulp*** weight (kg): ***0.140*** Product packaging material type(s): ***PAPER/paperboard*** weight(kg):***0.051*** Product packaging material type(s): ***PLASTIC/Polyethylene low density – LDPE*** weight(kg):***0.016***					
P13.2*	Product plastic primary packaging is free from PVC.			☒	☐	☐
P13.3*	For product primary corrugated fiberboard packaging, specify the contained percentage of minimum post-consumer recovered fiber content: ***58*** %					☐
P13.4*	Specify media for user and product documentation (tick box): Electronic ☐, Paper ☐, Other ☒ Available on HP.com					☐
P13.5	(Please only complete this item if paper documentation used) User and product documentation on paper media is chlorine-free: If Yes, please specify: Totally chlorine-free Elemental chlorine-free Processed chlorine-free			☒ ☐ ☒ ☐	☐	
P14	**Voluntary programs**					
P14.1	The product meets the requirements of the following voluntary program(s):					
	ENERGY STAR®	Criteria version: ***8.0***	Date: ***4/19/2024***	Product category: ***Commercial Notebook***		
	Eco-label: ***EPEAT***	Criteria version: ***IEEE 1680.1***	Date: ***4/19/2024***	Product category: ***Commercial Notebook***		
	Eco-label: ***TCO***	Criteria version: ***9.0***	Date: ***4/19/2024***	Product category: ***Commercial Notebook***		
P15	**Additional information (See NOTE B10)**					
P9	***Energy consumption of computer products; description of the tested product configuration:***					
All Sections	***1. Product environmental information contained in this declaration is valid as of the date the declaration is published. Changes to external standards referenced in the IT Eco-Declaration may invalidate some information contained in this declaration over***					
P1	***1. This product does not include DEHP, BBP, DIBP, or DBP.***					

NOTE B9 A Guidance document on Acoustic Noise is available; see http://www.ecma-international.org/publications/standards/Ecma-370.htm.

NOTE B10 Additional lines may be inserted to declare further items, by positioning the cursor at the far right of the row and hitting the <Enter> key.

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P7 ***Product Upgradability and Reparability***

The following table is provided in accordance with IEEE 1680.1-2018[6] criterion 4.4.2.5.

feature	Available[1]	Repairable[2]	Replaceable[2]	Upgradeable[3]
processor	Y	Y	Y*	Y
main memory	Y	Y	Y	Y
mass storage (internal)	Y	Y	Y	Y
wireless networking	Y	Y	Y	Y
integrated graphics	Y	Y	Y*	N
discrete graphics	N	N/A	N/A	N/A
display panel	Y	Y	Y	Y
integrated keyboard	Y	Y	Y	Y
battery	Y	Y	Y	Y
power supply	Y	Y	Y	Y
fan assemblies	Y	Y	Y	N
speaker(s) (internal)	Y	Y	Y	N
camera	Y*	Y	Y	Y
touchpad	Y	Y	Y	N
I/O connectors and external power connector	Y	Y	Y	N
readers [5]	Y*	Y	Y	N

Table notes:
[1] Y* = feature is available, but may not be included in every configuration
[2] Product can be repaired (returned to fully functional state) if feature fails.
[3] Feature can be replaced using only commonly available tools without soldering or de-soldering. Y* = replacement may require replacing an assembly to which the feature is attached.
[4] Base feature may be upgraded by replacing it with a higher performance module or by expanding capacity through use of expansion slots. NOTE: This evaluation does not
account for situations in which the initial configuration purchased is already maximized. Contact HP Sales or an HP authorized reseller to determine the availability of upgrade parts and method to obtain them in your geography.
[5] This feature category includes readers such as fingerprint readers, smart card readers, and other read-only devices, but excludes read/write devices.

P9 ***1. European Union Commission Regulation 1275/2008- Energy Efficiency Information:***

Mode / Condition	Power Consumption in Watts at 230 VAC Input Voltage	Default Time to Mode / Conditi (if applicable)
Off Mode (if applicable)	***0.42W***	Not Applicable
Standby Mode (if applicable)	Not Applicable	Not Applicable
Network Standby / Sleep / Long Idle Mode if all wired network ports are connected and all wireless network ports are activated (if applicable)	***N/A***	***N/A***
Network Standby / Sleep / Long Idle Mode (if applicable)	***N/A***	***N/A***

2.European Union Commission Regulation 1275/2008- Wireless Network Instructions:

Where applicable, activate and deactivate a wireless network using the instructions provided in the product user guide or the operating system. Information is also available at www.hp.com/support.

P10 Sound Pressure Level

Noise emission – Declared according to ISO 9296 (See NOTE [B9])

P10.1	Mode	Mode description	Statistical upper limit A-weighted sound pressure level, $L_{pA,m}$ (dB)
	Idle	* ***Fans on***	* ***13.1***
	Operation	* ***Operating SSD***	* ***24.7***
	Other mode		
	Measured according to: ☒ ISO 7779 ☒ ECMA-74		

6 IEEE Standard for Environmental and Social Responsibility Assessment of Computers and Displays

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	☐ *Other* *(only if not covered by ECMA-74)*

Legal references Europe Annex B2

Reference	Declaration item
Directive 2011/65/EU (RoHS Directive)* * Specific exemptions apply for certain products and applications.	P1.1, P3.1
Regulation (EC) 1907/2006 (REACH Regulation), annex XVII	P1.2, P1.4, P1.6, P1.7
Regulation (EC) 2037/2000, 2038/2000, 2039/2000 (Marketing and use of Ozone layer depleting substances)	P1.3, P5.3
Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002	P1.5
Directive 2006/66/EC (Battery and accumulators Directive), as amended.* * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	P2.1, P2.2, P2,3, P8.1
Directive 2014/35/EU (Low Voltage Directive)	P3.1
Directive 2014/30/EU (EMC Directive)	P3.1
Directive 2014/53/EU (RE Directive)	P3.1
Regulation (EC) 801/2013 amending Regulation (EC) No 1275/2008 with regard to ecodesign requirements for standby, off mode electric power consumption of electrical and electronic household and office equipment, and amending Regulation (EC) No 642/2009 with regard to ecodesign requirements for televisions	P3.1, P3.2
Commission Regulation (EC) No 278/2009 of 6 April 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for no-load condition electric power demand and average active efficiency of external power supplies	P3.1, P3.2, P9.1
COMMISSION REGULATION (EU) No 617/2013 of 26 June 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for computers and computer servers	P2.4, P2.5, P3.1, P3.2, P7.23, P9.1
Regulation（EC）No 1272/2008 (CLP Regulation)	P7.19
Directive 2004/12/EC (Packaging Directive)	P5.1
Decision 97/129/EC (Secondary packaging legislation)	P5.2
Directive 2012/19/EU (WEEE directive) Implementing Regulation (EU) 2019/290 establishing the format for registration and reporting of producers of electrical and electronic equipment to the register. Commission Implementing Regulation 2017/699 establishing a common methodology for the calculation of the weight of electrical and electronic equipment (EEE) placed on the national market in each Member State and a common methodology for the calculation of the quantity of waste electrical and electronic equipment (WEEE) generated by weight in each Member State.	P6.1

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República Federativa do Brasil
Agência Nacional de Telecomunicações

Certificado de Homologação

(Intransferível)

Nº **12069-21-04423**

Validade: **Indeterminada**

Emissão: **24/06/2023**

Requerente:
CNPJ: 57.286.247/0001-33
INTEL SEMICONDUTORES DO BRASIL LTDA

Fabricante:
INTEL CORPORATION SAS
425 RUE DE GOA, CARGO B6
Nº
06600
FRANÇA

Este documento homologa, nos termos da regulamentação de telecomunicações vigente, o Certificado de Conformidade nº ICC 05.049/2023.1, emitido pelo **ICC Instituto de Certificações e Conformidades Ltda**. Esta homologação é expedida em nome do solicitante aqui identificado e é válida somente para o produto a seguir discriminado, cuja utilização deve observar as condições estabelecidas na regulamentação de telecomunicações.

Tipo - Categoria:
Transceptor de Radiação Restrita - II

Modelo - Nome Comercial (s):
AX211NGW

Características técnicas básicas:

Faixa de Frequências Tx (MHz)	Designação de Emissões	Potência Máxima de Saída (W)	Tipo de Modulação	Tecnologias
2.400,0 a 2.483,5	931KF7D	0,0103	GFSK	SALTO EM FREQÜÊNCIA
2.400,0 a 2.483,5	1M44G7D	0,0088	¶/4DQPSK e 8DPSK	SALTO EM FREQÜÊNCIA
2.400,0 a 2.483,5	683KF7D	0,0069	GFSK	SEQÜÊNCIA DIRETA
2.400,0 a 2.483,5	1M14F7D	0,0069	GFSK	SEQÜÊNCIA DIRETA
2.400,0 a 2.483,5	10M3X9D	0,25	DBPSK, DQPSK e CCK	SEQÜÊNCIA DIRETA
2.400,0 a 2.483,5	16M9X9D	0,504	BPSK, QPSK, 16 QAM, 64 QAM	OFDM
2.400,0 a 2.483,5	17M7X9D	0,514	BPSK, QPSK, 16 QAM, 64 QAM	OFDM
2.400,0 a 2.483,5	36M5X9D	0,498	BPSK, QPSK, 16 QAM, 64 QAM	OFDM
2.400,0 a 2.483,5	19M1X9D	0,424	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDMA
2.400,0 a 2.483,5	38M1X9D	0,499	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDMA
5.725,0 a 5.850,0	15M7X9D	0,135	BPSK, QPSK, 16 QAM, 64 QAM	OFDM
5.725,0 a 5.850,0	18M9X9D	0,283	BPSK, QPSK, 16 QAM, 64 QAM	OFDM
5.725,0 a 5.850,0	37M4X9D	0,249	BPSK, QPSK, 16 QAM, 64 QAM	OFDM
5.725,0 a 5.850,0	18M9X9D	0,283	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	OFDM
5.725,0 a 5.850,0	37M4X9D	0,249	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	OFDM
5.725,0 a 5.850,0	78M0X9D	0,194	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	OFDM
5.725,0 a 5.850,0	19M1X9D	0,134	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDMA

Faixa de Frequências Tx (MHz)	Designação de Emissões	Potência Máxima de Saída (W)	Tipo de Modulação	Tecnologias
5.725,0 a 5.850,0	38M1X9D	0,143	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDMA
5.150,0 a 5.350,0	-	0,093	BPSK, QPSK, 16 QAM, 64 QAM	OFDM
5.150,0 a 5.350,0	-	0,097	BPSK, QPSK, 16 QAM, 64 QAM	OFDM
5.150,0 a 5.350,0	-	0,087	BPSK, QPSK, 16 QAM, 64 QAM	OFDM
5.150,0 a 5.350,0	-	0,097	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	OFDM
5.150,0 a 5.350,0	-	0,087	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	OFDM
5.150,0 a 5.350,0	-	0,056	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	OFDM
5.150,0 a 5.350,0	-	0,028	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	OFDM
5.150,0 a 5.350,0	-	0,045	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDMA
5.150,0 a 5.350,0	-	0,052	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDMA
5.150,0 a 5.350,0	-	0,035	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDMA
5.150,0 a 5.350,0	-	0,032	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDMA
5.470,0 a 5.725,0	-	0,36	BPSK, QPSK, 16 QAM, 64 QAM	OFDM
5.470,0 a 5.725,0	BPSK, QPSK, 16 QAM, 64 QAM	0,333	BPSK, QPSK, 16 QAM, 64 QAM	OFDM
5.470,0 a 5.725,0	-	0,314	BPSK, QPSK, 16 QAM, 64 QAM	OFDM
5.470,0 a 5.725,0	-	0,333	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	OFDM
5.470,0 a 5.725,0	-	0,314	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	OFDM
5.470,0 a 5.725,0	-	0,21	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	OFDM
5.470,0 a 5.725,0	-	0,111	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	OFDM
5.470,0 a 5.725,0	-	0,087	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDMA
5.470,0 a 5.725,0	-	0,068	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDMA
5.470,0 a 5.725,0	-	0,084	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDMA
5.470,0 a 5.725,0	-	0,094	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDMA
5.925,0 a 7.125,0	-	0,017	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	OFDM
5.925,0 a 7.125,0	-	0,02	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	OFDM
5.925,0 a 7.125,0	-	0,044	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	OFDM
5.925,0 a 7.125,0	-	0,02	BPSK, QPSK, 16 QAM, 64 QAM	OFDM
5.925,0 a 7.125,0	-	0,044	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	OFDM
5.925,0 a 7.125,0	-	0,098	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM	OFDM
5.925,0 a 7.125,0	-	0,181	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDM
5.925,0 a 7.125,0	-	0,023	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDMA

Faixa de Frequências Tx (MHz)	Designação de Emissões	Potência Máxima de Saída (W)	Tipo de Modulação	Tecnologias
5.925,0 a 7.125,0	-	0,043	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDMA
5.925,0 a 7.125,0	-	0,085	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDMA
5.925,0 a 7.125,0	-	0,226	BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM, 1024QAM	OFDMA

- Produto não acabado, cuja integração em outro equipamento requer nova avaliação.
- Possui conector para antena externa.
- Ganho das antenas (5,1 GHz): 5 dBi (antena 1 e 2)
- Ganho das antenas (5,4 GHz): 5 dBi (antena 1 e 2)
- Ganho das antenas (5925 a 6425 MHz): 4,83 dBi (antena 1 e 2).
- Ganho das antenas (6425 a 6525 MHz): 4,30 dBi (antena 1 e 2).
- Ganho das antenas (6525 a 6875 MHz): 5,37 dBi (antena 1 e 2).
- Ganho das antenas (6875 a 7125 MHz): 5,59 dBi (antena 1 e 2).
- Os valores de potências indicados nas faixas de 5470-5725 MHz e 5925 a 7125 MHz referem-se a potência média em E.I.R.P.
- Possui mecanismo DFS.

Observações

Na instalação do produto devem ser observadas as condições de uso conforme estabelecido no Regulamento sobre Equipamentos de Radiocomunicação de Radiação Restrita.

Este certificado substitui o de mesmo número emitido em 07/10/2021

Constitui obrigação do fabricante do produto no Brasil providenciar a identificação do produto homologado, nos termos da regulamentação de telecomunicações, em todas as unidades comercializadas, antes de sua efetiva distribuição ao mercado, assim como observar e manter as características técnicas que fundamentaram a certificação original.

As informações constantes deste certificado de homologação podem ser confirmadas no SCH - Sistema de Gestão de Certificação e Homologação, disponível no portal da Anatel. (www.anatel.gov.br).

Davison Gonzaga da Silva
Gerente de Certificação e Numeração

(en) DECLARATION OF CONFORMITY / (de) KONFORMITÄTSERKLÄRUNG / (fr) DÉCLARATION DE CONFORMITÉ / (es) DECLARACIÓN DE CONFORMIDAD

DoC #: HSN-Q39C-4- R3

(en) Manufacturer's Name (de) Herstellername (fr) Nom du fabricant (es) Nombre del fabricante	**HP Inc.**
(en) Manufacturer's Address (de) Adresse des Herstellers (fr) Adresse du fabricant (es) Dirección del fabricante	**1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**
(en) declare, under its sole responsibility that the product (de) erklärt, dass das Produkt (fr) déclare que le produit (es) declara que el producto	
(en) Product Name and Model[5.2] (de) Produktname und Modell[5.2] (fr) Nom du produit et modèle[5.2] (es) Nombre del producto y modelo[5.2]	**HP ProBook 445 14 inch G11 Notebook PC; HP ProBook 445 14 inch G11 series;HP Elite mt645 G8 Mobile Thin Client; HP Elite mt645 G8 series; HP EliteBook 645 14 inch G11 Notebook PC; HP EliteBook 645 14 inch G11 series**
(en) Regulatory Model Number[5.1] (de) Regulatorische Modell Nummer[5.1] (fr) Numéro de modèle réglementaire[5.1] (es) Número de modelo reglamentario[5.1]	**HSN-Q39C-4**
(en) Product Options (de) Produktoptionen (fr) Options du produit (es) Opciones del producto	**(en) Please See ANNEX 1** **(de) Siehe Anhang I** **(fr) Voir l'annexe I** **(es) Ver Anexo I**

(en) conforms to the following Product Specifications and Regulations
(de) entspricht den folgenden Produktspezifikationen und Vorschriften
(fr) est conforme aux normes et règlements de produit suivants
(es) cumple con las siguientes especificaciones y normas de productos

(en) Safety / (de) Sicherheit / (fr) Sécurité / (es) Seguridad	**(en) EMC / (de) EMV / (fr) EMC / (es) EMC**	**(en) Spectrum / (de) Frequenzspektrum / (fr) Spectre radioélectrique / (es) Espectro radioeléctrico**
IEC 62368-1:2018	EN 55032:2015+A11:2020	EN 300 328 V2.2.2
EN IEC 62368-1:2020 +A11:2020	EN 55035:2017+A11:2020	EN 301 893 V2.1.1
EN IEC 62311:2020	EN 61000-3-2:2014	EN 300 440 V2.1.1
EN 50665:2017	EN 61000-3-3:2013 +A1:2019	EN 303 687 V1.1.1
EN 62479:2010	EN 301 489-1 V2.2.3	EN 301 908-1 V15.2.1
EN 50663:2017	EN 301 489-3 V2.3.2	EN 301 908-2 V13.1.1
EN 50364:2018	EN 301 489-17 V3.2.4	EN 301 908-13 V13.2.1
	EN 301 489-19 V2.2.1	EN 303 413 V1.2.1
	EN 301 489-52 V1.2.1	EN 300 330 V2.1.1
	EN 60601-1-2:2015+ AMD1:2021	
	FCC CFR 47 Part 15	
	ICES-003, Issue 7	

(en) Ecodesign / (de) Öko-Design / (fr) Écoconception / (es) Diseño ecológico
Regulation (EU) 2023/826
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

(en) The product herewith complies with the requirements of the following and carries the CE-marking accordingly (de) Das Produkt hiermit entspricht den Anforderungen der folgenden und trägt das entsprechende CE-Kennzeichen (fr) Le produit est conforme aux exigences suivantes et porte le marquage CE en conséquence (es) El producto presente cumple con los requisitos de lo siguiente y conlleva el marcado CE en consecuencia	**Radio Equipment Directive 2014/53/EU** **Ecodesign Directive 2009/125/EU** **RoHS Directive 2011/65/EU** **Battery Regulation 2023/1542**

(en) DECLARATION OF CONFORMITY / (de) KONFORMITÄTSERKLÄRUNG / (fr) DÉCLARATION DE CONFORMITÉ / (es) DECLARACIÓN DE CONFORMIDAD

DoC #: HSN-Q39C-4- R3

UK ONLY: This product herewith complies with the requirements of the following and carries the UKCA marking.	**Radio Equipment Regulations 2017** **Ecodesign for Energy-Related Products Regulations 2010** **Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012**

(en) Additional Information
(de) Zusätzliche Information
(fr) Informations complémentaires
(es) Información Adicional:

5.1)
(en) This product is assigned a Regulatory Model Number which stays with the regulatory aspects of the design. The Regulatory Model Number is the main product identifier in the regulatory documentation and test reports, this number should not be confused with the marketing name or the product numbers.
(de) Für die regulatorischen Aspekte zum Design wurde diesem Produkt eine Regulatorische Modell Nummer zugeordnet. Zur Produktidentifizierung in der regulatorischen Dokumentation und den Prüfberichten wird diese Regulatorische Modell Nummer verwendet und sollte nicht zu Verwechslungen von Marketingnamen oder Produktnummern führen.
(fr) A ce produit est assigné un numéro de modèle réglementaire qui est associé avec les aspects réglementaires liés à la conception du produit. Le numéro de modèle réglementaire est le principal identificateur du produit dans la documentation réglementaire et les rapports d'essais, ce nombre ne doit pas être confondu avec le nom commercial ou les numéros de produit.
(es) A este producto se asigna un número de modelo regulatorio que cumple con los aspectos regulatorios del diseño. El número de modelo normativo es el identificador principal del producto en la documentación reglamentaria e informes de ensayo, este número no se debe confundir con el nombre comercial o los números del producto.

5.2)
(en) This product was tested in a typical HP environment.
(de) Dieses Produkt wurde in einer typischen HP Konfiguration getestet.
(fr) Ce produit a été testé dans un environnement typique HP.
(es) Este producto se ha probado en un entorno típico de HP.

(en) The listed Notified Body issued the listed EU-type examination certificate, according to Annex III, for the essential requirement of article 3.2 of the RED Directive. (de) Die aufgeführte angegebene Einrichtung hat das aufgeführte EU-Prüfungszertifikat gemäß Anhang III für die wesentliche Anforderung von Artikel 3.2 der Red Richtlinie herausgegeben. (fr) L'organisme notifié répertorié a délivré le certificat d'examen de type UE répertorié, selon l'annexe III, pour l'exigence essentielle de l'article 3.2 de la directive rouge. (es) El organismo notificado listado emitió el certificado de examen de tipo UE listado, de acuerdo con el Anexo III, para el requisito esencial del Artículo 3.2 de la Directiva Roja.	**Notified Body: SPORTON INTERNATIONAL (USA) INC** **Notified Body Number: 2907** **Certificate ID: SN24C0011**

Palo Alto, CA
30-04-2024

Gilles Soulard, Manager
Product Compliance Center

(en) Local contact for regulatory topics only
(de) Lokale Ansprechpartner für Richtlinien und Bestimmungen
(fr) Contact local uniquement pour les réglementations
(es) Contacto local únicamente para temas de normativa:

EU: HP REG 23010, 08028 Barcelona, Spain
UK: HP Inc UK Ltd, Regulatory Enquiries, Earley West, 300 Thames Valley Park Drive, Reading, RG6 1PT
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501
Email: reg@hp.com www.hp.eu/certificates

(en) DECLARATION OF CONFORMITY / (de) KONFORMITÄTSERKLÄRUNG / (fr) DÉCLARATION DE CONFORMITÉ / (es) DECLARACIÓN DE CONFORMIDAD

DoC #: HSN-Q39C-4- R3

(en) ANNEX I **(de) ANHANG I** **(fr) ANNEXE I** **(es) ANEXO I**	
(en) Regulatory Model Number (RMN) (de) Regulatorische Modell Nummer (RMN) (fr) Numéro de modèle réglementaire (RMN) (es) Número de modelo reglamentario (RMN)	**HSN-Q39C-4**
1 (en) DESCRIPTION | 2 (en) OPTION RMN* 1 (de) BESCHREIBUNG | 2 (de) RMN OPTION* 1 (fr) DESCRIPTION | 2 (fr) RMN OPTION* 1 (es) DESCRIPCIÓN | 2 (es) RMN OPCIÓN*	

1	2
Power Adapter	TPN-XA07 TPN-XA15 TPN-XA19 TPN-XA20 TPN-XA21 TPN-XA23 TPN-XA01
Battery Pack	HSTNN-XB1G HSTNN-XB3Q HSTNN-XB3R HSTNN-XB0H TPN-XB1Y TPN-XB1Z TPN-XB1C
Transceiver 2,4 and 5/6 GHz WLAN and BT	MT7922A22M RTL8852CE
WWAN Transceiver, GPS Receiver	FM350-GL-16
NFC	XRAV-1

(en) DECLARATION OF CONFORMITY / (de) KONFORMITÄTSERKLÄRUNG / (fr) DÉCLARATION DE CONFORMITÉ / (es) DECLARACIÓN DE CONFORMIDAD

DoC #: HSN-Q39C-4- R3

(en) *Where X represents any alpha numeric character.
(de) *Wo X steht für eine beliebige alphanumerische Zeichen
(fr) *Où X représente n'importe quel caractère alphanumérique
(es) *Donde X representa cualquier carácter alfanumérico

(it) DICHIARAZIONE DI CONFORMITA' / (pt) DECLARAÇÃO DE CONFORMIDADE / (pl) DEKLARACJA ZGODNOŚCI / (ro) DECLARATIE DE CONFORMITATE

DoC #: HSN-Q39C-4- R3

(it) Nome del Fornitore (pt) Nome do fabricante (pl) Nazwa producenta (ro) Numele producătorului	**HP Inc.**
(it) Indirizzo del Fornitore (pt) Endereço do fabricante (pl) Adres producenta (ro) Adresa producătorului	**1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**
(it) dichiara che il prodotto (pt) declara, que o produto (pl) oświadcza, że produkt (ro) declară că produsul	
(it) Nome del prodotto e modello[5.2] (pt) Nome do produto e modelo[5.2] (pl) Nazwa produktu i modelu[5.2] (ro) Nume produs și model[5.2]	**HP ProBook 445 14 inch G11 Notebook PC; HP ProBook 445 14 inch G11 series;HP Elite mt645 G8 Mobile Thin Client; HP Elite mt645 G8 series; HP EliteBook 645 14 inch G11 Notebook PC; HP EliteBook 645 14 inch G11 series**
(it) Numero di modello normativo[5.1] (pt) Número de Modelo de Regulamentação[5.1] (pl) Numer modelu[5.1] (ro) Numărul de model de reglementare[5.1]	**HSN-Q39C-4**
(it) Opzioni del prodotto (pt) Opções do produto (pl) Opcje produktu (ro) Opțiuni de produse	**(it) Vedere Allegato I** **(pt) Ver anexo I** **(pl) Patrz załącznik I** **(ro) A se vedea anexa I**

(it) è conforme alle seguenti specifiche e regolamenti di prodotto
(pt) está em conformidade com as seguintes especificações e regulamentos do produto
(pl) jest zgodny z następującymi specyfikacjami produktu i rozporządzeń
(ro) în conformitate cu următoarele specificații și regulamentelor de produse

(it) Sicurezza / (pt) Segurança / (pl) Bezpieczeństwo / (ro) Siguranță

IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN IEC 62311:2020
EN 50665:2017
EN 62479:2010
EN 50663:2017
EN 50364:2018

(it) EMC / (pt) EMC / (pl) EMC / (ro) EMC

EN 55032:2015+A11:2020
EN 55035:2017+A11:2020
EN 61000-3-2:2014
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-3 V2.3.2
EN 301 489-17 V3.2.4
EN 301 489-19 V2.2.1
EN 301 489-52 V1.2.1
EN 60601-1-2:2015+ AMD1:2021
FCC CFR 47 Part 15
ICES-003, Issue 7

(it) Spettro Radio / (pt) Espectro de radiofrequências / (pl) Widmo radiowe / (ro) Spectrului de frecvențe radio

EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 687 V1.1.1
EN 301 908-1 V15.2.1
EN 301 908-2 V13.1.1
EN 301 908-13 V13.2.1
EN 303 413 V1.2.1
EN 300 330 V2.1.1

(it) Ecodesign / (pt) ecodesign / (pl) Ekoprojektu / (ro) ecodesign

Regulation (EU) 2023/826
EN 50564:2011
IEC 62301:2011

RoHS

EN IEC 63000:2018

(it) Il prodotto con la presenza è conforme ai requisiti di quanto segue e trasporta di conseguenza il marchio CE (pt) O produto contraria os requisitos do seguinte e carrega o marco CE de acordo (pl) Produkt jest zgodny z wymogami następujących i odpowiednio przenosi znakowanie CE (ro) Produsul de aici respectă cerințele următoarelor și transportă în consecință marcare CE în consecință	**Radio Equipment Directive 2014/53/EU** **Ecodesign Directive 2009/125/EU** **RoHS Directive 2011/65/EU** **Battery Regulation 2023/1542**

(it) DICHIARAZIONE DI CONFORMITA' / (pt) DECLARAÇÃO DE CONFORMIDADE / (pl) DEKLARACJA ZGODNOŚCI / (ro) DECLARATIE DE CONFORMITATE

DoC #: HSN-Q39C-4- R3

UK ONLY: This product herewith complies with the requirements of the following and carries the UKCA marking.	**Radio Equipment Regulations 2017** **Ecodesign for Energy-Related Products Regulations 2010** **Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012**

(it) Informazioni aggiuntive
(pt) Informações adicionais
(pl) Dodatkowe informacje
(ro) Informații suplimentare

5.1)
(it) A questo prodotto è assegnato un Numero di modello normativo (RMN) che rimane con gli aspetti normativi della progettazione. Il numero di modello normativo è l'identificativo principale del prodotto nella documentazione normativa e rapporti di prova, questo numero non deve essere confuso con il nome commerciale o il numero di prodotto.
(pt) Este produto recebeu um Número de modelo de regulamentação que fica com os aspectos regulatórios do design. O Número de Modelo de Regulamentação é o identificador principal do produto na documentação regulamentar e relatórios de ensaio, este número não deve ser confundido com o nome comercial ou os números dos produtos.
(pl) Produkt ten został przypisany numer modelu z aspektów regulacyjnych projekt. Numer modelu jest głównym identyfikatorem produktu w dokumentacji normatywnej i raporty z badań, liczba ta nie powinna być mylona z nazwą handlową lub też liczby produktów.
(ro) Acestui produs li este atribuit un număr de model de reglementare asociat cu aspectele regulatorii de proiectare. Numărul de model de reglementare este identificatorul principal al produsului în documentația de reglementare și rapoarte de testare, acest număr nu trebuie confundat cu numele de marketing sau numarul de produs.

5.2)
(it) Questo prodotto è stato testato in un tipico ambiente HP .
(pt) Este produto foi testado em um ambiente típico de HP .
(pl) Produkt był testowany w typowym środowisku HP, w połączeniu z systemem gospodarza HP .
(ro) Acest produs a fost testat într-un mediu tipic HP împreună cu un sistem gazdă HP .

(it) L'organismo notificato elencato ha emesso il certificato di esame di tipo UE elencato, secondo l'allegato III, per il requisito essenziale dell'articolo 3.2 della direttiva rossa. (pt) O órgão notificado listado emitiu o certificado de exame do tipo UE listado, de acordo com o Anexo III, para o requisito essencial do artigo 3.2 da Diretiva Vermelha. (pl) Wymieniona notowana organ wydał wymieniony certyfikat egzaminacyjny typu UE, zgodnie z załącznikiem III, dla niezbędnego wymogu art. 3.2 Czerwonej Dyrektywy. (ro) Organul notificat listat a emis certificatul de examinare listat de tip UE, conform anexei III, pentru cerința esențială a articolului 3.2 din Directiva Roșie.	**Notified Body: SPORTON INTERNATIONAL (USA) INC** **Notified Body Number: 2907** **Certificate ID: SN24C0011**

Palo Alto, CA
30-04-2024

Gilles Soulard, Manager
Product Compliance Center

(it) Contatto locale solo per informazioni sulla conformità al marchio CE
(pt) O contato local para tópicos regulamentares apenas
(pl) Lokalny kontakt na temat przepisów
(ro) Persoană de contact locală numai pentru subiecte de reglementare:

EU: HP REG 23010, 08028 Barcelona, Spain
UK: HP Inc UK Ltd, Regulatory Enquiries, Earley West, 300 Thames Valley Park Drive, Reading, RG6 1PT
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501
Email: reg@hp.com www.hp.eu/certificates

(it) DICHIARAZIONE DI CONFORMITA' / (pt) DECLARAÇÃO DE CONFORMIDADE / (pl) DEKLARACJA ZGODNOŚCI / (ro) DECLARATIE DE CONFORMITATE

DoC #: HSN-Q39C-4- R3

(it) ALLEGATO I **(pt) ANEXO I** **(pl) ZAŁĄCZNIK I** **(ro) ANEXA I**	
(it) Numero di modello normativo (RMN) (pt) Número de Modelo de Regulamentação (RMN). (pl) Numer modelu (RMN) (ro) Numărul de model de reglementare (RMN)	**HSN-Q39C-4**
1 (it) DESCRIZIONE | 2 (it) RMN OPZIONE* 1 (pt) DESCRIÇÃO | 2 (pt) RMN OPÇÃO* 1 (pl) OPIS | 2 (pl) RMN OPCJA* 1 (ro) DESCRIERE | 2 (ro) RMN OPȚIUNE*	

1	2
Power Adapter	TPN-XA07 TPN-XA15 TPN-XA19 TPN-XA20 TPN-XA21 TPN-XA23 TPN-XA01
Battery Pack	HSTNN-XB1G HSTNN-XB3Q HSTNN-XB3R HSTNN-XB0H TPN-XB1Y TPN-XB1Z TPN-XB1C
Transceiver 2,4 and 5/6 GHz WLAN and BT	MT7922A22M RTL8852CE
WWAN Transceiver, GPS Receiver	FM350-GL-16
NFC	XRAV-1

(it) *Dove X rappresenta qualsiasi carattere alfanumerico
(pt) *Onde X representa qualquer caractere alfanumérico

(pl) *W przypadku, gdy X oznacza dowolny alfa cyfrę
(ro) *În cazul în care X reprezintă orice caracter alfanumeric

(hu) MEGFELELŐSÉGI NYILATKOZAT / (nl) CONFORMITEITSVERKLARING / (el) ΔΉΛΩΣΗ ΣΥΜΜΌΡΦΩΣΗΣ / (sv) FÖRKLARING OM ÖVERENSSTÄMMELSE

DoC #: HSN-Q39C-4- R3

(hu) A gyártó neve (nl) Naam van de fabrikant (el) Όνομα κατασκευαστή (sv) Tillverkarens namn	**HP Inc.**
(hu) Gyártó címe (nl) Adres van de fabrikant (el) Διεύθυνση του κατασκευαστή (sv) Tillverkarens adress	**1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**
(hu) kijelenti, hogy a termék (nl) verklaart, dat het product (el) δηλώνει ότι το προϊόν (sv) förklarar att produkten	
(hu) A termék neve és a modell[5.2] (nl) Naam van het product en model[5.2] (el) Όνομα προϊόντος και μοντέλου[5.2] (sv) Namn och modell[5.2]	**HP ProBook 445 14 inch G11 Notebook PC; HP ProBook 445 14 inch G11 series;HP Elite mt645 G8 Mobile Thin Client; HP Elite mt645 G8 series; HP EliteBook 645 14 inch G11 Notebook PC; HP EliteBook 645 14 inch G11 series**
(hu) Szabályozási Modell száma[5.1] (nl) Regulatory Model Number[5.1] (el) Αριθμός Μοντέλο κατά τους κανονισμούς[5.1] (sv) Regleringsmodellnummer[5.1]	**HSN-Q39C-4**
(hu) Termék opciók (nl) Product opties (el) Επιλογές Προϊόντος (sv) Produktalternativ	**(hu) Lásd az I. melléklet** **(nl) Zie bijlage I** **(el) Βλέπε παράρτημα I** **(sv) Se bilaga I**

(hu) megfelel az alábbi termék dokumentáció és rendeletek:
(nl) voldoet aan de volgende productspecificaties en wetgeving
(el) συμμορφώνεται προς τις εξής προδιαγραφές και κανονισμοί
(sv) överensstämmer med följande produktspecifikationer och förordningar

(hu) Biztonság / (nl) Veiligheid / (el) Ασφάλεια / (sv) Säkerhet
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN IEC 62311:2020
EN 50665:2017
EN 62479:2010
EN 50663:2017
EN 50364:2018

(hu) EMC / (nl) EMC / (el) EMC / (sv) EMC
EN 55032:2015+A11:2020
EN 55035:2017+A11:2020
EN 61000-3-2:2014
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-3 V2.3.2
EN 301 489-17 V3.2.4
EN 301 489-19 V2.2.1
EN 301 489-52 V1.2.1
EN 60601-1-2:2015+ AMD1:2021
FCC CFR 47 Part 15
ICES-003, Issue 7

(hu) Rádióspektrumügyek / (nl) Radiospectrum / (el) ραδιοφάσματος / (sv) Rádiového spektra
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 687 V1.1.1
EN 301 908-1 V15.2.1
EN 301 908-2 V13.1.1
EN 301 908-13 V13.2.1
EN 303 413 V1.2.1
EN 300 330 V2.1.1

(hu) Környezetbarát tervezési / (nl) ecodesign / (el) οικολογικού σχεδιασμού / (sv) ekodesign
Regulation (EU) 2023/826
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

(hu) A termék itt megfelel a következők követelményeinek, és ennek megfelelően hordozza a markingot CE (nl) Het product voldoet hierbij aan de vereisten van het volgende en draagt de markering dienovereenkomstig bij (el) Το προϊόν συμμορφώνεται με τις απαιτήσεις των ακόλουθων και μεταφέρει ανάλογα CE το (sv) Produkten härmed uppfyller kraven i följande och bär CE-märkning i enlighet därmed	**Radio Equipment Directive 2014/53/EU** **Ecodesign Directive 2009/125/EU** **RoHS Directive 2011/65/EU** **Battery Regulation 2023/1542**

(hu) MEGFELELŐSÉGI NYILATKOZAT / (nl) CONFORMITEITSVERKLARING / (el) ΔΉΛΩΣΗ ΣΥΜΜΌΡΦΩΣΗΣ / (sv) FÖRKLARING OM ÖVERENSSTÄMMELSE

DoC #: HSN-Q39C-4- R3

UK ONLY: This product herewith complies with the requirements of the following and carries the UKCA marking.	**Radio Equipment Regulations 2017** **Ecodesign for Energy-Related Products Regulations 2010** **Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012**

(hu) További információ
(nl) Extra informatie
(el) Πρόσθετες πληροφορίες
(sv) Ytterligare information

5.1)
(hu) Ez a termék tartozik egy hatósági azonosítási típusszám ami marad szabályozási szempontból a design. A szabályozási modellszámmal a fő termék azonosítóját a szabályozási dokumentációban és vizsgálati jelentések, ez a szám nem keverendő össze a kereskedelmi névvel vagy a termék számokat.
(nl) Dit product is voorzien van een wettelijk modelnummer die blijft bij de regelgevende aspecten van de ontwerp. Het voorgeschreven modelnummer is het belangrijkste product-id in de regelgeving documentatie en testrapporten, moet dit nummer niet verwarren met de merknaam of de productnummers.
(el) Αυτό το προϊόν έχει εκχωρηθεί ένας ρυθμιστικός αριθμός μοντέλου που μένει με τις ρυθμιστικές πτυχές των σχεδιασμό. Ο αριθμός Ρυθμιστική μοντέλου είναι το κύριο αναγνωριστικό του προϊόντος με την κανονιστική τεκμηρίωση και εκθέσεις δοκιμών, ο αριθμός αυτός δεν πρέπει να συγχέεται με την εμπορική ονομασία ή τους αριθμούς προϊόντος.
(sv) Den här produkten har tilldelats ett kontrollmodellnummer som stannar med de regulatoriska aspekterna av design. Kontrollmodellnumret är den viktigaste produktbeteckning i lagstiftnings dokumentation och provningsrapporter, detta nummer ska inte förväxlas med produktnamn eller produktnummer.

5.2)
(hu) Ez a termék tesztelése egy tipikus HP környezetben együtt egy HP gazda rendszert.
(nl) Dit product werd getest in het HP-omgeving in combinatie met een HP hostsysteem.
(el) Αυτό το προϊόν έχει δοκιμαστεί σε ένα τυπικό περιβάλλον HP.
(sv) Produkten testades i en typisk HP-miljö tillsammans med en HP-värdsystem.

(hu) A felsorolt értesített testület a III. Melléklet szerint kiadta a felsorolt EU-típusú vizsgálati igazolást a piros irányelv 3.2. Cikkének alapvető követelménye szerint. (nl) Het genoemde aangemelde instantie heeft het beursgenoteerde EU-type onderzoekscertificaat uitgegeven, volgens bijlage III, voor de essentiële vereiste van artikel 3.2 van de Red Richtlijn. (el) Ο αναφερόμενος ειδοποιημένος φορέας εξέδωσε το πιστοποιητικό εξέτασης τύπου ΕΕ, σύμφωνα με το Παράρτημα III, για την βασική απαίτηση του άρθρου 3.2 της Red Directive. (sv) Det listade anmälda organet utfärdade det listade examenscertifikatet för EU-typ, enligt bilaga III, för det väsentliga kravet i artikel 3.2 i det röda direktivet.	**Notified Body: SPORTON INTERNATIONAL (USA) INC** **Notified Body Number: 2907** **Certificate ID: SN24C0011**

Palo Alto, CA
30-04-2024

Gilles Soulard, Manager
Product Compliance Center

(hu) Helyi kapcsolattartó a jogi tudnivalókkal
(nl) Lokale contactpersoon voor mbtvoorschriften
(el) Τοπική επαφής για θέματα κανονισμών μόνο
(sv) Lokal kontakt bara för regleringsärenden

EU: HP REG 23010, 08028 Barcelona, Spain
UK: HP Inc UK Ltd, Regulatory Enquiries, Earley West, 300 Thames Valley Park Drive, Reading, RG6 1PT
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501
Email: reg@hp.com www.hp.eu/certificates

(hu) MEGFELELŐSÉGI NYILATKOZAT / (nl) CONFORMITEITSVERKLARING / (el) ΔΉΛΩΣΗ ΣΥΜΜΌΡΦΩΣΗΣ / (sv) FÖRKLARING OM ÖVERENSSTÄMMELSE

DoC #: HSN-Q39C-4- R3

(hu) I. MELLÉKLET **(nl) BIJLAGE I** **(el) ΤΟ ΠΑΡΆΡΤΗΜΑ I** **(sv) BILAGA I**	
(hu) Szabályozási Modell száma (RMN) (nl) Regulatory Model Number (RMN) (el) Αριθμός Μοντέλο κατά τους κανονισμούς (RMN) (sv) Regleringsmodellnummer (RMN)	**HSN-Q39C-4**
1 (hu) LEÍRÁS | 2 (hu) RMN OPCIÓ* 1 (nl) BESCHRIJVING | 2 (nl) RMN OPTIE* 1 (el) ΠΕΡΙΓΡΑΦΗ | 2 (el) RMN ΕΠΙΛΟΓΉ* 1 (sv) BESKRIVNING | 2 (sv) RMN ALTERNATIV*	

1	2
Power Adapter	TPN-XA07 TPN-XA15 TPN-XA19 TPN-XA20 TPN-XA21 TPN-XA23 TPN-XA01
Battery Pack	HSTNN-XB1G HSTNN-XB3Q HSTNN-XB3R HSTNN-XB0H TPN-XB1Y TPN-XB1Z TPN-XB1C
Transceiver 2,4 and 5/6 GHz WLAN and BT	MT7922A22M RTL8852CE
WWAN Transceiver, GPS Receiver	FM350-GL-16
NFC	XRAV-1

(hu) *Ha X jelentése bármilyen alfanumerikus karaktert
(nl) *Waar X staat voor elke alfanumerieke tekens

(hu) MEGFELELŐSÉGI NYILATKOZAT / (nl) CONFORMITEITSVERKLARING / (el) ΔΉΛΩΣΗ ΣΥΜΜΌΡΦΩΣΗΣ / (sv) FÖRKLARING OM ÖVERENSSTÄMMELSE

DoC #: HSN-Q39C-4- R3

(el) *Σε περίπτωση που το X αντιπροσωπεύει οποιοδήποτε αλφαριθμητικό χαρακτήρα
(sv) *Där X representerar någon alfanumeriska tecken

(cs) PROHLÁŠENÍ O SHODĚ / (bg) ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ / (sk) VYHLÁSENIE O ZHODE / (da) OVERENSSTEMMELSESERKLÆRING

DoC #: HSN-Q39C-4- R3

(cs) Jméno výrobce (bg) Наименование на производителя (sk) Meno výrobcu (da) Producentens navn	**HP Inc.**
(cs) Adresa výrobce (bg) Производителя Адрес (sk) adresa výrobcu (da) Producentens adresse	**1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**
(cs) vyhovuje následujícím specifikacím a nařízení produktu (bg) заявява, че продуктът (sk) prehlasuje, že výrobok (da) erklærer, at produktet	
(cs) Název produktu a model[5.2] (bg) Име на продукта и модел[5.2] (sk) Názov produktu a model[5.2] (da) Produktnavn og Model[5.2]	**HP ProBook 445 14 inch G11 Notebook PC; HP ProBook 445 14 inch G11 series;HP Elite mt645 G8 Mobile Thin Client; HP Elite mt645 G8 series; HP EliteBook 645 14 inch G11 Notebook PC; HP EliteBook 645 14 inch G11 series**
(cs) Regulační číslo modelu[5.1] (bg) Нормативен номер на модела[5.1] (sk) Regulačné číslo modelu[5.1] (da) Lovpligtigt modelnummer[5.1]	**HSN-Q39C-4**
(cs) Možnosti výrobku (bg) Опции на продукта (sk) Možnosti výrobku (da) Produkt Valg	**(cs) Viz příloha I** **(bg) Виж приложение I** **(sk) Pozri prílohu I** **(da) Se bilag I**

(cs) vyhovuje následujícím specifikacím a nařízení produktu
(bg) съответства на следните спецификации на продукта и регламенти
(sk) spĺňa nasledujúce špecifikácie a nariadenia produktu
(da) opfylder følgende produktspecifikationer og forordninger

(cs) Bezpečnost / (bg) Безопасност / (sk) Bezpečnosť / (da) Sikkerhed
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN IEC 62311:2020
EN 50665:2017
EN 62479:2010
EN 50663:2017
EN 50364:2018

(cs) EMC / (bg) EMC / (sk) EMC / (da) EMC
EN 55032:2015+A11:2020
EN 55035:2017+A11:2020
EN 61000-3-2:2014
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-3 V2.3.2
EN 301 489-17 V3.2.4
EN 301 489-19 V2.2.1
EN 301 489-52 V1.2.1
EN 60601-1-2:2015+ AMD1:2021
FCC CFR 47 Part 15
ICES-003, Issue 7

(cs) Rádiové spektrum / (bg) Радиочестотният спектър / (sk) Rádiové spektrum / (da) Radiofrekvenser
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 687 V1.1.1
EN 301 908-1 V15.2.1
EN 301 908-2 V13.1.1
EN 301 908-13 V13.2.1
EN 303 413 V1.2.1
EN 300 330 V2.1.1

(cs) ekodesignu / (bg) екодизайна / (sk) ekodizajne / (da) miljøvenligt design
Regulation (EU) 2023/826
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

(cs) Produkt tímto odpovídá požadavkům následujících CE (bg) Продуктът тук отговаря на изискванията на следното и съответно CE носи знамето (sk) Produkt týmto spĺňa požiadavky nasledujúceho a podľa toho nesie označenie CE (da) Produktet overholder hermed kravene i følgende og bærer CE-mærket i overensstemmelse hermed	**Radio Equipment Directive 2014/53/EU** **Ecodesign Directive 2009/125/EU** **RoHS Directive 2011/65/EU** **Battery Regulation 2023/1542**

(cs) PROHLÁŠENÍ O SHODĚ / (bg) ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ / (sk) VYHLÁSENIE O ZHODE / (da) OVERENSSTEMMELSESERKLÆRING

DoC #: HSN-Q39C-4- R3

UK ONLY: This product herewith complies with the requirements of the following and carries the UKCA marking.	**Radio Equipment Regulations 2017** **Ecodesign for Energy-Related Products Regulations 2010** **Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012**

(cs) Další informace
(bg) Допълнителна информация
(sk) Ďalšie informácie
(da) Yderligere information

5.1)
(cs) Tento produkt je přiděleno regulatorní číslo modelu, který zůstává s regulačními aspekty konstrukce. Počet Regulační model je hlavním identifikátorem produktu v regulační dokumentaci a protokoly o zkouškách, toto číslo by nemělo být zaměňováno s marketingovým názvem nebo čísla produktu.
(bg) Този продукт има нормативен номер на модела, който остава с регулаторните аспекти на дизайн. Номер на Нормативен модел е идентификатора основен продукт в нормативната документация и протоколи от изпитвания, този брой не трябва да се бърка с пазарното име или номера на продукта.
(sk) Tento produkt je pridelené regulačné číslo modelu, ktorý zostáva s regulačnými aspektmi konštrukcie. Počet Regulačný model je hlavným identifikátorom produktu v regulačnej dokumentácii a protokoly o skúškach, toto číslo by sa nemalo zamieňať s marketingovým názvom alebo s výrobnými číslami.
(da) Dette produkt er tildelt et lovpligtigt modelnummer, som forbliver de lovgivningsmæssige aspekter af den design. Det lovpligtige modelnummer er det vigtigste produkt-id i den lovgivningsmæssige dokumentation og testrapporter, bør dette antal ikke forveksles med navn markedsføringen eller varenumre.

5.2)
(cs) Tento výrobek byl testován v typické prostředí HP ve spolupráci s hostitelským systémem HP.
(bg) Този продукт е изпробван в типична HP среда във връзка с хост система HP.
(sk) Tento výrobok bol testovaný v typickej prostredí HP v spolupráci s hostiteľským systémom HP.
(da) Dette produkt blev testet i en typisk HP-miljø i forbindelse med en HP host system.

(cs) Oznámen oznámený orgán vydal uvedený osvědčení o zkoušce typu EU podle přílohy III pro základní požadavek článku 3.2 červené směrnice. (bg) Изброеният уведомен орган издаде изброения сертификат за изпит за изпитване на ЕС, според приложение III, за основното изискване на член 3.2 от Директивата RED. (sk) Uvedený oznámený orgán vydal uvedený osvedčenie o skúške typu EÚ podľa prílohy III, pokiaľ ide o základnú požiadavku článku 3.2 červenej smernice. (da) Det anførte meddelte organ udstedte det anførte EU-eksamenseksamen i henhold til bilag III for det væsentlige krav i artikel 3.2 i det røde direktiv.	**Notified Body: SPORTON INTERNATIONAL (USA) INC** **Notified Body Number: 2907** **Certificate ID: SN24C0011**

Palo Alto, CA
30-04-2024

Gilles Soulard, Manager
Product Compliance Center

(cs) Lokální kontakt pro informace pouze o směrnicích
(bg) Local контакт за регулаторни теми само
(sk) Lokálne kontakt pre informácie iba o smerniciach
(da) Lokal kontaktperson for regulative emner

EU: HP REG 23010, 08028 Barcelona, Spain
UK: HP Inc UK Ltd, Regulatory Enquiries, Earley West, 300 Thames Valley Park Drive, Reading, RG6 1PT
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501
Email: reg@hp.com www.hp.eu/certificates

(cs) PROHLÁŠENÍ O SHODĚ / (bg) ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ / (sk) VYHLÁSENIE O ZHODE / (da) OVERENSSTEMMELSESERKLÆRING

DoC #: HSN-Q39C-4- R3

(cs) PŘÍLOHA I **(bg) ПРИЛОЖЕНИЕ I** **(sk) PRÍLOHA I** **(da) BILAG I**	
(cs) Regulační číslo modelu (RMN) (bg) Нормативен номер на модела (RMN) (sk) Regulačné číslo modelu (RMN) (da) Lovpligtigt modelnummer (RMN)	**HSN-Q39C-4**
1 (cs) POPIS | 2 (cs) RMN VOLBA* 1 (bg) ОПИСАНИЕ | 2 (bg) RMN ОПЦИЯ* 1 (sk) OPIS | 2 (sk) RMN VOĽBA* 1 (da) BESKRIVELSE | 2 (da) RMN OPTION*	

1	2
Power Adapter	TPN-XA07 TPN-XA15 TPN-XA19 TPN-XA20 TPN-XA21 TPN-XA23 TPN-XA01
Battery Pack	HSTNN-XB1G HSTNN-XB3Q HSTNN-XB3R HSTNN-XB0H TPN-XB1Y TPN-XB1Z TPN-XB1C
Transceiver 2,4 and 5/6 GHz WLAN and BT	MT7922A22M RTL8852CE
WWAN Transceiver, GPS Receiver	FM350-GL-16
NFC	XRAV-1

(cs) *Tam, kde X představuje libovolný alfanumerický znak
(bg) *Когато X представлява всяка алфа цифров знак

(sk) *Tam, kde X predstavuje ľubovoľný alfanumerický znak
(da) *Hvor X betegner en hvilken som helst alfanumerisk tegn

(fi) VAATIMUSTENMUKAISUUSVAKUUTUS / (lt) ATITIKTIES DEKLARACIJA / (no) SAMSVARSERKLÆRING / (sl) IZJAVA O SKLADNOSTI

DoC #: HSN-Q39C-4- R3

(fi) Valmistajan nimi (lt) Gamintojo pavadinimas (no) Produsentens navn (sl) Ime proizvajalca	**HP Inc.**
(fi) Valmistajan osoite (lt) Gamintojo adresas (no) Produsentens adresse (sl) Naslov proizvajalca	**1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**
(fi) ilmoittaa, että tuote (lt) pareiškia, kad produktas (no) erklærer at dette produktet (sl) izjavlja, da izdelek	
(fi) Tuotteen nimi ja malli[5.2] (lt) Produkto pavadinimas ir modelis[5.2] (no) Produktnavn og modell[5.2] (sl) Ime izdelka in model[5.2]	**HP ProBook 445 14 inch G11 Notebook PC; HP ProBook 445 14 inch G11 series;HP Elite mt645 G8 Mobile Thin Client; HP Elite mt645 G8 series; HP EliteBook 645 14 inch G11 Notebook PC; HP EliteBook 645 14 inch G11 series**
(fi) Säädösmallinumero[5.1] (lt) Normatyvinis modelio numeris[5.1] (no) Forskriftsmessig modellnummer[5.1] (sl) Upravna številka modela[5.1]	**HSN-Q39C-4**
(fi) Tuotevaihtoehdot (lt) Prekės pasirinkimai (no) Produktvalg (sl) Možnosti izdelka	**(fi) Katso liite I** **(lt) Žiūrėti I priedą** **(no) Se vedlegg I** **(sl) Glej Prilogo I**

(fi) täyttää seuraavat tuotevaatimukset ja asetukset
(lt) atitinka šias produkto specifikacijas ir reglamentų
(no) er i samsvar med følgende produktspesifikasjoner og forskrift
(sl) v skladu z naslednjimi specifikacijami in predpisi o izdelku

(fi) Turvallisuus / (lt) Sauga / (no) Sikkerhet / (sl) Siguranţă	**(fi) EMC / (lt) EMC / (no) EMC / (sl) EMC**	**(fi) Radiotaajuuksien / (lt) Radijo dažnių spektras / (no) Radio spektrum / (sl) Radijski spekter**
IEC 62368-1:2018	EN 55032:2015+A11:2020	EN 300 328 V2.2.2
EN IEC 62368-1:2020 +A11:2020	EN 55035:2017+A11:2020	EN 301 893 V2.1.1
EN IEC 62311:2020	EN 61000-3-2:2014	EN 300 440 V2.1.1
EN 50665:2017	EN 61000-3-3:2013 +A1:2019	EN 303 687 V1.1.1
EN 62479:2010	EN 301 489-1 V2.2.3	EN 301 908-1 V15.2.1
EN 50663:2017	EN 301 489-3 V2.3.2	EN 301 908-2 V13.1.1
EN 50364:2018	EN 301 489-17 V3.2.4	EN 301 908-13 V13.2.1
	EN 301 489-19 V2.2.1	EN 303 413 V1.2.1
	EN 301 489-52 V1.2.1	EN 300 330 V2.1.1
	EN 60601-1-2:2015+ AMD1:2021	
	FCC CFR 47 Part 15	
	ICES-003, Issue 7	

(fi) Ecodesign / (lt) Ekologinio / (no) økodesign / (sl) okoljsko primerni zasnovi
Regulation (EU) 2023/826
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

(fi) Tuote täyttää seuraavan vaatimukset ja kantaa CE-merkintää vastaavasti (lt) Produktas atitinka šiuos reikalavimus ir atitinkamai nurodo CE žymėjimą (no) Produktet følger med kravene til følgende og bærer CE-merket deretter (sl) Izdelek s tem ustreza zahtevam naslednjega in ustrezno nosi označevanje CE	**Radio Equipment Directive 2014/53/EU** **Ecodesign Directive 2009/125/EU** **RoHS Directive 2011/65/EU** **Battery Regulation 2023/1542**
UK ONLY: This product herewith complies with the requirements of the following and carries the UKCA marking.	**Radio Equipment Regulations 2017**

(fi) VAATIMUSTENMUKAISUUSVAKUUTUS / (lt) ATITIKTIES DEKLARACIJA / (no) SAMSVARSERKLÆRING / (sl) IZJAVA O SKLADNOSTI

DoC #: HSN-Q39C-4- R3

	Ecodesign for Energy-Related Products Regulations 2010 **Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012**

(fi) Lisätiedot
(lt) Papildoma informacija
(no) Tilleggsinformasjon
(sl) Dodatne informacije

5.1)
(fi) Tämä tuote on annettu virallinen numero, joka pysyy hallinnolliset näkökohdat suunnittelu. Säädöksiä koskeva mallinumero on tärkein tuotteen tunniste sääntely asiakirjat ja testausselosteet, tätä numeroa ei pidä sekoittaa tuotteen nimeen tai tuotteen numeroita.
(lt) Šis produktas pažymėtas normatyviniu modelio numeriu, kuris lieka su reglamentavimo aspektų dizainas. Normatyvinis modelio numeris yra pagrindinė produkto identifikatorius reguliavimo dokumentus ir bandymų ataskaitos, šis skaičius neturėtų būti painiojamas su prekės pavadinimu arba gaminio numeriais.
(no) Dette produktet er tildelt et modellnummer som holder med de regulatoriske aspekter av design. Forskriftsmodellnummeret er den viktigste produkt-ID i regulatoriske dokumentasjon og testrapporter, bør dette nummeret ikke forveksles med markedsføringsnavnet eller produktnumrene.
(sl) Ta izdelek je dodeljena upravna številka modela, ki ostane pri regulativnih vidikih zasnova. Število Regulativni model je glavni identifikator izdelka v regulativnem dokumentacije in poročila o preskusih, to število ne sme zamenjevati s tržnim imenom ali številkami izdelka.

5.2)
(fi) Tämä tuote testattu tyypillisessä HP ympäristöministeriö yhdessä HP isäntä järjestelmä.
(lt) Ši prekė buvo išbandytas standartinės HP aplinkoje kartu su HP priimančioji sistema.
(no) Produktet ble testet i et typisk miljø HP i forbindelse med en HP-vertssystemet.
(sl) Acest produs fost testat intr-un Mediu tipic HP împreună cu un sistem Gazda HP.

(fi) Listattu ilmoitettu elin julkaisi Listad EU-tyyppisen tutkimustodistuksen liitteen III mukaan punaisen direktiivin 3.2 artiklan olennaisesta vaatimuksesta. (lt) Išvardytos pranešimo įstaiga išdavė išvardytą ES tipo egzamino pažymėjimą, remiantis III priede, dėl esminio Raudonosios direktyvo 3.2 straipsnio reikalavimo. (no) Det oppførte varslede organet ga ut det listede eksamenssertifikatet for EU-type, ifølge vedlegg III, for det essensielle kravet i artikkel 3.2 i det røde direktivet. (sl) Navedeni obveščeni organ je v skladu z Prilogo III izdal navedeno potrdilo o izpitu EU za bistveno zahtevo člena 3.2 Rdeče direktive.	**Notified Body: SPORTON INTERNATIONAL (USA) INC** **Notified Body Number: 2907** **Certificate ID: SN24C0011**

Palo Alto, CA
30-04-2024

Gilles Soulard, Manager
Product Compliance Center

(fi) Paikallinen yhteyshenkilö säännöksistä antavat
(lt) Vietinis kontaktas normatyviniais klausimais tik
(no) Lokal kontakt for spørsmål om forskrifter
(sl) Lokalni kontakt za upravnimi temami

EU: HP REG 23010, 08028 Barcelona, Spain
UK: HP Inc UK Ltd, Regulatory Enquiries, Earley West, 300 Thames Valley Park Drive, Reading, RG6 1PT
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501
Email: reg@hp.com www.hp.eu/certificates

(fi) VAATIMUSTENMUKAISUUSVAKUUTUS / (lt) ATITIKTIES DEKLARACIJA / (no) SAMSVARSERKLÆRING / (sl) IZJAVA O SKLADNOSTI

DoC #: HSN-Q39C-4- R3

(fi) LIITE I **(lt) I PRIEDAS** **(no) VEDLEGG I** **(sl) PRILOGA I**	
(fi) Säädösmallinumero (RMN) (lt) Normatyvinis modelio numeris (RMN) (no) Forskriftsmessig modellnummer (RMN) (sl) Upravna številka modela (RMN)	**HSN-Q39C-4**
1 (fi) KUVAUS | 2 (fi) RMN VAIHTOEHTO* 1 (lt) APRAŠYMAS | 2 (lt) RMN PASIRINKIMAS* 1 (no) BESKRIVELSE | 2 (no) RMN OPSJON* 1 (sl) OPIS | 2 (sl) RMN MOŽNOST*	

1	2
Power Adapter	TPN-XA07 TPN-XA15 TPN-XA19 TPN-XA20 TPN-XA21 TPN-XA23 TPN-XA01
Battery Pack	HSTNN-XB1G HSTNN-XB3Q HSTNN-XB3R HSTNN-XB0H TPN-XB1Y TPN-XB1Z TPN-XB1C
Transceiver 2,4 and 5/6 GHz WLAN and BT	MT7922A22M RTL8852CE
WWAN Transceiver, GPS Receiver	FM350-GL-16
NFC	XRAV-1

(fi) *Jos X on mikä tahansa aakkosnumeerinen merkki
(lt) *Jeigu X žymi bet alfa skaitinė charakterį

(fi) VAATIMUSTENMUKAISUUSVAKUUTUS / (lt) ATITIKTIES DEKLARACIJA / (no) SAMSVARSERKLÆRING / (sl) IZJAVA O SKLADNOSTI

DoC #: HSN-Q39C-4- R3

(no) *Hvor X representerer en hvilken som helst alfa-numeriske karakteren
(sl) *Če je X predstavlja nobene alfa numerični znak

(et) VASTAVUSDEKLARATSIOON / (hr) IZJAVA O SUKLADNOSTI / (lv) ATBILSTĪBAS DEKLARĀCIJA / (is) LEYFISYFIRLÝSING

DoC #: HSN-Q39C-4- R3

(et) Tootja nimi (hr) Naziv proizvođača (lv) Ražotāja nosaukums (is) Framleiðanda Heiti	**HP Inc.**
(et) Tootja aadress (hr) Proizvođača adresa (lv) Ražotāja adrese (is) Heimilisfang framleiðanda	**1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**
(et) kinnitab, et toode (hr) izjavljuje da je proizvod (lv) paziņo, ka produkts (is) því yfir, að varan	
(et) Toote nimi ja mudel[5.2] (hr) Naziv proizvoda i Model[5.2] (lv) Produkta nosaukums un modelis[5.2] (is) Nafn vöru og Model[5.2]	**HP ProBook 445 14 inch G11 Notebook PC; HP ProBook 445 14 inch G11 series;HP Elite mt645 G8 Mobile Thin Client; HP Elite mt645 G8 series; HP EliteBook 645 14 inch G11 Notebook PC; HP EliteBook 645 14 inch G11 series**
(et) Normatiivne mudelinumber[5.1] (hr) Broj modela prema propisima[5.1] (lv) Regulējošais modeļa numurs[5.1] (is) Regulatory Model Number[5.1]	**HSN-Q39C-4**
(et) Toote lisaseadmed (hr) Mogućnosti proizvoda (lv) Izstrādājuma iespējas (is) Valmöguleikar vöru	**(et) Vt lisa I** **(hr) Vidi Prilog I** **(lv) Féach pielikums I** **(is) Sjá viðauka I**

(et) vastab järgmistele tootespetsifikatsioonidele ja määrused
(hr) sukladan sljedećim specifikacijama proizvoda i propisa
(lv) atbilst šādām iekārtas specifikācijām un regulām
(is) í samræmi við eftirfarandi forskriftir vara og reglugerðir

(et) Ohutus / (hr) Sigurnost / (lv) Sábháilteacht / (is) Öryggi

IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN IEC 62311:2020
EN 50665:2017
EN 62479:2010
EN 50663:2017
EN 50364:2018

(et) EMC / (hr) EMC / (lv) EMC / (is) EMC

EN 55032:2015+A11:2020
EN 55035:2017+A11:2020
EN 61000-3-2:2014
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-3 V2.3.2
EN 301 489-17 V3.2.4
EN 301 489-19 V2.2.1
EN 301 489-52 V1.2.1
EN 60601-1-2:2015+ AMD1:2021
FCC CFR 47 Part 15
ICES-003, Issue 7

(et) Raadiospektri / (hr) Radio spektar / (lv) Radiofrekvenču spektrs / (is) Tíðniróf

EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 687 V1.1.1
EN 301 908-1 V15.2.1
EN 301 908-2 V13.1.1
EN 301 908-13 V13.2.1
EN 303 413 V1.2.1
EN 300 330 V2.1.1

(et) ökodisaini / (hr) Ekološki dizajn / (lv) ekodizains / (is) visthönnun

Regulation (EU) 2023/826
EN 50564:2011
IEC 62301:2011

RoHS

EN IEC 63000:2018

(et) Käesoleva toode vastab järgmiste nõuetele ja see kannab vastavalt CE märke (hr) Proizvod u skladu s zahtjevima sljedećeg i u skladu s tim nosi CE označavanje (lv) Ar šo produkts atbilst šādām prasībām un attiecīgi nes CE marķēšanu (is) Varan er hér með í samræmi við kröfur eftirfarandi og ber CE með sér í samræmi við það	**Radio Equipment Directive 2014/53/EU** **Ecodesign Directive 2009/125/EU** **RoHS Directive 2011/65/EU** **Battery Regulation 2023/1542**

(et) VASTAVUSDEKLARATSIOON / (hr) IZJAVA O SUKLADNOSTI / (lv) ATBILSTĪBAS DEKLARĀCIJA / (is) LEYFISYFIRLÝSING

DoC #: HSN-Q39C-4- R3

UK ONLY: This product herewith complies with the requirements of the following and carries the UKCA marking.	**Radio Equipment Regulations 2017** **Ecodesign for Energy-Related Products Regulations 2010** **Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012**

(et) Lisainfo
(hr) Dodatne informacije
(lv) Papildus informācija
(is) Viðbótarupplýsingar

5.1)
(et) See toode on määratud normatiivne mudelinumber mis jääb regulatiivsed aspektid disain. Normatiivne mudelinumber on peamine toode tunnuse reguleerivad dokumendid ja katseprotokollid, see number ei tohiks segamini ajada toote nime või toode numbrid.
(hr) Ovaj proizvod je dodijeljen broj modela prema propisima koji ostaje s regulatornim aspektima Dizajn. Broj modela prema propisima je glavni identifikator proizvod u regulatornom dokumentacije i izvješća o ispitivanju, ovaj broj ne treba brkati s marketinškim nazivom ili brojeve proizvoda.
(lv) Šis produkts ir piešķirts regulējošais modeļa numurs, kas paliek ar normatīvajiem aspektiem dizainu. Regulējošais modeļa numurs ir galvenais produkts identifikators pārvaldes dokumentācijā un testēšanas pārskati, šis skaits nedrīkst sajaukt ar mārketinga nosaukumu vai produktu numuriem.
(is) Þessi vara er úthlutað Regulatory tegundarnúmer sem dvelst hjá reglugerðum þætti í hönnun. The Regulatory Model Number er helsta vara auðkenni í reglugerðum skjöl og prófunarskýrslur, þetta númer ætti ekki að rugla saman við nafn markaðssetningu eða vörunúmerum.

5.2)
(et) See toode on testitud tüüpiliste HP keskkonnas koos HP vastuvõtva süsteemi.
(hr) Ovaj proizvod je ispitan u tipičnoj HP okoliš u suradnji s HP-host sustava.
(lv) Rinneadh tástáil ar táirge SEO i dtimpeallacht HP tipiciúil i gcomhar le CORAS óstach HP.
(is) Þessi vara var prófað í dæmigerðum HP umhverfi í tengslum við HP móti kerfinu.

(et) Loetletud teatatud organ andis III lisa kohaselt välja loetletud EL-tüüpi eksamitunnistuse, et saada punase direktiivi artikli 3.2 olulist nõuet. (hr) Navedeno je obaviješteno tijelo izdalo navedenu potvrdu o ispitivanju EU-a, prema Prilogu III, za bitni zahtjev članka 3.2. Red Direktive. (lv) Saskaņā ar III pielikumu norādītā paziņotā institūcija uzskaitītajā ES tipa eksāmena sertifikātā izdeva Sarkanās direktīvas 3.2. Pantā. (is) Hinn skráði tilkynnti aðili gaf út skráð prófskírteini ESB, samkvæmt viðauka III, vegna nauðsynlegrar kröfu 3.2. greinar rauðu tilskipunarinnar.	**Notified Body: SPORTON INTERNATIONAL (USA) INC** **Notified Body Number: 2907** **Certificate ID: SN24C0011**

Palo Alto, CA
30-04-2024

Gilles Soulard, Manager
Product Compliance Center

(et) Kohalik kontakt Ainult normatiivsete küsimuste korral
(hr) Lokalno kontakt za pravna pitanja samo
(lv) Vietējā kontaktpersona jautājumos par reglamentāciju tikai
(is) Upplýsingaskrifstofa fyrir reglusetningu efni eingöngu

EU: HP REG 23010, 08028 Barcelona, Spain
UK: HP Inc UK Ltd, Regulatory Enquiries, Earley West, 300 Thames Valley Park Drive, Reading, RG6 1PT
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501
Email: reg@hp.com www.hp.eu/certificates

(et) VASTAVUSDEKLARATSIOON / (hr) IZJAVA O SUKLADNOSTI / (lv) ATBILSTĪBAS DEKLARĀCIJA / (is) LEYFISYFIRLÝSING

DoC #: HSN-Q39C-4- R3

(et) I LISA (hr) PRILOG I (lv) I PIELIKUMS (is) VIÐAUKA I	
(et) Normatiivne mudelinumber (RMN) (hr) Broj modela prema propisima (RMN) (lv) Regulējošais modeļa numurs (RMN) (is) Regulatory Model Number (RMN)	**HSN-Q39C-4**
1 (et) KIRJELDUS | 2 (et) RMN VALIK* 1 (hr) OPIS | 2 (hr) RMN OPCIJA* 1 (lv) APRAKSTS | 2 (lv) RMN IZVĒLE* 1 (is) LÝSING | 2 (is) RMN VALKOSTUR*	

1	2
Power Adapter	TPN-XA07 TPN-XA15 TPN-XA19 TPN-XA20 TPN-XA21 TPN-XA23 TPN-XA01
Battery Pack	HSTNN-XB1G HSTNN-XB3Q HSTNN-XB3R HSTNN-XB0H TPN-XB1Y TPN-XB1Z TPN-XB1C
Transceiver 2,4 and 5/6 GHz WLAN and BT	MT7922A22M RTL8852CE
WWAN Transceiver, GPS Receiver	FM350-GL-16
NFC	XRAV-1

(et) VASTAVUSDEKLARATSIOON / (hr) IZJAVA O SUKLADNOSTI / (lv) ATBILSTĪBAS DEKLARĀCIJA / (is) LEYFISYFIRLÝSING

DoC #: HSN-Q39C-4- R3

(et) *Kui X on ükskõik tähtnumbriline märk
(hr) *Gdje X predstavlja nikakvu alfa numeričku karakter
(lv) *Kur X apzīmē jebkuru burtu ciparu raksturs
(is) *Þar sem X táknar allir alfa tölugildi karakter

(mt) DIKJARAZZJONI TA 'KONFORMITÀ / (tr) UYGUNLUK BEYANI / (sr) DEKLARACIJA O USAGLAŠENOSTI / (alb.sq) DEKLARATA E KONFORMITETIT

DoC #: HSN-Q39C-4- R3

(mt) Isem tal-manifattur (tr) Üretici Adı (sr) Naziv proizvođača (alb.sq) Emri e prodhuesit	**HP Inc.**
(mt) Indirizz tal-manifattur (tr) Üretici Adresi (sr) Adresa proizvođača (alb.sq) Adresa e prodhuesit	**1501 Page Mill Road, Palo Alto, CA 94303-1112 USA**
(mt) jiddikjara, li l-prodott (tr) beyan eder, ürün (sr) izjavljuju pod isključivom odgovornošću da je proizvod (alb.sq) deklarojnë, nën përgjegjësinë e vetme që produkti	
(mt) Isem tal-prodott u Mudell[5.2] (tr) Ürün Adı ve Modeli[5.2] (sr) Naziv proizvoda i model[5.2] (alb.sq) Emri dhe modeli i produktit[5.2]	**HP ProBook 445 14 inch G11 Notebook PC; HP ProBook 445 14 inch G11 series;HP Elite mt645 G8 Mobile Thin Client; HP Elite mt645 G8 series; HP EliteBook 645 14 inch G11 Notebook PC; HP EliteBook 645 14 inch G11 series**
(mt) Mudell regolatorju Numru[5.1] (tr) Yasal Model Numarası[5.1] (sr) Broj regulatornog modela[5.1] (alb.sq) Numri i Modelit Rregullator[5.1]	**HSN-Q39C-4**
(mt) Għażliet tal-prodott (tr) Ürün Opsiyonları (sr) Opcije (alb.sq) Opsionet e produktit	**(mt) Ara l-Anness I** **(tr) Bkz: Ek I** **(sr) Vidi PRILOG I** **(alb.sq) Shih aneksin I**

(mt) jikkonforma mal-Prodott Speċifikazzjonijiet li ġejjin u Regolamenti:
(tr) aşağıdaki Ürün spesifikasyonlarına ve Yönetmeliklere uygun olduğunu beyan eder
(sr) u skladu sa sledećim specifikacijama proizvoda i propisima
(alb.sq) përputhet me specifikimet dhe rregulloret e mëposhtme të produktit

(mt) Sigurtà / (tr) Güvenlik / (sr) Sigurnost / (alb.sq) Sigurinë e produktit
IEC 62368-1:2018
EN IEC 62368-1:2020 +A11:2020
EN IEC 62311:2020
EN 50665:2017
EN 62479:2010
EN 50663:2017
EN 50364:2018

(mt) EMC / (tr) EMC / (sr) EMK / (alb.sq) Përputhshmëria elektromagnetike
EN 55032:2015+A11:2020
EN 55035:2017+A11:2020
EN 61000-3-2:2014
EN 61000-3-3:2013 +A1:2019
EN 301 489-1 V2.2.3
EN 301 489-3 V2.3.2
EN 301 489-17 V3.2.4
EN 301 489-19 V2.2.1
EN 301 489-52 V1.2.1
EN 60601-1-2:2015+ AMD1:2021
FCC CFR 47 Part 15
ICES-003, Issue 7

(mt) Ispettru tar-radju / (tr) Spektrum / (sr) Radiofrekvencijski spektar / (alb.sq) Spektri i radio
EN 300 328 V2.2.2
EN 301 893 V2.1.1
EN 300 440 V2.1.1
EN 303 687 V1.1.1
EN 301 908-1 V15.2.1
EN 301 908-2 V13.1.1
EN 301 908-13 V13.2.1
EN 303 413 V1.2.1
EN 300 330 V2.1.1

(mt) Ekodisinn / (tr) Ekotasarım / (sr) Ekodizajn / (alb.sq) Ekodizajni
Regulation (EU) 2023/826
EN 50564:2011
IEC 62301:2011

RoHS
EN IEC 63000:2018

(mt) Il-prodott hawnhekk jikkonforma mar-rekwiżiti ta 'dawn li ġejjin u jġorr il-marka CE kif xieraq (tr) Ürün, aşağıdakilerin gereksinimlerine uygundur ve CE işaretlemeyi buna göre taşır (sr) Proizvod je u skladu sa sledećim zahtevima i prema tome nosi oznaku CE. (alb.sq) Produkti këtu përputhet me kërkesat e mëposhtme dhe mbart CE-duke shënuar në përputhje me rrethanat	**Radio Equipment Directive 2014/53/EU** **Ecodesign Directive 2009/125/EU** **RoHS Directive 2011/65/EU** **Battery Regulation 2023/1542**

(mt) DIKJARAZZJONI TA 'KONFORMITÀ / (tr) UYGUNLUK BEYANI / (sr) DEKLARACIJA O USAGLAŠENOSTI / (alb.sq) DEKLARATA E KONFORMITETIT

DoC #: HSN-Q39C-4- R3

UK ONLY: This product herewith complies with the requirements of the following and carries the UKCA marking.	**Radio Equipment Regulations 2017** **Ecodesign for Energy-Related Products Regulations 2010** **Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012**

(mt) Informazzjoni addizzjonali
(tr) Ek Bilgiler
(sr) Dopunske Informacije
(alb.sq) Informacion shtese

5.1)
(mt) Dan il-prodott huwa assenjat għal mudell regolatorju Numru li jibqa 'mal-aspetti regolatorji ta' l- disinn. Il-Numru tal-Mudell regolatorja hija l-identifikatur tal-prodott ewlieni fid-dokumentazzjoni regolatorju u rapporti tat-test, dan in-numru ma għandux jiġi mfixkel ma 'isem marketing jew in-numri tal-prodott.
(tr) Bu ürüne tasarım sırasında, teknik mevzutlar gözetilerek bir Yasal Model Numarası atanmıştır. Yasal Model Numarası, ana ürün için düzenleyici belgelerinde ve test raporlaronda tanımlayıcıdır. Bu numara pazarlama adı veya ürün numaraları ile karıştırılmamalıdır.
(sr) Ovom proizvodu je dodeljen regulatorni broj modela koji ostaje u skladu sa regulatornim aspektima dizajna. Regulatorni broj modela je glavni identifikator proizvoda u regulatornoj dokumentaciji i izveštajima o ispitivanju, ovaj broj ne treba mešati sa marketinškim nazivom ili brojevima proizvoda.
(alb.sq) Këtij produkti i është caktuar një Numër Modeli Rregullator i cili qëndron me aspektet rregullatore të modelit. Numri i Modelit Rregullator është identifikuesi kryesor i produktit në dokumentacionin rregullator dhe raportet e provave, ky numër nuk duhet të ngatërrohet me emrin e marketingut ose numrat e produkteve.

5.2)
(mt) Dan il-prodott ġie ttestjata f'ambjent HP tipiku flimkien ma 'sistema ospitanti HP.
(tr) Bu ürün, tipik bir HP ortamında test edilmiştir.
(sr) Ovaj proizvod je testiran u tipičnom HP okruženju.
(alb.sq) Ky produkt u testua në një mjedis tipik HP.

(mt) Il-korp notifikat elenkat ħareġ iċ-ċertifikat ta 'eżami tat-tip Eu elenkat, skond l-Anness III, għar-rekwiżit essenzjali tal-Artikolu 3.2 tad-Direttiva l-Ħamra. (tr) Listelenen Beden, Kırmızı Direktifin 3.2. Maddesinin temel gereksinimi için listelenen AB tipi sınav sertifikasını yayınladı. (sr) Navedeno imenovano telo izvršilo je ocenjivanje i izdalo navedenu potvrdu o ispitivanju prema Prilogu III, za bitne zahteve člana 3.2 RED Direktive. (alb.sq) Trupi i njoftuar i listuar lëshoi certifikatën e listuar të provimit të tipit BE, sipas Shtojcës III, për kërkesën thelbësore të nenit 3.2 të Direktivës së Kuqe.	**Notified Body: SPORTON INTERNATIONAL (USA) INC** **Notified Body Number: 2907** **Certificate ID: SN24C0011**

Palo Alto, CA
30-04-2024

Gilles Soulard, Manager
Product Compliance Center

(mt) Kuntatt lokali għal suġġetti regolatorji biss
(tr) Sadece teknik yasal konular için kontak
(sr) Lokalni kontakt samo za regulatorne teme
(alb.sq) Kontakt lokal vetëm për tema rregullatore

EU: HP REG 23010, 08028 Barcelona, Spain
UK: HP Inc UK Ltd, Regulatory Enquiries, Earley West, 300 Thames Valley Park Drive, Reading, RG6 1PT
U.S.: HP Inc., 1501 Page Mill Road, Palo Alto 94304, U.S.A. 650-857-1501
Email: reg@hp.com www.hp.eu/certificates

(mt) DIKJARAZZJONI TA 'KONFORMITÀ / (tr) UYGUNLUK BEYANI / (sr) DEKLARACIJA O USAGLAŠENOSTI / (alb.sq) DEKLARATA E KONFORMITETIT

DoC #: HSN-Q39C-4- R3

(mt) ANNESS I **(tr) EK I** **(sr) PRILOG I** **(alb.sq) ANEKSI I**	
(mt) Mudell regolatorju Numru (RMN) (tr) Yasal Model Numarası (RMN) (sr) Broj regulatornog modela (RMN) (alb.sq) Numri i Modelit Rregullator (RMN)	**HSN-Q39C-4**
1 (mt) DESKRIZZJONI | 2 (mt) RMN GĦAŻLA* 1 (tr) AÇIKLAMA | 2 (tr) RMN OPSİYON* 1 (sr) OPIS | 2 (sr) RMN OPCIJE* 1 (alb.sq) PËRSHKRIM | 2 (alb.sq) OPSIONI RMN*	

1	2
Power Adapter	TPN-XA07 TPN-XA15 TPN-XA19 TPN-XA20 TPN-XA21 TPN-XA23 TPN-XA01
Battery Pack	HSTNN-XB1G HSTNN-XB3Q HSTNN-XB3R HSTNN-XB0H TPN-XB1Y TPN-XB1Z TPN-XB1C
Transceiver 2,4 and 5/6 GHz WLAN and BT	MT7922A22M RTL8852CE
WWAN Transceiver, GPS Receiver	FM350-GL-16
NFC	XRAV-1

(mt) DIKJARAZZJONI TA 'KONFORMITÀ / (tr) UYGUNLUK BEYANI / (sr) DEKLARACIJA O USAGLAŠENOSTI / (alb.sq) DEKLARATA E KONFORMITETIT

DoC #: HSN-Q39C-4- R3

(mt) *Fejn X jirrappreżenta xi karattru numeriku alpha
(tr) *X herhangi bir alfabetik sayısal karakteri gösterir
(sr) *Gde X predstavlja bilo koji alfanumerički znak
(alb.sq) *Ku X paraqet ndonjë karakter alfa numerik

Data sheet

HP 125 Wired Mouse



Every Day Productivity

Think how much you use your mouse. That's why we've taken the time to design a wired mouse that is comfortable to use so you can work productively every day - and all day if necessary.

Designed for Comfort
The HP 125 Wired Mouse includes perfectly positioned left and right buttons and a scroll wheel so you can work in comfort all day.

Plug and Play Connectivity
Connecting some peripheral devices can be a complex and time consuming task.
Who needs that? With easy plug and play USB connectivity, you can get your mouse connected quickly so you can get on with your work day.

Responsibly Made
You should feel good about the products you buy and use. Rest assured, this wired mouse is responsibly made with printed circuit boards that is low halogen[1].

Easy Cleaning
Use your keyboard every day and it will accumulate dirt and grime. Over time, this can affect how it performs. Because it was specifically designed to withstand every day cleaning with disinfecting wipes[2], this is one keyboard that's a snap to keep clean.

1. External power supplies, power cords, cables and peripherals are not Low Halogen. Service parts obtained after purchase may not be Low Halogen.
2. Select household wipes can be safely used to clean HP Elite Presenter Mouse, HP Premium keyboard (wireless and USB) and HP desktop wired 320 KB/Mouse up to 1,000 wipes: See wipe manufacturer's instructions for disinfecting and the HP cleaning guide for HP tested wipe solutions at How to Sanitize Your HP Device Whitepaper.

Specifications



HP 125 Wired Mouse

Part number	265A9AA/ET/UT
Dimensions (L x W x H)	4.41 x 2.48 x1.42 inch (112 x 63 x 36 mm)
Weight	2.83 oz (80.5 g ±5 g)
Dots per inch (DPI)	1200 DPI
Tracking type	Optical Red Sensor[1]
Connectivity	USB
Cable length	1800 mm
System requirements	Windows 10 (64 bit and 32 bit) (UWP) RS4 and above
Approvals	FCC ICES CULus CE GS EAC Ukraine India BIS KCC RCM BSMI VCCI
Sustainability	Low halogen PCBA.
What´s in the box	Mouse, QSP, Warranty Card, Product Notice
Warranty	One-year limited warranty
Country of origin	China

1. Surface Coverage recommendation for Optical Red Sensor: Difuse surface: wooden board, cloth mouse pad.

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4AA7-9520ENW, February 2021

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laptops › EliteBook 640 14 inch G11 Notebook PC ›

EliteBook 640 14 inch G11 Notebook PC (Intel Core Ultra 5 135U)

HP EliteBook 640 14 inch G11 Notebook PC (Intel Core Ultra 5 135U)

Notebook system certified with Ubuntu

Ubuntu 22.04 LTS

Pre-installed in some regions with a custom Ubuntu image that takes advantage of the system's hardware features and may include additional software. Standard images of Ubuntu may not work well, or at all.

This system requires all available updates to be applied in order to work properly.

Kernel	6.5.0-1018-oem
BIOS	HP: W74 Ver. 01.01.03 (UEFI)

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Hardware

Processor	• Intel Corp. Intel(R) CoreTM Ultra 5 135U
Network	• Intel Corp. 8086:550a pci (8086:550a 103c:8c86)
Video	• Intel Corp. Meteor Lake-P [Intel Graphics] pci (8086:7d45 103c:8c86)
Wireless	• Intel Corp. Meteor Lake PCH CNVi WiFi pci (8086:7e40 8086:0090)

All hardware details ›

2 more certified configurations in the EliteBook 640 14 inch G11 Notebook PC platform ›

Issues? Let us know

If there is an issue with the information for this system, **please let us know <https://answers.launchpad.net/ubuntu-certification/+addquestion?field.title=Feedback on the HP EliteBook 640 14 inch G11 Notebook PC (Intel Core Ultra 5 135U) (202402-33498)>** .

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Certificado de Conformidade

Certificate of Conformity

Certificado/Certificate
UL-BR 23.1286

Revisão/Review
08

Emissão/Issue
28 de julho de 2023
July 28, 2023

Validade/Expiration
27 de julho de 2026
July 27, 2026

Reconhecer que o Solicitante/Acknowledge that the Certificate Holder

**HP BRASIL INDÚSTRIA E COMÉRCIO DE EQUIPAMENTOS ELETRÔNICOS LTDA.
ALAMEDA XINGU, 350, ANDAR 8 CONJ. 801 – ALPHAVILLE, BARUERI, SP. CEP: 06455-030
CNPJ: 22.086.683/0001-84**

avaliou o produto/has had

COMPUTADOR PORTÁTIL / *NOTEBOOK*

ao qual atende aos requisitos do Programa de Certificação ou Portaria/ evaluated and meets the requirements of the Certification Program or Decree

PORTARIA NO. 304/2023 / *DECREE NO. 304/2023*

e pode ostentar o Selo de Identificação da Conformidade do Sistema Brasileiro de Avaliação da Conformidade (SBAC) sobre o(s) produto(s) relacionado(s) neste certificado./
and can display the Conformity Identification Seal of the Brazilian Conformity Assessment System (SBAC) on the product(s) listed in this certificate.

ABNT NBR ISO/IEC 17065
OCP 0029

UL BR

Rafael Parada
Program Owner

UL do Brasil Certificações, organismo acreditado pela Coordenação Geral de Acreditação do INMETRO – CGCRE, segundo o registro Nº OCP-0029./
UL do Brasil Certificações, Certification Body accredited by Coordenação Geral de Acreditação do INMETRO - CGCRE according to the register Nr OCP-0029.

Certificado de conformidade válido somente acompanhado das páginas de 1 a 142
Certificate of Conformity valid only if accompanied from pages 1 to 142

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Certificado de Conformidade

Certificate of Conformity

Certificado/Certificate: **UL-BR 23.1286**

Emissão/Issue	**Revisão/**Review: **08**	**Validade/Expiration**
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Solicitante/Certificate holder **(100039-522)**	**HP BRASIL INDÚSTRIA E COMÉRCIO DE EQUIPAMENTOS ELETRÔNICOS LTDA.** ALAMEDA XINGU, 350, ANDAR 8 CONJ. 801 – ALPHAVILLE, BARUERI, SP. CEP: 06455-030 CNPJ: 22.086.683/0001-84
Fabricante/Manufacturer **(100500-147)**	**FLEXTRONICS INTERNATIONAL TECNOLOGIA LTDA** AVENIDA LIBERDADE, 6315, 18087-170 – SOROCABA – SP – BRASIL CNPJ: 74.404.229/0001-28
Modelo de certificação/ Certification model	5
Norma(s) aplicável(is)/ Applicable standards	IEC 60950-1:2005 + A1:2009 + A2:2013; IEC 62368-1:2018, CISPR 22: 2006; CISPR 24: 2010; IEC 61000-3-2:2014; IEC 61000-3-3:2013; IEC 61000-4-2: 2009; IEC 61000-4-3: 2010; IEC 61000-4-4: 2004; IEC 61000-4-5: 2006; IEC 61000-4-6: 2009; IEC 61000-4-8: 2010; IEC 61000-4-11: 2004, CISPR 35:2017 + A11:2020, CISPR 32:2015 + A11:2020, IEC 62368-1:2018
Identificação UL/ UL identification	BR2357, Vol. 8, Sec. 33, 35, 36, 38, 39, 40, 41, 49, 51, 57, 58, 61, 62, 63, 64, 65, 66, 68, 69
Lote ou No. de série/ Lot or serial number	N/A

Identificação da família/modelo/lote de produto(s) certificado(s)/
Identification of the family/model/lot of certified product(s):

Marca / *Brand Name*	**Modelo /** *Model*	**Descrição /** *Description*
HP	HSN-I24C-4, HSN-I26C, HSN-Q21C, HSN-Q24C, HSN-I36C-4, HSN-Q28C-4, HSN-Q31C, HSN-Q28C, HSN I41C-4, TPN-I130, HSN-Q33C-4, HSN-Q32C-4, HSN-Q34C-4, HSN-I45C-4, HSN-Q36C, HSN-Q38C-4, HSN-Q39C-4	HP ProBook 640 G5, HP PROBOOK 640 G7, HP PROBOOK 440 G7 E HP PROBOOK 445 G7, HP PROBOOK 640 G8 NOTEBOOK PC, HP PROBOOK 640 G8X, HP PROBOOK 445 G8 NOTEBOOK PC, HP PROBOOK 445 G8X, HP ZHAN 66 PRO A 14 G4 NOTEBOOK PC, HP ZHAN 66 PRO A 14 G4X, HP PROBOOK 630 G8 NOTEBOOK PC, HP PROBOOK 630 G8X*, HP EliteBook 840 G6, HP EliteBook 840 G7, HP ELITEBOOK 840 G8 NOTEBOOK PC, HP ELITEBOOK 840 G8X*, HP ELITEBOOK 840 AERO G8 NOTEBOOK PC, HP ELITEBOOK 840 AERO G8X*, HP ZBOOK FIREFLY 14 G8 MOBILE WORKSTATION, HP ZBOOK FIREFLY 14 G8X*, HP 14 LAPTOP PC, HP LAPTOP, HP LAPTOP 14X, HP 14S LAPTOP PC, HP 240 G8 NOTEBOOK PC, HP 240 G8, HP 246 G8, HP ZHAN 66 PRO A 14 INCH G5 NOTEBOOK PC, HP ZHAN 66 PRO A 14 G5X*, HP PROBOOK 445 14 INCH G9 NOTEBOOK PC, HP PROBOOK 445 G9X*, HP ELITEBOOK 640 14 INCH G9 NOTEBOOK PC, HP ELITEBOOK 640 G9X*, HP ZHAN 66 Pro 14 inch G5 Notebook PC, HP ZHAN 66 Pro 14 G5X*, HP ProBook 440 14 inch G9 Notebook PC, HP ProBook 440 G9X*, HP Pro mt440 G3 Mobile Thin Client, HP Pro mt440 G3X*, HP ProBook 440 14 inch G10 Notebook PC, HP ProBook 440 G10X*, HP ZHAN 66 Pro A 14 inch G5 Notebook PC, HP ZHAN 66 Pro A 14 G5X*, HP ProBook 445 14 inch G9 Notebook PC, HP ProBook 445 G9X*, HP ProBook 445 14 inch G10 Notebook PC, HP ProBook 445

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		G10X*, HP EliteBook 840 14 inch G10 Notebook PC, HP EliteBook 840 G10X*, HP EliteBook 1040 14 inch G10 Notebook PC, HP EliteBook 1040 G10X*, HP ZBook Firefly 14 inch G10 Mobile Workstation PC, HP ZBook Firefly 14 inch G10X*, HP EliteBook 640 14 inch G9 Notebook PC, HP EliteBook 640 G9X*, HP EliteBook 640 14 inch G10 Notebook PC, HP EliteBook 640 G10X* , HP ZBook Power 15.6 inch G9 Mobile Workstation PC, HP ZBook Power 15.6 inch G9X*, HP ZBook Power 15.6 inch G10 Mobile Workstation PC, HP ZBook Power 15.6 inch G10X*, HP EliteBook 840 14 inch G9 Notebook PC, HP EliteBook 840 G9X* HP EliteBook 1040 14 inch G9 Notebook PC, HP EliteBook 1040 G9X*, HP ZBook Firefly 14 inch G9 Mobile Workstation PC, HP ZBook Firefly 14 inch G9X*, HP EliteBook 840 14 inch G10 Notebook PC, HP EliteBook 840 G10X*, HP EliteBook 1040 14 inch G10 Notebook PC, HP EliteBook 1040 G10X*, HP ZBook Firefly 14 inch G10 Mobile, Workstation PC HP ZBook Firefly 14 inch G10X*, HP EliteBook 840 14 inch G11 Notebook PC HP EliteBook 840 G11X*, HP ZBook Firefly 14 inch G11 Mobile Workstation PC HP ZBook Firefly 14 inch G11X*, HP ProBook 440 14 inch G11 Notebook PC, HP ProBook 440 14 inch G11X*, HP EliteBook 640 14 inch G11 Notebook PC, HP EliteBook 640 14 inch G11X*, HP ProBook 445 14 inch G11 Notebook PC, HP ProBook 445 14 inch G11X*, HP Elite mt645 G8 Mobile Thin Client, HP Elite mt645 G8X*, HP EliteBook 645 14 inch G11 Notebook PC HP EliteBook 645 14 inch G11X* *ONDE “X” PODE SER UM NÚMERO ENTRE 1 E 21, UMA LETRA, UM SIMBOLO OU EM BRANCO, POR QUESTÕES DE MARKETING

Informações de ensaios/Test information:

Laboratório de Ensaio / *Testing Laboratory*	**Relatório de Ensaio /** *Test Report*	**Data de Emissão /** *Issue Date*
TUV Rheinland Taiwan Ltd., Taichung Branch.	50213639 001	2019-01-19
CSA Group	CB 178672-70207082	2018-02-26
CSA Group	CB 178672-70207082-Amend1	2019-01-21
CSA Group	CB 178672-70207082-Amend2	2019-03-18
CSA Group	CB 178672-70207082-Amend4	2019-08-15
SGS Taiwan	T181126L04-E1	2019-01-03
SGS Taiwan	MH/2018/B0169	2018-12-14
FIT – Flextronics Instituto de Tecnologia	V20-039-SERV-01	2020-07-02
FIT – Flextronics Instituto de Tecnologia	V20-039-SERV-02	2020-07-02
FIT – Flextronics Instituto de Tecnologia	V20-039-SERV-03	2020-07-02
FIT – Flextronics Instituto de Tecnologia	V20-039-SERV-04	2020-07-02
TUV Rheinland Taiwan Ltd., Taichung Branch	50279910 001	2019-08-12
TUV Rheinland Taiwan Ltd., Taichung Branch	50279910 002	2019-09-17
TUV Rheinland Taiwan Ltd., Taichung Branch	50279910 003	2020-08-06
SGS Taiwan	T190617L02-E1	2020-07-25
FIT – Flextronics Instituto de Tecnologia	V20-039-SERV-05	2020-07-02
FIT – Flextronics Instituto de Tecnologia	V20-039-SERV-06	2020-07-02
CSA Group – Taiwan Standards Association	CB 173799-80023428	2020-02-10
CSA Group – Taiwan Standards Association	CB 173799-80023429	2020-02-10

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Certificado de Conformidade

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SGS Taiwan	MH/2019/B0098-01	2019-12-18
FIT – Flextronics Instituto de Tecnologia	V20-039-SERV-07	2020-09-25
FIT – Flextronics Instituto de Tecnologia	V20-039-SERV-08	2020-09-25
TUV Rheinland Taiwan Ltd., Taichung Branch	50340903 001	2020-02-18
SGS Taiwan	T200106L02-A-E1	2020-02-07
FIT – Flextronics Instituto de Tecnologia	V20-063-SERV-13	2021-02-19
FIT – Flextronics Instituto de Tecnologia	V20-063-SERV-14	2021-02-19
CSA Group - Taiwan	CB 173799-80042883	2020-06-22
SGS Taiwan	T200513L08-E1	2020-06-15
FIT – Flextronics Instituto de Tecnologia	V20-063-SERV-17	2021-06-18
FIT – Flextronics Instituto de Tecnologia	V20-063-SERV-18	2021-06-18
CSA Group - Taiwan	CB 173799-80058351	2020-11-04
CSA Group - Taiwan	CB 173799-80058351	2021-02-23
CSA Group - Taiwan	CB 173799-80058351	2021-05-13
SGS Taiwan	T200929L01-E1	2021-05-14
FIT – Flextronics Instituto de Tecnologia	V20-022-SERV-01	2021-08-23
FIT – Flextronics Instituto de Tecnologia	V20-022-SERV-02	2021-08-23
CSA Group - Taiwan	CB 173799-80042887	2020-06-22
SGS Taiwan	T200513L07-E1	2020-06-17
FIT – Flextronics Instituto de Tecnologia	V20-063-SERV-15	2021-08-25
FIT – Flextronics Instituto de Tecnologia	V20-063-SERV-16	2021-08-25
TUV Rheinland Taiwan Ltd., Taichung Branch	NN206YCU 002	2020-11-13
TUV Rheinland Taiwan Ltd., Taichung Branch	NN206YCU 001	2020-09-08
SGS Taiwan	T200803L02-A-E1	2020-09-09
FIT – Flextronics Instituto de Tecnologia	V20-063-SERV-15	2021-09-29
FIT – Flextronics Instituto de Tecnologia	V20-063-SERV-16	2021-09-29
Perfectilink International Corp.	CB0071912001A	2019-12-24
Perfectilink International Corp.	CB0072111045A	2021-12-13
Wendell Electrical Testing Lab.	WL-OFF-20K2704-A1	2020-12-29
Wendell Electrical Testing Lab.	WL-OFF-20K2704-A2	2021-03-02
SGS Taiwan	T210723L13-E	2021-12-28
FIT – Flextronics Instituto de Tecnologia	V22-008-SERV-05	2022-05-30
FIT – Flextronics Instituto de Tecnologia	V22-008-SERV-06	2022-05-30
CSA Group - Taiwan	CB 173799-80095768	2021-10-27
SGS Taiwan	TMWK2109000682KE	2021-10-28
FIT – Flextronics Instituto de Tecnologia	V22-008-SERV-03	2022-07-28
FIT – Flextronics Instituto de Tecnologia	V22-008-SERV-04	2022-07-27
CSA Group - Taiwan	CB173799-80088411	2021-10-18
CSA Group - Taiwan	CB173799-80118095	2022-03-17
CSA Group - Taiwan	CB173799-80125862	2022-05-09
SGS Taiwan	TMWK2205001601KE	2022-05-20
FIT – Flextronics Instituto de Tecnologia	V22-008-SERV-01	2022-09-09
FIT – Flextronics Instituto de Tecnologia	V22-008-SERV-02	2022-09-09
IBEC	R231247	2023-07-18
IBEC	R231248	2023-07-27
FIT – Flextronics Instituto de Tecnologia	V22-089-SERV-01_Rev.A	2023-06-01
CSA Group - Taiwan	173799-80088361	2021-10-18
CSA Group - Taiwan	173799-80088361(80118043)	2022-03-21
CSA Group - Taiwan	173799-80088361(80125849)	2022-05-09
SGS Taiwan	TMWK2211004482KE	2022-12-13
FIT – Flextronics Instituto de Tecnologia	V23-017-SERV-03_Rev-A	2023-07-28
CSA Group - Taiwan	CB 173799-80095768	2021-10-27

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Certificado de Conformidade

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Emissão/Issue	**Revisão/**Review: **08**	**Validade/Expiration**
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CSA Group - Taiwan	CB 173799-80095768 (80120031)	2022-04-26
CSA Group - Taiwan	CB 173799-80095768 (80127762)	2022-06-10
CSA Group - Taiwan	CB 173799-80095768(80135588)	2022-12-07
SGS Taiwan	TMWK2211004033KE	2022-12-01
FIT – Flextronics Instituto de Tecnologia	V23-017-SERV-02_Rev-A	2023-10-02
CSA Group - Taiwan	178672-80148241	2023-01-09
SGS Taiwan	TMWK2211004901KE	2023-01-07
FIT – Flextronics Instituto de Tecnologia	V23-017-SERV-04_Rev-A	2023-11-16
CSA Group - Taiwan	CB 173799-80135597	2023-01-03
SGS Taiwan	TMWK2211004514KE	2022-12-13
FIT – Flextronics Instituto de Tecnologia	V23-017-SERV-01_Rev-A	2023-12-15
CSA Group Testing & Certification Taiwan	173799-80095715	2021-11-03
CSA Group Testing & Certification Taiwan	173799-80095715(80152104)	2023-01-12
SGS Taiwan	TMWK2211004988KE	2023-06-01
FIT – Flextronics Instituto de Tecnologia	S24-124-SERV-01_Rev-A	2024-06-04
CSA Group Testing & Certification Taiwan	178672-80148239	2023-01-09
CSA Group Testing & Certification Taiwan	178672-80148239(80180985)	2023-10-19
CSA Group Testing & Certification Taiwan	178672-80148239(80193660)	2024-01-02
SGS Taiwan	TMWK2308003038KE	2023-12-18
FIT – Flextronics Instituto de Tecnologia	S24-120-SERV-01_Rev-A	2024-11-14
CSA Group Testing & Certification Taiwan	173799-80187851	2024-01-02
SGS Taiwan	TMWK2311000225P	2024-01-08
FIT – Flextronics Instituto de Tecnologia	S24-121-SERV-01	2024-11-18
CSA Group Testing & Certification Taiwan	CB 173799-80187806	2024-01-02
SGS Taiwan	TMWK2311000374P	2024-01-05
FIT – Flextronics Instituto de Tecnologia	S24-123-SERV-01	2024-11-18

Informações de auditoria/Audit information:

Local da Auditoria / *Audit Location*	**Data de Realização /** *Perform Date*
Tratamento de Reclamações *Complaint Handling*	2024-03-27
Fabricante *Manufacturer*	2024-03-27

Informações adicionais/Additional information:

CARACTERÍSTICAS NOMINAIS / RATINGS:
19.5 Vdc, 2.31A ou 3.33A / 20Vdc, 2.25A or 3.25A - 100-240V~, 50-60Hz, 2.3A / 1.1A
1) 19.5 Vdc, 2.31A or 15 Vdc, 3A / 2) 19.5 Vdc, 3.33A or 20 Vdc, 3.25A

Observações/Observations:

1. A validade deste Certificado de Conformidade está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações da UL do Brasil Certificações previstas no RAC específico. Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro./
   The validity of this Certificate of Conformity is linked to the performance of maintenance assessments and treatment of possible non-conformities in accordance with the guidelines of UL do Brasil Certifications provided for in the specific Conformity Assessment Regulation. To check the updated condition of regularity of this Certificate of Conformity, the Inmetro database of certified products and services must be consulted.

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Certificado de Conformidade

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2. Este certificado aplica-se aos equipamentos (produtos) idênticos ao protótipo avaliado e certificado, manufaturados na(s) unidade(s) fabril(is) mencionada (s) acima./
   This certificate applies to the products that are identical to the prototype investigated, certified and manufactured at the production site mentioned in this certificate.

3. Qualquer alteração no produto, incluindo a marcação, invalidará o presente certificado, salvo se o solicitante informar por escrito à UL do Brasil Certificações sobre esta modificação, a qual procederá à avaliação e decidirá quanto à continuidade da validade do certificado./
   Any non-authorized changes performed in the product, including marking, will invalidate this certificate. UL do Brasil Certificações must be notified about any desired change. This notification will be analyzed by UL do Brasil Certificações that will decide about certificate force.

4. Esta autorização está vinculada a um contrato e para o escopo acima citado./
   This license is related to a commercial proposal and to the scope above cited.

Histórico de revisões/Revisions history:

Revisão / *Review*	**Data /** *Date*	**Descrição da Revisão /** *Revision Description*
08	09 de Dezembro de 2024 / *December 09, 2024*	Inclusão do modelo HSN-Q39C-4 (Oaken14)/ *Model add HSN-Q39C-4 (Oaken14)*
07	29 de Novembro de 2024 / *November 29, 2024*	Inclusão do modelo HSN-Q38C-4 (Rex14)/ *Model add HSN-Q38C-4 (Rex14)*
06	27 de Novembro de 2024 / *November 27, 2024*	Inclusão do modelo HSN-I45C-4 (Baymax 14) / *Model add HSN-I45C-4 (Baymax 14)*
05	25 de Junho de 2024 / 25 *June, 2024*	Inclusão do modelo HSN-Q36C / *Model add HSN-Q36C*
04	18 de Janeiro de 2024 / *18 January, 2024*	Inclusão do modelo HSN-Q33C-4 / *Model add HSN-Q33C-4*
03	30 de Novembro de 2023 / *30 November, 2023*	Inclusão do modelo HSN-I45C-4 / *Model add HSN-I45C-4*
02	11 de Outubro de 2023 / *October 11, 2023*	Inclusão do modelo HSN-Q34C-4 / *Model add HSN-Q34C-4*
01	07 de Agosto de 2023 / *August 07, 2023*	Inclusão do modelo HSN-Q32C-4 / *Model add HSN-Q32C-4*
00	28 de Julho de 2023 / *July 28, 2023*	Emissão Inicial com recertificação UL-BR 20.1197 / *Initial issue*
A última revisão substitui e cancela as anteriores / *The last review replaces and cancels the previous ones*		

Certificado de Conformidade

Certificate of Conformity

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Revisão/Review: **08**

Validade/Expiration
27 de julho de 2026
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Anexo I/Attachment I:

LISTA DE COMPONENTES CRÍTICOS / *LIST OF CRITICAL COMPONENTS:*

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
Power Adapter (Optional) (Only for rated 19.5 Vdc, 2.31 A)	AcBel (hp)	TPN-AA05	I/P: 100-240Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A, Max. operating altitude: 5000 m	IEC60950-1: 2005+A1+A2, IEC 62368-1:2014 (SecondEdition),EN6 2368-1: 2014+A11, UL 62368-1, 2nd Edition, 2014-12-01,CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by TÜV Rh	TÜV, UL
	Chicony (hp)	TPN-CA14	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A, Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), EN 62368-1: 2014 +A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by TÜV Rh	TÜV, UL
	Delta (hp)	TPN-DA16	I/P:100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A. Max. operating altitude: 5000m.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+A12+ A2,IEC 62368-1:2014 (Second Edition), EN 62368-1: 2014+A11,UL 60950-1, 2nd Edition, 2014-10-14, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014- 12,CB test report issued by TÜV Rh	TÜV, UL

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	Lite-On (hp)	TPN-LA15	I/P:100-240 Vac, 1.1 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A, Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), EN 62368-1: 2014+A11,UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12,CB test report issued by UL	TÜV, UL
	Chicony (hp)	TPN-CA15	I/P:100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A, Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12,CB test report issued by TÜV Rh	UL
(only for rated 19.5 Vdc, 3.33 A)	Chicony (hp)	TPN-CA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A, Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 201 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, EN 62368-1:2014+A11, CB test report issued by TÜV Rh	TÜV, UL
	Lite-On (hp)	TPN-LA17	I/P:100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33 A, Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition),UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12,CB test report issued by UL	UL
	Acbel (hp)	TPN-AA06	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 (Second Edition), EN 62368-1: 2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12,CB test report issued by TÜV Rh	TÜV, UL

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	Chicony (hp)	TPN-CA16	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), EN 62368-1: 2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12,CB test report issued by TÜV Rh	TÜV, UL
	Delta (hp)	TPN-DA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006 +A11+A1+A12+A2, IEC 62368-1:2014 (Second Edition), EN 62368-1: 2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12,CB test report issued by TÜV Rh	TÜV, UL
	Lite-On (hp)	TPN-LA16	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A. Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), EN 62368-1: 2014+A11,UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12,CB test report issued by UL	TÜV, UL
	Delta (hp)	HSTNN-DA14	I/P: 100-240 Vac, 1.5 A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A; Max. operating altitude: 3048 m min.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+ A12+A2, UL 60950-1, 2nd Edition, 2011-12-19, CSA C22.2 No. 60950-1-07, 2nd Edtion, 2011-12, CB test report issued by Nemko	TÜV, UL

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(only for rated 19.5 Vdc, 2.31 A)	Interchangeable	Interchangeable	O/P: 19.5 Vdc, 2.31 A min., Tma: 35 °C min. Max. operating altitude: 3048 m min	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+ A12+A2, UL 60950-1, 2nd Edition,CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, IEC/EN 62368-1:2014, CB test report issued by National Certification Body	TÜV, S, VDE or other EU certification marks, UL recognized
(only for rated 19.5 Vdc, 3.33 A)	Interchangeable	Interchangeable	O/P: 19.5 Vdc, 3.33 A min., Tma: 35 °C min. Max. operating altitude: 3048 m min	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+ A11+A1+A12+A2, UL 60950-1, 2nd Edition, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition,IEC/EN62368-1:2014, CB test report issued by National Certification Body	TÜV, S, VDE or other EU certification marks, UL recognized
(only for rated 20 Vdc, 2.25 A)	Lite-On (hp)	TPN-LA06	I/P:100-240 Vac, 1.4 A, 50-60 Hz O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 10 Vdc, 3.75 A or 12 Vdc,3.75 A or 15 Vdc,3 A or 20 Vdc, 2.25 A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006 +A11+A1+A12+A2, UL 60950-1, 2nd Edition, 2014-10-14, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 UL 62368-1 2nd Ed. 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014- 12,CB test report issued by TÜV Rh	TÜV, UL
	Delta (hp)	TPN-DA07	I/P:100-240 Vac, 1.4 A, 50-60 Hz O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 10 Vdc, 3.75 A or 12 Vdc,3.75 A or 15 Vdc,3 A or 20 Vdc, 2.25 A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006 +A11+A1+ A12+A2, UL 60950-1, 2nd Edition, 2014-10-14, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 UL 62368-1 2nd Ed. 2014-12-01, CSA C22.2 No. 62368-1-14, CB test report issued by UL	TÜV, UL

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(only for rated 20 Vdc, 3.25 A)	Acbel (hp)	TPN-AA03	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 10 Vdc, 5 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A or 20 Vdc, 3.25 A. Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006 +A11+A1+A12+A2, IEC 62368-1:2014 (Second Edition), EN 62368-1: 2014, UL 60950-1, 2nd Edition, 2014-10-14, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition,2014-10 UL 62368-1 2nd Ed. 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12,CB test report issued by TÜV Rh	TÜV, UL/cUL
	Chicony (hp)	TPN-CA06	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 10 Vdc, 5 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A or 20 Vdc, 3.25 A. Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2,EN 60950-1: 2006 +A11+A1+A12+A2, IEC 62368-1: 2014 (Second Edition), EN 62368-1: 2014, UL 60950-1, 2nid Edition, 2014-10-14, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10, CB test report issued by TÜV Rh	TÜV, UL/cUL
(only for rated 20 Vdc, 2.25 A)	Interchangeable	Interchangeable	O/P: 20 Vdc, 2.25 A min., Tma: 35 °C min. Max. operating altitude: 3048 m min	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+ A11+A1+A12+A2, UL 60950-1, 2nd Edition, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, IEC/EN 62368-1:2014, CB test report issued by National Certification Body	TÜV, S, VDE or other EU certification marks, UL recognized
(only for rated 20 Vdc, 3.25 A)	Interchangeable	Interchangeable	O/P: 20 Vdc, 3.25 A min., Tma: 35 °C min. Max. operating altitude: 3048 m min	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006 +A11+A1+ A12+A2, UL 60950-1, 2nd Edition, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, IEC/EN 62368-1:2014, CB test report issued by National Certification Body	TÜV, S, VDE or other EU certification marks, UL recognized

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Enclosure (except for display rear and display bezel)	Covestro	FR3021 + (+ - Material designations may be followed by a six digit numerical code denoting color)	V-0 min., thickness 1.2 mm min., 60 °C	UL 94	UL
	Covestro	FR3021 GR + (+ - Material designations may be followed by a six digit numerical code denoting color)	V-0 min., thickness 1.5 mm min., 60 °C	UL 94	UL
	Covestro	FR3020 + (+ - Material designations may be followed by a six digit numerical code denoting color)	V-0 min., thickness 0.75 mm min., 80 °C	UL 94	UL
	Covestro	FR3040 + (+ - Material designations may be followed by a six digit numerical code denoting color)	V-0 min., thickness 0.75 mm min., 80 °C	UL 94	UL
	LG CHEM LTD	GN-5101RF(#) (#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, XR401B, LI912A, AF303G, AF303S,XR404TX R407D, XR407E)	V-0 min., thickness 0.75 mm min., 60 °C	UL 94	UL
	LG CHEM LTD	LUPOY GN-5151RF(#) (#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, XR401B, LI912A,AF303G,A F303SXR404T,XR 407DXR407E)	V-0 min., thickness 1.0 mm min., 60 °C	UL 94	UL

	LG CHEM LTD	LUPOY ER5151RF(#) (#) - May be followed by optional suffix letter from A-Z incl. except F, and except Grades HT700B,XR401B,LI 912A, AF303G, AF303S, XR404T, XR407D, XR407E)	V-0 min., thickness 1.0 mm min., 60 °C	UL 94	UL
	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-3745B(#) (#) - Suffix optional)	V-0 min., thickness 1.2 mm min., 60 °C	UL 94	UL
Enclosure (for display rear and display bezel)	Interchangeable	Interchangeable	HB or better.	UL 94	UL
RTC Battery (Lithium)	Interchangeable	CR2032	Abnormal charging current 10 mA Max.	UL 1642	UL
Battery Pack (Optional)	LG Chem (hp)	HSTNN-LB8F	11.4 Vdc, 48 Wh or 4212 mAh (Nom.) or 4000 mAh (Min.),3 cells, Tma: 45 °C	IEC 62368-1:2014 (Second Edition), IEC 62133(ed.2) UL 62368-1, 2nd Edition, 2014-12-01, UL 2054, UL 60950-1, 2nd Edition, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01, CB test report issued by UL	UL
	SAMSUNG SDI (hp)	HSTNN-UB7K	11.4 Vdc, 48 Wh, 3 cells, Tma: 45 °C / 60 °C (charge / discharge)	IEC 60950-1:2005 (Second Edition) + Am1:2009 + Am2:2013, IEC 62133:2012 (Second Edition), UL 2054, UL 60950-1, 2nd Edition, UL 62368-1,IEC 62368-1: 2014 (Second Edition), CB test report issued by DEKRA for IEC 62133 and IEC 60950-1, CB test report issued by UL for IEC62368-1	UL
	Simplo (hp)	HSTNN-IB8B	11.4 or 11.55 Vdc, 4212 mAh or 48 Wh, 3 cells,Tma: 45 °C	IEC 60950-1:2005 (Second Edition) + Am1:2009 + Am2:2013, IEC 62133 2nd (2012) & EN62133 (2013), IEC 62368-	UL

				1:2014 (Second Edition), UL 2054 Second Edition, UL 60950-1, 2nd Edition, UL 62368-1, 2nd Edition, CB test report issued by UL	
CPU Cooling Fan	Delta	NS75C22XXXX XXXXXXX (X=A-Z, 0-9, "-" or blank for marketing purpose only)	5 Vdc, 0.5 A, 4.9 CFM min.	IEC 60950-1: 2005 +A1+A2, EN 60950-1: 2006+A11+A1+ A12+A2, UL 507	TÜV, UL
	Forcecon	DF(X)551205ML 0T Series, where (X) may be B, C or S.	5 Vdc, 0.5 A, 4.2 CFM min.	EN 60950-1: 2006+A11+A1+ A12+A2, UL 507	TÜV, UL
	Sunonwealth	EG75050S1-C05Z (Z stands for 30 characters. Each character stands for one of the following signs : 0-9, A-Z, (,), ., /, - or blank for marking purpose only)	5 Vdc, 0.45 A, 3.7 CFM min.	EN 60950-1: 2006+A11+A1+ A12+A2, UL 507	TÜV, UL
	Polytronics	SMD1812P110T F/24	1.1 A, 24 Vdc	IEC 60730-1	TÜV, UL
LCD Panel	AUO	B140HANyyyy (y=0-9, A-Z, a-z, "." , "-" or blank)	14.0" TFT, LED backlight type.	--	--
	AUO	B140XTNyyyy (y=0-9, A-Z, a-z, "." , "-" or blank)	14.0" TFT, LED backlight type.	--	--
	LG	LP140WFA	14.0" TFT, LED backlight type.	--	--
	IVO	M140NVF7	14.0" TFT, LED backlight type.	--	--
	InnoLux	N140HCAyyyy (y=0-9, A-Z, a-z, "." , "-" or blank)	14.0" TFT, LED backlight type.	--	--
	InnoLux	N140BGAyyyy (y=0-9, A-Z, a-z, "." , "-" or blank)	14.0" TFT, LED backlight type.	--	--
	BOE	NT140WHMyyyy (y=0-9, A-Z, a-z, "." , "-" or blank)	14.0" TFT, LED backlight type.	--	--
	BOE	NV140FHMyyyy (y=0-9, A-Z, a-z, "." , "-" or blank)	14.0" TFT, LED backlight type.	--	--
	Interchangeable	Interchangeable	14.0" TFT, LED backlight type.	--	--

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Mesh (For bottom opening) Mylar (For docking notch)	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	VTM-0, min. 80 °C, min. 0.05 mm thick min.	UL 94	UL
Hard Disk Drive (2.5 inch) (One provided) (Optional)	Seagate	ST9 with additional suffixes	5 Vdc, max.1.5 A	IEC 60950-1: 2005+A1+A2, CB test report issued by UL	TÜV, S, VDE or other EU certification marks, UL recognized
	Interchangeable	Interchangeable	5 Vdc, max. 1.5 A	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006 +A11+A1+ A12+A2 UL 60950-1, CB test report issued by National Certification Body	--
SSD (Optional)	Interchangeable	Interchangeable	3.3 Vdc or 5 Vdc	--	--
Speakers (Optional)	Interchangeable	Interchangeable	Min. 4 K, max. 2.5 W, two provided	--	--
PCB	Interchangeable	Interchangeable	V-1min., 105 °C	UL 796	UL

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
- Power Adapter (Optional)	AcBel (hp)	TPN-AA05	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5Vdc, 2.31A, Max. operating altitude: 5000m.	IEC 60950-1: 2005+A1+A2, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12 IEC 62368-1: 2014 (Second Edition), EN 62368-1: 2014+A11	CB by TUV RH, UL/cUL
(Alternate)	Chicony (hp)	TPN-CA15	I/P:100-240 Vac, 1.4 A, 50-60 Hz O/P:19.5Vdc, 2.31A, Max. operating altitude: 5000 m.	IEC 60950-1: 2005+A1+A2,IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01,CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV RH, UL/cUL
(Alternate)	Chicony (hp)	TPN-CA14	I/P:100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5Vdc, 2.31A, Max. operating altitude: 5000m.	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01,CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12 EN 62368-1: 2014+A11	CB by TUV RH, UL/cUL

(Alternate)	Lite-On (hp)	TPN-LA15	I/P: 100-240 Vac, 1.1 A, 50-60 Hz O/P: 19.5Vdc, 2.31A, Max. operating altitude: 5000m.	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12- 01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12 EN 62368-1: 2014+A11	CB by TUV RH, UL/cUL
(Alternate)	Delta (hp)	TPN-DA16	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5Vdc, 2.31A, Max. operating altitude: 5000m.	IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12 UL 60950-1, 2nd Edition, 2014-10-14, CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10, EN 60950-1: 2006 +A11+A1+A12+A2, EN 62368-1: 2014+A11	CB by TUV RH, UL/cUL
(Alternate)	Delta (hp)	TPN-DA07	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 5Vdc, 3 A or 9 Vdc, 3 A or 10 Vdc, 3.75A or 12 Vdc,3.75 A or 15 Vdc,3A or 20 Vdc, 2.25 A, Max. operating altitude: 5000m.	IEC 60950-1: 2005+A1+A2, UL 60950-1, 2nd Edition, 2014-10 14,CAN/ CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 EN 60950-1:2006 +A11+A1+A12+A2, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14	CB by Demko, UL/cUL
(Alternate)	Lite-On (hp)	TPN-LA06	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 10 Vdc, 3.75 A or 12 Vdc,3.75 A or 15 Vdc, 3 A or 20 Vdc, 2.25 A, Max. operating altitude: 5000m.	IEC 60950-1: 2005+A1+A2,UL 60950-1, 2nd Edition, 2014-10-14,CAN/ CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01	CB by TUV RH, UL/cUL
(Alternate)	Chicony (hp)	TPN-CA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5Vdc, 3.33A, Max. operating altitude: 5000m.	IEC 60950-1: 2005+ A1+A2, IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01,CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, EN 62368-1:	CB by TUV RH, UL/cUL

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				2014+A11	
(Alternate)	Acbel (hp)	TPN-AA06	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5Vdc, 3.33A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, EN 62368-1: 2014+A11	CB by TÜV Rh, UL/cUL
(Alternate)	Chicony (hp)	TPN-CA16	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5Vdc, 3.33A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2,IEC 62368-1:2014 (Second Edition),UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, EN 62368-1: 2014+A11	CB by TÜV Rh, UL/cUL
(Alternate)	Delta (hp)	TPN-DA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5Vdc, 3.33A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition),UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, EN 60950-1:2006+A11+A1+A12+A2,EN 62368-1: 2014+A11	CB by TÜV Rh, UL/cUL
(Alternate)	Lite-On (hp)	TPN-LA16	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5Vdc, 3.33A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12 EN 62368-1:2014+A11	CB by Demko, UL/cUL

(Alternate)	Lite-On (hp)	TPN-LA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5Vdc, 3.33A, Max. operating altitude: 5000m.	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01,CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by Demko, UL/cUL
(Alternate)	AcBel (hp)	TPN-AA03	I/P: 100-240 Vac, 1.7 A, 50/60 Hz O/P: 5 Vdc, 3 A or 9Vdc, 3 A or 10 Vdc, 5 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A or 20 Vdc, 3.25 A. Max. operating altitude: 5000m	IEC 60950-1: 2005 +A1+A2, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12 UL 60950-1, 2nd Edition, 2014-10-14,CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10, EN 60950-1: 2006+A11+A1+A12+A2, EN 62368-1: 2014	CB by TUV RH, UL/cUL
(Alternate)	Chicony (hp)	TPN-CA06	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 10 Vdc, 5 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A or 20 Vdc, 3.25 A. Maxoperating altitude: 5000m.	IEC 60950-1: 2005 +A1+A2, UL 60950-1, 2nd Edition, 2014-10-14, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 EN 60950-1: 2006+A11+A1+A12+A2, IEC 62368-1:2014 (Second Edition)	CB by Demko, UL/cUL
(only for rated 19.5 Vdc, 2.31 or 3.33 A)	Delta (hp)	HSTNN-DA14	I/P: 100-240 Vac, 50-60 Hz, 1.5 A O/P: 19.5Vdc, 3.33A; 5Vdc,1.5A. Max. operating altitude: 5000 m or 3048 m	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+1+A12+A2, UL 60950-1, 2nd Edition, 2011-12- 19, CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12	CB by NEMKO, TÜV, UL/cUL
(only for rated 19.5 Vdc, 2.31 or 3.33 A)	Interchangeable	Interchangeable	O/P: 19.5 Vdc, 3.33 A min., Max. operating altitude: 3048 m min.	IEC 60950-1: 2005+A1+A2	CB (issued by NCB)
(only for rated 20 Vdc, 2.25 A)	Interchangeable	Interchangeable	O/P: 20 Vdc, 2.25 A min., Max. operating altitude: 3048 m min.	IEC 60950-1: 2005+A1+A2	CB (issued by NCB)

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(only for rated 20 Vdc, 2.25 or 3.25 A)	Interchangeable	Interchangeable	O/P: 20 Vdc, 3.25 A min., Max. operating altitude: 3048 m min.	IEC 60950-1: 2005+A1+A2	CB (issued by NCB)
- Battery Pack (Optional)	Dynapack (hp)	HSTNN-DB8J	11.55Vdc, 50Wh or 4330 mAh or 4113 mAh, 3 cells, Tma: 40 °C	IEC 62368-1:2014 (ed.2), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, IEC 62133: 2012 (ed.2) UL 2054	CB by UL, UL
(Alternate)	LG Chem (hp)	HSTNN-LB8G	11.55Vdc, 50Wh or 4330 mAh or 4113 mAh, 3 cells, Tma: 45 °C	IEC 62368-1:2014 (ed.2), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, IEC 62133: 2012 (ed.2), UL 60950-1 2nd , CAN/CSA-C22.2 No. 60950-1-07, UL 2054	CB by UL, UL
(Alternate)	Simplo (hp)	HSTNN-IB8C	11.55Vdc, 50Wh or 4330 mA, 3 cells, Tma: 45 °C	IEC 62368-1:2014 (ed.2), UL 62368-1, 2nd Edition, 2014-12-01, IEC 60950-1:2005+A1+A2, UL 60950-1, 2nd Edition, 2014-10-14, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 IEC 62133: 2012 (ed.2), UL 2054 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL, UL
(Alternate)	Samsung SDI Co Ltd (hp)	HSTNN-UB7S	11.55Vdc, 50Wh or 4113 mAh, 3 cells, Tma: 35 °C	IEC 62368-1:2014 (ed.2), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, IEC 62133: 2012 (ed.2), UL 60950-1 2nd , UL 2054 CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10	CB by UL, CB by DEKRA, UL
- Enclosure (for display bezel) (only for non-touch panel used)	Covestro	FR3040 + (+ - Material designations may be followed by a six digit numerical code denoting color)	V-1 min., Min. 0.6 mm, 80 °C	UL 94	UL

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(Alternate)	SABIC	CX7240 (GG) (GG) - Denotes a global grade formulation previously in File E161759. NOTE - Material designation may be followed by a colornomenclature consisting of either an alpha /numeric or numeric /alpha combination.	V-1 min., Min. 0.6 mm, 70 °C	UL 94	UL
- CPU Cooling Fan	Delta	NS85C10XXXX XXXXXXX(X=A-Z, 0-9, “- “ or blank for marketing purpose only)	5 Vdc, 0.5 A, 4.00 CFM min.	IEC 60950-1: 2005+A1+A2,EN60950-1: 2006+A11 +A1+A12+A2, UL507	TÜV, UL
(Alternate)	FCN	DF(X)481305M C0T (X may be B, C or S)	5 Vdc, 0.5 A, 4.80 CFM min.	EN60950-1: 2006+ A11+A1+A12+A2, IEC 60950-1, UL507	TÜV, UL
(Alternate)	Sunon	EG75050S1-CZ (Z stands for 30 characters. Each character stands for 0-9, A-Z, “(“, “)”, “.”,“/”, “-“ or blank for marketing purpose only)	5 Vdc, 0.45 A, 3.9 CFM min.	EN60950-1: 2006+A11+A1+A12+A2, IEC 60950-1, UL507	TÜV, UL
(Alternate)	Interchangeable	Interchangeable	5 Vdc, 0.5 A max, 3.9 CFM min.	IEC 60950-1: 2005+A1+A2,EN60950-1: 2006+A11+A1 +A12+A2, UL507	TÜV, UL
- LCD Panel	AUO	B140HAByyyy (y=0-9, A-Z, a-z,“-” or blank)	14” TFT, LED backlight type.	--	--
(Alternate)	AUO	B140HAKyyyy (y=0-9, A-Z, a-z,“-” or blank)	14” TFT, LED backlight type.	--	--
(Alternate)	AUO	B140HANyyyy (y=0-9, A-Z, a-z,“-” or blank)	14” TFT, LED backlight type.	--	--
(Alternate)	AUO	B140ZANyyyy (y=0-9, A-Z, a-z,“-” or blank)	14” TFT, LED backlight type.	--	--
(Alternate)	BOE	NV140FHMyyyy (y=0-9, A-Z, a-z,“-” or blank)	14” TFT, LED backlight type.	--	--
(Alternate)	BOE	NV140QUMyyyy (y=0-9, A-Z, a-z,“-” or blank)	14” TFT, LED backlight type.	--	--

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(Alternate)	InnoLux Corporation	N140HCAyyyy (y=0-9, A-Z, a-z,"-" or blank)	14" TFT, LED backlight type.	--	--
(Alternate)	InnoLux Corporation	N140HCRyyyy (y=0-9, A-Z, a-z,"-" or blank)	14" TFT, LED backlight type.	--	--
(Alternate)	IVO	M140NVFAyyy (y=0-9, A-Z, a-z, "." or blank)	14" TFT, LED backlight type.	--	--
(Alternate)	IVO	R140NVFAyyy (y=0-9, A-Z, a-z, "." or blank)	14" TFT, LED backlight type.	--	--
(Alternate)	LG	LP140WF8	14" TFT, LED backlight type.	--	--
(Alternate)	LG	LP140WFA	14" TFT, LED backlight type.	--	--
(Alternate)	Interchangeable	Interchangeable	14" TFT, LED backlight type.	--	--
- Solid-State Drive(optional)	Interchangeable	Interchangeable	3.3 Vdc	--	--
- RTC Battery (Lithium) (Optional)	Interchangeable	CR2032	Max. Abnormal Charging Current: 10 mA min.	UL 1642	UL
- Speaker (Optional)	Interchangeable	Interchangeable	3.85Ω min., 3 W max.	--	--
- PCB	Interchangeable	Interchangeable	V-1 or better, 105 °C	UL 796	UL

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
Adapter (for rating: 15Vdc, 3A)	AcBel (hp)	TPN-AA07	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by TUV
	Lite-On (hp)	TPN-LA19	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A altitude: 5000 m, Tma:35°C	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by TUV

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	Delta (hp)	TPN-DA15	I/P: 100-240 Vac, 1.4 A Max., 50-60 Hz O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A altitude: 5000 m, Tma:	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by TUV
	Chicony (hp)	TPN-CA20	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by TUV
	Interchangeable	Interchangeable	O/P: 15 Vdc, 3 A min. altitude: 3048 m min., Tma: 35°C min.	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014	CB (issued by National Certification Body)
Adapter (for rating: 19.5Vdc, 2.31A)	AcBel (hp)	TPN-AA05	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by TUV
	Chicony (hp)	TPN-CA14	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A, 45 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by TUV
	Chicony (hp)	TPN-CA15	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A, 45 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by TUV
	Lite-On (hp)	TPN-LA15	I/P: 100-240 Vac, 50-60 Hz, 1.1 A O/P: 19.5 Vdc, 2.31 A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by UL
	Delta (hp)	TPN-DA16	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by TUV

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	Interchangeable	Interchangeable	O/P: 19.5 Vdc, 2.31 A min. altitude: 3048 m min.	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB (issued by National Certification Body)
Adapter (for rating: 20Vdc, 3.25A)	AcBel (hp)	TPN-AA03	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 10V, 5A; 12V, 5A; 15V, 4.33A; 20V, 3.25A, 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2	CB by TUV
	Chicony (hp)	TPN-CA06	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: DC 5V, 3A; 9V, 3A; 10V, 5A; 12V, 5A; 15V, 4.33A; 20V, 3.25A, 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by TUV
	Interchangeable	Interchangeable	O/P: 20 Vdc, 3.25 A min. altitude: 3048 m min.	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014	CB (issued by National Certification Body)
Adapter (for rating: 19.5Vdc, 3.33A)	AcBel (hp)	TPN-AA06	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33 A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by TUV
	Chicony (hp)	TPN-CA16	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A, 65 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by TUV
	Chicony (hp)	TPN-CA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A, 65 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by TUV
	Lite-On (hp)	TPN-LA17	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33 A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by UL

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	Lite-On (hp)	TPN-LA16	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33 A altitude: 5000 m, Tma:35°C	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by UL
	Delta (hp)	TPN-DA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A altitude: 5000 m, Tma:35°C	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by TUV
	Interchangeable	Interchangeable	O/P: 19.5 Vdc, 3.33 A min. altitude: 3048 m min.	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB (issued by National Certification Body)
Battery pack (Li-ion type)	Samsung SDI	HSTNN-UB7R	11.55Vdc, 45Wh or 3750mAh	IEC 62133: 2012, IEC 62368-1: 2014	CB by DEKRA (IEC 62133) CB by UL (IEC 62368)
	Zhuhai CosMX	HSTNN-OB1C	11.55Vdc, Nom: 3900mAh 45Wh. Rated: 3750mA	IEC 62133: 2012, IEC 62368-1: 2014	CB by TUV (IEC62133) CB by UL (IEC 62368)
	Dynapack	HSTNN-DB9A	11.55 Vdc, 45 Wh or 3750mAh or 3900mAh	IEC 62133: 2012, IEC 62368-1: 2014	CB by UL
Panel	AUO	B140HAN04.0	14.0 inch TFT-LCD, LED backlight	--	--
	Interchangeable	Interchangeable	14.0 inch TFT-LCD, LED backlight	--	--
Metal Enclosure (except for bottom case and display bezel)	Interchangeable	Interchangeable	Metallic, 0.7 mm thickness min.	--	--
Plastic Enclosure (for bottom case)	LG CHEM LTD	LUPOY ER-2253F(#) (#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E.	V-0, min. thickness 0.8 mm, 80°C	UL 94	UL (E67171)
	TEIJINCHEMICALS PLASTIC COMPOUNDS	GXV-35(cc)U(#) (#) - Suffix optional (cc) - 10 through 30.	V-0, min. thickness 0.75 mm, 80°C	UL 94	UL (E244324)

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	SHANGHAI LTD				
Plastic Enclosure (for keyboard frame)	LG CHEM LTD	LUPOY GN-5151RF(#)(#)-may be followed by optional suffix letter from A-Z incl., except F, and except Grades AF302G,HT700B, XR401B,LI912A, AF303G,AF303S, XR404T,XR407D, XR407E, HF380X	V-0, min. thickness 1.0 mm, 60°C	UL 94	UL (E67171)
	TEIJINCHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-3715B(n1)(n1)-may be suffixed with nay letters except D and Z	V-0, min. thickness 1.0 mm, 60°C	UL 94	UL (E98529)
Plastic Enclosure (for display bezel)	LG CHEM LTD	GN-5101RF(#) (#)-May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, XR401B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E	V-0, min. thickness 0.75 mm, 60°C	UL 94	UL (E67171)
	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-3713B(#) (#) -Suffix optional	V-0, min. thickness 1.0 mm, 60°C	UL 94	UL (E98529)
	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-3713B(#) (#) -Suffix optional	V-0, min. thickness 1.0 m	UL 94	UL (E244324)
DC Fan (UMA SKU)	Delta	NS75C00- 18E05	5Vdc, 0.5A, 3.3CFM	--	Tested in appliance
	Suzhou Forcecon Electric Co., Ltd.	0FL8J0000H	5Vdc, 0.5A, 3.23CFM	--	Tested in appliance
	Interchangeable	Interchangeable	5Vdc, 0.5A max., 3.23CFM min.	IEC 60950-1	TÜV, S, VDE or other EU certification marks
DC Fan (DIS SKU)	Delta	ND75C23- 18E06	5Vdc, 0.5A, 3.35CFM	--	Tested in appliance
	Suzhou Forcecon Electric Co., Ltd.	0FL010000H	5Vdc, 0.5A, 3.9CFM	--	Tested in appliance

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	Interchangeable	Interchangeable	5Vdc, 0.5A max., 3.35CFM min.	IEC 60950-1	TÜV, S, VDE or other EU certification marks
Power distribution switch (for USB ports)	Global Mixed- mode Technology Inc. (GMT)	G517HX1X2X3 X4 (X1=1, 2, 3, or 4; X2=T1, TB, TO, TP or P8; X3=1, 2 or 3; X4=U or D)	Input Voltage: 2.7-5.5Vdc, Output Continuous Rating: 2.6 A Output Current Limit: 2.7-3.9 A	IEC 60950-1: 2005+A1+A2, UL 2367	CB by TUV, UL
	DIODES INC	AP22804AW5-7	Input Voltage: 2.5 to 5.5 Vdc, Output Continuous Rating: 2.5A, Output Current Limit: 3.3 A	IEC 60950-1: 2005+A1+A2	CB by UL, UL
	EXCELLIANCE MOS CORPORATION	EM5213AJ-25	Input Voltage: 2.5 to 5.5 Vdc, Output Continuous Rating: 2.5A, Output Current Limit:2.5A	IEC 60950-1: 2005+A1+A2, UL 2367	CB by UL, UL
Power distribution switch (for HDMI port)	DIODES INC	AP2331, followed by FJ, SA or W, may be followed by additional letters and/or numbers	Input Voltage: 2.7 to 5.5 Vdc, Output Continuous Rating: 0.2A, Output Current Limit: 0.5A	IEC 60950-1: 2005+A1+A2, UL 2367	CB by TUV RH, UL
	Global Mixed- mode Technology Inc.	G5250Q1T73U	Input Voltage: 2.7 to 5.5 Vdc, Output Continuous Rating: 0.2A Output Current Limit: 0.5A	IEC 60950-1: 2005+A1+A2, UL 2367	CB by TUV, UL
Type C current-limited power switch	NXP Semiconductor Taiwan Ltd.	NX5P3290AUK, NX5P3363UK	Input voltage: 4.0 Vdc - 5.5 Vdc Output current limit: 3.3 A	IEC 62368-1: 2014, UL 2367	CB by UL, UL
Speaker	Interchangeable	Interchangeable	4 +15% ohm, 2.5W max.	Applicable parts of IEC 60950-1	Tested in appliance
Hard Disc Drive (optional)	Western Digital Technologie, Inc.	WDUUUUZVTX -YYXXXYY, Where U can be any number or blank, "Z" can be any alpha character and where "V" and "T", "X" and "Y" can be any alphanumeric	5Vdc, 1.5A	IEC 60950-1:2005; am1:2009	TUV RORD; UL

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		character or blank			
	Interchangeable	Interchangeable	5Vdc, 1.5A max.	IEC 60950-1	TUV, UL, CB (issued by National Certification Body)
SSD (optional)	Lite-On Technology Corporation	CV1- 8Bxxxxxxxx, x can be any alphanumeric character or blank.	3.3Vdc, 5Vdc, optional	IEC 60950-1:2005+A1+A2	CB by TUV RH
	Interchangeable	Interchangeable	3.3Vdc, 5Vdc, optional	IEC 60950-1	TUV, UL, CB (issued by National Certification Body)

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
Adapter for rating 15Vdc, 3A (Optional)	AcBel (hp)	TPN-AA07	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V,3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014	CB by TUV
(Alternate)	Lite-On (hp)	TPN-LA19	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A Altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Delta (hp)	TPN-DA15	I/P: 100-240 Vac, 1.4 A Max., 50-60 Hz O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A Altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Chicony (hp)	TPN-CA20	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Interchangeable	Interchangeable	O/P: 15 Vdc, 3 A min. Altitude: 3048 m min., Tma: 35°C min.	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB (issued by National Certification Body)
Adapter for rating 19.5Vdc, 2.31A (Optional)	AcBel (hp)	TPN-AA05	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV

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(Alternate)	Chicony (hp)	TPN-CA14	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A, 45 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Chicony (hp)	TPN-CA15	I/P: 100-240 Vac,1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A, 45 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Lite-On (hp)	TPN-LA15	I/P: 100-240 Vac, 50-60 Hz, 1.1 A O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by UL
(Alternate)	Delta (hp)	TPN-DA16	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Interchangeable	Interchangeable	O/P: 19.5 Vdc, 2.31A min. altitude: 3048 m min., Tma: 35°C min.	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB (issued by National Certification Body)
Adapter for rating 20Vdc, 3.25A (Optional)	AcBel (hp)	TPN-AA03	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 10V, 5A; 12V, 5A; 15V, 4.33A; 20V, 3.25A, 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2	CB by TUV
(Alternate)	Chicony (hp)	TPN-CA06	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: DC 5V, 3A; 9V, 3A; 10V, 5A; 12V, 5A; 15V, 4.33A; 20V, 3.25A, 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Interchangeable	Interchangeable	O/P: 20Vdc, 3.25A min. altitude: 3048 m min., Tma: 35°C min.	IEC 60950-1: 2005+A1+A2| IEC 62368-1: 2014	CB (issued by National Certification Body)
Adapter for rating 19.5Vdc, 3.33A (Optional)	AcBel (hp)	TPN-AA06	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV

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(Alternate)	Chicony (hp)	TPN-CA16	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A, 65 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Chicony (hp)	TPN-CA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A, 65 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Lite-On (hp)	TPN-LA17	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P:19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by UL
(Alternate)	Lite-On (hp)	TPN-LA16	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by UL
(Alternate)	Delta (hp)	TPN-DA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Interchangeable	Interchangeable	O/P: 19.5Vdc, 3.33A min. altitude: 3048 m min., Tma: 35°C min.	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB (issued by National Certification Body)
Battery pack (Li-ion type)	Samsung SDI	HSTNN-UB7R	11.55Vdc, 45Wh or 3750mAh	IEC 62133: 2012 IEC 62368-1:2014 UL 62368-1, 2nd Edition,2014-12-01 CSA C22.2 No. 62368-1-14, 2nd	CB by DEKRA (IEC 62133) CB by UL (IEC 62368)
(Alternate)	Zhuhai CosMX	HSTNN-OB1C	11.55Vdc, Nom: 3900mAh 45Wh. Rated: 3750mA	IEC 62133: 2012 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd	CB by TUV (IEC 62133) CB by UL (IEC 62368)

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)

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Power Adapter (Optional) (Only for rated 19.5 Vdc, 2.31 A)	AcBel (hp)	TPN-AA05	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A, Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), EN 62368-1: 2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by TÜV Rh	TÜV, UL
	Chicony (hp)	TPN-CA14	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A, Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), EN 62368-1: 2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by TÜV Rh	TÜV, UL
	Delta (hp)	TPN-DA16	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A. Max. operating altitude: 5000 m.	IEC 60950-1:2005 +A1+A2, IEC 62368-1: 2014 (Second Edition), EN 62368-1: 2014+A11, UL 60950-1, 2nd Edition, 2014-10-14, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10, UL 62368-1, 2nd Edition, 2014- 12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by TÜV Rh	TÜV, UL
	Lite-On (hp)	TPN-LA15	I/P: 100-240 Vac, 1.1 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A, Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014 (Second Edition), EN 62368-1: 2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report	TÜV, UL

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				issued by UL	
	Chicony (hp)	TPN-CA15	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A, Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by TÜV Rh	UL
Power Adapter (Optional) (Only for rated 19.5 Vdc, 3.33 A)	Chicony (hp)	TPN-CA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A, Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, EN 62368-1: 2014+A11, CB test report issued by TÜV Rh	TÜV, UL
	Lite-On (hp)	TPN-LA17	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33 A, Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by UL	UL

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	Acbel (hp)	TPN-AA06	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 (Second Edition), EN 62368-1: 2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by TÜV Rh	TÜV, UL
	Chicony (hp)	TPN-CA16	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), EN 62368-1: 2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by TÜV Rh	TÜV, UL
	Delta (hp)	TPN-DA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+ A11+A1+A12+A2, IEC 62368-1: 2014 (Second Edition), EN 62368-1: 2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by TÜV Rh	TÜV, UL
	Lite-On (hp)	TPN-LA16	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A. Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014 (Second Edition), EN 62368-1: 2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-	TÜV, UL

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				12, CB test report issued by UL	
Power Adapter (Optional) (Only for rated 19.5 Vdc, 2.31 A)	Interchangeable	Interchangeable	O/P: 19.5 Vdc, 2.31 A min., Tma: 35 °C min. Max. operating altitude: 3048 m min	IEC 60950-1: 2005+A1+A2,EN 60950-1: 2006+A11 +A1+A12+A2, UL 60950-1, 2nd Edition, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, IEC/EN 62368-1:2014, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by National Certification Body	TÜV, S, VDE or other EU certification marks, UL recognized
Power Adapter (Optional) (Only for rated 19.5 Vdc, 3.33 A)	Interchangeable	Interchangeable	O/P: 19.5 Vdc, 3.33 A min., Tma: 35 °C min. Max. operating altitude: 3048 m min	IEC 60950-1:2005 +A1+A2, EN 60950-1:2006+A11+A1+ A12+A2, UL 60950-1, 2nd Edition, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, IEC/EN 62368-1: 2014, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by National Certification Body	TÜV, S, VDE or other EU certification marks, UL recognized

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Power Adapter (Optional) (Only for rated 20 Vdc, 3.25 A)	Chicony (hp)	TPN-CA21	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A Or 20 Vdc, 3.25 A. Max. operating altitude: 5000 m	IEC 60950-1:2005 +A1+A2, IEC 62368-1:2014 (Second Edition), EN 62368-1: 2014+A11, UL 62368-1 2nd Ed. 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by TÜV Rh	TÜV, UL
	Delta (hp)	TPN-DA20	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A Or 20 Vdc, 3.25 A. Max. operating altitude: 5000 m	IEC 60950-1:2005 +A1+A2, IEC 62368-1:2014 (Second Edition), EN 62368-1: 2014+A11, UL 62368-1 2nd Ed. 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by TÜV Rh	TÜV, UL
	HONOR (hp)	TPN-HA01	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A Or 20 Vdc, 3.25 A. Max. operating altitude: 5000 m	IEC 60950-1:2005 +A1+A2, IEC 62368-1: 2014 (Second Edition), UL 62368-1 2nd Ed. 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by UL	UL
	Astec (hp)	TPN-TA02	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A or 20 Vdc, 3.25 A. Max. operating altitude: 5000 m	IEC 60950-1: 2005 +A1+A2, IEC 62368-1:2014 (Second Edition), UL 62368-1 2nd Ed. 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by UL	UL

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	Chicony (hp)	TPN-CA10	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A Or 20 Vdc, 3.25 A. Max. operating altitude: 5000 m	IEC 60950-1: 2005 +A1+A2, IEC 62368-1:2014 (Second Edition), EN 62368-1: 2014+A11, UL 62368-1 2nd Ed. 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by TÜV Rh	TÜV, UL
	Lite-On (hp)	TPN-LA12	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A Or 20 Vdc, 3.25 A. Max. operating altitude: 5000 m	IEC 60950-1:2005 +A1+A2, IEC 62368-1: 2014 (Second Edition), EN 62368-1: 2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by UL	TÜV, UL
Power Adapter (Optional) (Only for rated 20 Vdc, 3.25 A)	Interchangeable	Interchangeable	O/P: 20 Vdc,3.25 A min., Tma: 35 °C min. Max. operating altitude: 3048 m min	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+ A12+A2, UL 60950-1, 2nd Edition, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, IEC/EN 62368-1:2014, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12, CB test report issued by National Certification Body	TÜV, S, VDE or other EU certification marks, UL recognized
Enclosure	Interchangeable	Interchangeable	Metallic type, min. thickness 0.6 mm	--	--
Enclosure (for display bezel and camera shutter)	Interchangeable	Interchangeable	HB or better.	UL 94	UL
Rubber stand on bottom side	Interchangeable	Interchangeable	V-1 or better.	UL 94	UL
RTC Battery (Lithium)	Interchangeable	CR1620	Abnormal charging current 10 mA Max.	UL 1642	UL

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Battery Pack (Optional)	Dynapack (hp)	HSTNN-DB9Q	11.55 Vdc, 53 Wh or 4590 mAh or 4400 mAh	IEC 62368-1:2014 (Second Edition), IEC 62133:2012,IEC 62133:2017, UL 62368-1, 2nd Edition, 2014-12-01, UL 2054, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01, CB test report issued by UL	UL
	LG Chem (hp)	HSTNN-LB8Q	11.55 Vdc, 53 Wh	IEC 62368-1:2014 (Second Edition), IEC 62133(ed.2), UL 62368-1, 2nd Edition, 2014- 12-01, UL 2054, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014- 12-01, CB test report issued by UL	UL
	Simplo (hp)	HSTNN-IB9F	11.55 Vdc, 53 Wh or 4590 mAh or 4400 mAh	IEC 62368-1:2014 (Second Edition), IEC 62133 (ed.2), UL 62368-1, 2nd Edition, 2014-12-01, UL 2054, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014- 12-01, IEC 60950-1: 2005 +A1+A2, CB test report issued by UL	UL
CPU Cooling Fan (for UMA main board)	Delta	For TÜV ND75C38XXXX XXXXXXX (X stands for A-Z, 0-9, “-“ or blank for marketing purpose only) For UL: ND75C38(Y11) The content in "( )" is optional. The number after Y represents digits, each digit may be A through Z, 0 through 9, "-" or blank. And the Y is only for locating the number, shall not show in the model name.	5 Vdc, 0.5 A, 3.0 CFM min.	IEC 62368-1: 2014, EN 62368-1: 2014, UL 507	TÜV, UL
	Forcecon	For TÜV: DF(X)5K123043 63(Y) (where (X) stands for B, C or S ; (Y) stands for 0-9, A-Z, "-", or blank) For	5 Vdc, 0.5 A, 3.4 CFM min.	EN 62368-1: 2014, UL 507	TÜV, UL

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		UL: DF(X)5K123043 63(Y) The number where (X) may be S, B or C; (Y) may be =" ", " - " , 0~9 , A~Z.			
	Sunonwealth	For TÜV: EG50040S1- 1C19Z (Z stands for 30 characters. Each character stands for 0-9, A-Z, "(", ")", ".", "/", "-" or blank for marketing purpose only) For UL: EG50040S1-1C19(Y) where (Y) stands for 30 variables, each variable may be A through Z, 0 through 9, "-", "(", ")", ".", "/" or blank.	5 Vdc, 0.45 A, 2.9 CFM min.	EN 60950-1: 2006+A11+A1+ A12+A2, EN 62368-1: 2014, UL 507	TÜV, UL
	Interchangeable	Interchangeable	5 Vdc, 0.5 A max., 2.9 CFM min.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11 +A1+ A12+A2, UL 507	TÜV, UL
CPU Cooling Fan (for DIS main board)	Delta	For TÜV: ND75C40XXXX XXXXXXX (X stands for A-Z, 0-9, “-“ or blank for marketing purpose only) For UL: ND75C40(Y11) The content in "( )" is optional. The number after Y represents digits, each digit may be A through Z, 0 through 9, "-" or blank. And the Y is only for locating the number, shall not show in the model name.	5 Vdc, 0.5 A, 3.9 CFM min.	IEC 62368-1:2014, EN 62368-1: 2014, UL 507	TÜV, UL
	Interchangeable	Interchangeable	5 Vdc, 0.5 A max., 3.9 CFM min.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11 +A1+ A12+A2, UL 507	TÜV, UL
Power Distribution Switch (U2500, U3150) (for UMA main board)	Global Mixed- mode Technology Inc. (GMT)	For CB: G524BX1X2X3X 4 (X1=1, 2, 3 or 4 ; X2=TP, P8, F5 or T1 ; X3=1 ; X4=U) For UL: G524B, followed by 1, 2, 3, or 4, followed by T1, TP, P8, or F5,	Input voltage: 2.7 Vdc to 5.5 Vdc, Output Current Limit: 2.2 A to 2.8 A	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by TÜV	UL

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		followed by 1, followed by U			
	ANPEC ELECTRONICS CORP	For CB: APL3553 followed by A, B, E or F, followed by B, C or X, followed by I, followed by -, followed by TR, followed by G For UL: APL3553 Series followed by A, B, E or F, followed by B, C or X, followed by I, followed by -, followed by TR, followed by G	Input voltage: 2.7 Vdc to 5.5 Vdc, Output Current Limit: 2.9 A	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by UL	UL
	DIODES INC	For CB: AP22811 Series For UL: AP22811AW5-7, AP22811BW5-7, AP22811AM8- 13, AP22811BM8-13, may be followed by blank or additional alphanumeric suffices for marketing purposes only	Input voltage: 2.7 Vdc to 5.5 Vdc, Output Current Limit: 3.2 A	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by UL	UL
	Richtek Technology Corp.	RT9742..G. (The first dot "." Can be A to Z represent output current/enable function. The second dot "." Can be N or blank represent discharge function The third dot "." can be J5F/J5/V represent package type.)	2.7 V to 6 V, 3 A/2 A/1.5 A/1 A, 70 mohm/55 mohm (typ.) N- MOSFET Switch	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by Nemko	UL
Power Distribution Switch (U2600, U2602) (for both main boards)	NXP Semiconductor Taiwan Ltd.	NX5P3290AUK, NX5P3363UK	Input Voltage: 4.0 Vdc to 5.5 Vdc, Output Current Limit: 3.3 A	IEC 62368:2014, UL 2367, CB test report issued by UL	UL
	Global Mixed- mode Technology Inc.	For CB: G3712X1X2X3X 4, GD712X1X2X3X 4 (X1=A, B, C, D or null; X2=B6; X3=1 or 2; X4=U or D) For UL: G3712, followed by A, B, C, D OR NULL, followed by B6, followed by 1 or 2, followed by U or D	Input Voltage: 4.0 V to 5.5 V, Output Current Limit: 1 A to 4 A	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by TÜV	UL

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	ANPEC Electronics Corporation	APL3563HAI- TRG	Input voltage: DC 4.0 V to 5.5 V, Output Current Limit: 0.915 A to 3.96 A	IEC 62368:2014, UL 2367, CB test report issued by UL	UL
Power Distribution Switch (U2501) (for UMA main board)	TEXAS INSTRUMENTS INC	For CB: TPS2543, TPS2544, TPS2545, TPS2546 (Additional suffixes after the model number designate the type of integrated circuit package, integrated circuit lead types or other features that are considered not to affect the functionality of the device) For UL: TPS2543, TPS2544, TPS2545, TPS2546, may be followed by Q, may be followed by RTE, may be followed by R or T, may be followed by Q1	Input voltage: 4.5 Vdc to 5.5 Vdc, Output Current Limit: 3.1 A	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by TÜV	UL
	ANPEC Electronics Corporation	APL3524QBI- TRG	Input voltage: DC 4.5 V - 5.5 V, Cl. III, SELV, Nominal output: 0 - 2.5 A	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by TÜV	UL
	PERICOM SEMICONDUCT OR CORP	For CB: PI5USB25wwxyy yEz, where ww is 44, 46, 47 or 48,x is blank or A, yyy is ZH or ZHD for packaging type, E is Pb- free, and z is blank for bulk packaging or X for tape and reel packaging For UL: PI5USB2546ZH EX (Where "X" canbe any one alphanumeric digit or blank. "blank" represents "tube" packing; the alphanumeric digit "X" represents "tape & reel" packing.)	Input voltage: 4.5 - 5.5 Vdc, Output Current Limit: 100 mA to 3.18 A	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by UL	UL
Power Distribution Switch (U3000) (for UMA main board)	NUVOTON	NCT3521U, NCT3521U-2	2.7 Vdc to 5.5 Vdc, 2 A	IEC 60950-1: 2005 +A1+A2, UL 2367, CB test report issued by TÜV	UL
	Global Mixedmode Technology Inc.	G5250A1T12U	Input voltage: 3.0 Vdc to 5.5 Vdc,	IEC 60950-1: 2005+A1+A2, UL	UL

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	(GMT)		Output Current Limit: 3.5 A	2367, CB test report issued by TÜV	
	ANPEC Electronics Corporation	For CB: APL3522xBI-TRG (x=A or B) For UL: APL3522 Series, followed A or B, followed by B, followed by I, followed by -, followed by TR, followed by G	Input voltage: DC 2.7 V to 5.5 V Nominal output: 0 - 2.5 A	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by TÜV	UL
Power Distribution Switch (U2400, U3150) (for DIS main board)	Global Mixed- mode Technology Inc. (GMT)	For CB: G524BX1X2X3X 4 (X1=1, 2, 3 or 4 ; X2=TP, P8, F5 or T1 ; X3=1 ; X4=U) For UL: G524B, followed by 1, 2, 3, or 4, followed by T1, TP, P8, or F5, followed by 1, followed by U	Input voltage: 2.7 Vdc to 5.5 Vdc, Output Current Limit: 2.2 A to 2.8 A	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by TÜV	UL
	ANPEC ELECTRONICS CORP	For CB: APL3553 followed by A, B, E or F, followed by B, C or X, followed by I, followed by -,followed by TR, followed by G For UL: APL3553 Series followed by A, B, E or F, followed by B, C or X, followed by I, followed by -, followed by TR, followed by G	Input voltage: 2.7 Vdc to 5.5 Vdc, Output Current Limit: 2.9 A	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by UL	UL
	DIODES INC	For CB: AP22811 Series For UL: AP22811AW5-7, AP22811BW5-7, AP22811AM8- 13, AP22811BM8- 13, may be followed by blank or additional alphanumeric suffices for marketing purposes only	Input voltage: 2.7 Vdc to 5.5 Vdc, Output Current Limit: 3.2 A	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by UL	UL
	Richtek Technology Corp.	RT9742..G. (The first dot “.” Can be A to Z represent output current/enable function. The second dot “.” Can be N or blank represent discharge function The third dot “.” can be J5F/J5/V represent package type.)	2.7 V to 6 V, 3 A/2 A/1.5 A/1 A, 70 mohm/55 mohm (typ.) N- MOSFET Switch	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by Nemko	UL

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Power Distribution Switch (U2500) (for DIS main board)	TEXAS INSTRUMENTS INC	For CB: TPS2543, TPS2544, TPS2545, TPS2546 (Additional suffixes after the model number designate the type of integrated circuit package, integrated circuit lead types or other features that are considered not to affect the functionality of the device) For UL: TPS2543, TPS2544, TPS2545, TPS2546, may be followed by Q, may be followed by RTE, may be followed by R or T, may be followed by Q1	Input voltage: 4.5 Vdc to 5.5 Vdc, Output Current Limit: 3.1 A	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by TÜV	UL
	ANPEC Electronics Corporation	APL3524QBI- TRG	Input voltage: DC 4.5 V - 5.5 V, Cl. III, SELV, Nominal output: 0 - 2.5 A	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by TÜV	UL
	PERICOM SEMICONDUCT OR CORP	For CB: PI5USB25wwxyy yEz, where ww is 44, 46, 47 or 48, x is blank or A, yyy is ZH or ZHD for packaging type, E is Pb- free, and z is blank for bulk packaging or X for tape and reel packaging For UL: PI5USB2546ZH EX (Where "X" can be any one alphanumeric digit or blank. "blank" represents "tube" packing; the alphanumeric digit "X" represents "tape & reel" packing.)	Input voltage: 4.5 - 5.5 Vdc, Output Current Limit: 100 mA to 3.18 A	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by UL	UL
Polyswitch (F3000, F3001, F3002, F2200)	LITTELFUSE INC	0805L110ULXX YYYYY, X stands for A to Z, 0 to 9 or blank; Y stands for A to Z, 0 to 9 or blank.	1.1 A, 6 V	IEC 60730-1: 1999+A1+A2, EN 60730-1: 2000+A1+A2+A12+A13+A14+A16, UL 1434, UL 60730-1	TÜV, UL
	Polytronics	For TÜV: SPR-P110 For UL: SPR-P110($), ($) May be followed	1.1 A, 6 V	IEC 60730-1: 1999+A1+A2, EN 60730-1: 2000+A1+A2+A1	TÜV, UL

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		by symbol "-" and up to two alphanumeric characters denoting a resistance range or customer code, not related to construction or any other rating.		2+A13+A14+A16, UL 1434, UL 60730-1	
Polyswitch (F3003)	LITTELFUSE INC	1812L110/24	1.1 A, 24 Vdc	IEC 60730-1, UL 1434	TÜV, UL
	WAYON ELECTRONICS CO LTD	For TÜV: LP-MSM110 /24abcd (a = C, U, Blank; b = S, Z, Blank; c = H, Blank; d = F,Blank) For UL: LP-MSM110/24* * May be followed by H or F. (where "H" is Halogen free and "F" is Lead free)	1.1 A, 24 Vdc	IEC 60730-1, UL 1434	TÜV, UL
	POLYTRONICS TECHNOLOGY CORP	For TÜV: SMD1812P110T F/24X5 (X5 stands for blank or symbol "-" followed by up to two digits code of 0-9 or A- Z) For UL: SMD1812P110T (+)/24($), (+) May be followed by suffix S or F. ($) May be followed by symbol "-" and up to two alphanumeric characters denoting a resistance range or customer code, not related to construction or any other rating.	1.1 A, 24 Vdc	IEC 60730-1, UL 1434	TÜV, UL
LCD Panel	AUO	B140HANyyyy (y=0-9, A-Z, a-z, ".", "-" or blank)	14.0" TFT, LED backlight type. Laminated structure.	--	--
	AUO	B140HAKyyyy (y=0-9, A-Z, a-z, ".", "-" or blank)	14.0" TFT, LED backlight type. Laminated structure.	--	--
	INX	N140HCAyyyy (y=0-9, A-Z, a-z, ".", "-" or blank)	14.0" TFT, LED backlight type. Laminated structure.	--	--
	INX	N140HCNyyyy (y=0-9, A-Z, a-z, ".", "-" or blank)	14.0" TFT, LED backlight type. Laminated structure.	--	--
	INX	N140HCGyyyy (y=0-9, A-Z, a-z, ".", "-" or blank)	14.0" TFT, LED backlight type. Laminated structure.	--	--

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	BOE	yy140yyy-yyy (y= 0-9, A-Z or blank)	14.0” TFT, LED backlight type. Laminated structure.	--	--
	IVO	X140NVyy (y=0-9, A-Z, blank or symbol '-')	14.0” TFT, LED backlight type. Laminated structure.	--	--
	IVO	R140NWxx (x=0-9, A-Z, blank or symbol '-')	14.0” TFT, LED backlight type. Laminated structure.	--	--
	LGD	LP140WFA	14.0” TFT, LED backlight type. Laminated structure.	--	--
	AUO	B140ZANyyyy (y=0-9, A-Z, a-z, “.”, "-" or blank)	14.0” TFT, LED backlight type. Laminated structure.		
	Interchangeable	Interchangeable	14.0” TFT, LED backlight type. Laminated structure.		
Mesh	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	VTM-0, min. 80 °C, min. 0.05 mm thick min.	UL 94	UL
Sponge near fin of thermal module	CENTURY CREATION INTERNATIONA L CO LTD	CR-2030B	V-1 min.	UL 94	UL
Adhesive for Mesh	Seal king Industrial Co., Ltd.	TT-219	--	--	--
Adhesive for Sponge	SONY CHEMICAL & INFORMATION DEVICE CORP	G9000	--	--	--
IR LED for facing camera (Optional)	Liteon	LTE-R28206AS- Q, LTE-R28206AS- Y, LTE-R28206AS- Q-XX, LTE-R28206AS- Y-XX (“XX” means customer number)	DC 3.1 V, 1 A	IEC 62471: 2006, EN 62471: 2008	Test report issued by SGS
SSD (Optional)	Interchangeable	Interchangeable	3.3 Vdc or 5 Vdc	--	--
Speakers (Optional)	Interchangeable	Interchangeable	Min. 3.4 Ω, max. 3 W, two provided	--	--
PCB	Interchangeable	Interchangeable	V-1min., 105 °C	UL 796	UL

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Adapter for Rating 19.5Vdc, 2.31A (Optional)	Acbel / hp	TPN-AA05	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m,Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV

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(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA14	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m,Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA15	I/P: 100-240 Vac,1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Lite-On Technology Corp / hp	TPN-LA15	I/P: 100-240 Vac, 1.1 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA16	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Interchangeable	Interchangeable	O/P: 19.5 Vdc, 2.31A min. altitude: 3048 m min., Tma: 35°C min.	IEC 60950-1: 2005+A1+A2 IEC 623681:2014	CB (issued by National Certification Body)
Adapter for rating 15Vdc, 3A (Optional)	Acbel / hp	TPN-AA07	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma:35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA20	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Lite-On Technology Corp / hp	TPN-LA19	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A Altitude: 5000 m, Tma:35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA15	I/P: 100-240 Vac, 1.4 A Max., 50-60 Hz O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Interchangeable	Interchangeable	O/P: 15 Vdc, 3 A max. Altitude: 3048 m min., Tma: 35°C min	IEC 60950-1: 2005+A1+A2 IEC 623681:2014	CB (issued by National Certification Body)
Adapter for Rating 19.5Vdc, 3.33A (Optional)	Acbel / hp	TPN-AA06	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma:35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV

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(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA16	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A, 65 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A, 65 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Lite-On Technology Corp / hp	TPN-LA16	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma:35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Lite-On Technology Corp / hp	TPN-LA17	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma:35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma:35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Interchangeable	Interchangeable	O/P: 19.5Vdc, 3.33A min. altitude: 3048 m min., Tma: 35°C min.	IEC 60950-1: 2005+A1+A2 IEC 623681:2014	CB (issued by National Certification Body)
Adapter for rating 20Vdc, 3.25A (Optional)	Chicony Power Technology Co., Ltd. / hp	TPN-CA21	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA20	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Honor / hp	TPN-HA01	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by UL
(Alternate)	Interchangeable	Interchangeable	O/P: 20 Vdc, 3.25A max. Altitude: 3048 m min., Tma: 35°C min	IEC 60950-1: 2005+A1+A2 IEC 623681:2014	CB (issued by National Certification Body)
Battery pack (Li-ion type)	Zhuhai CosMX	HSTNN-OB1T	11.4 Vdc, 3790mAh	IEC 62368-1(2014), IEC 62133(2012), IEC 62133-2(2017)	CB by TUV (IEC 62133) CB by UL (IEC 62368)

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(Alternate)	Dynapack	TPN-DB0B	11.4 Vdc, 45 Wh, 3790mAh	IEC 62368-1(2014), IEC 62133(2012), IEC 62133-2(2017)	CB by UL
(Alternate)	Samsung SDI	HSTNN-UB7X	11.4Vdc, 45Wh, 3790mAh	IEC 62133: 2012 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-1201 CSA C22.2 No. 62368-1-14, 2nd	CB by UL
(Alternate)	Simplo	HSTNN-IB9Q	11.4Vdc, 45Wh, 3790mAh	IEC 60950 1 (2005);A1+A2, IEC 62368-1(2014), IEC 62133(2012), IEC 62133-2(2017)	CB by UL
(Alternate)	Simplo	HSTNN-IB9P	11.4Vdc, 45Wh, 3790mAh	IEC 60950-1 (2005);A1+A2, IEC 62368-1(2014), IEC 62133(2012) IEC 62133-2(2017)	CB by UL
Panel (LED backlight)	AUO	B140HAN04.D	14 inch TFTLCD, LED backlight	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	Interchangeable	Interchangeable	14 inch TFTLCD, LED backlight	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
DC Fan (For DIS type)	KunshanPindai ElectricalCo.,Ltd	PB8506F05HS2	5Vdc, 0.45A min, 4.18 CFM min.	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD	EG5005S01-CG90-S9A	5Vdc, 0.374A max, 5.0 CFM	Applicable parts of IEC 60950-1:2005 +A1+A2	Tested in appliance
DC Fan (For UMA type)	KunshanPindai ElectricalCo.,Ltd	PB8505S05HS2	5Vdc, 0.45A min, 3.63 CFM min.	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD	EG70040S1-C130-S9A	5Vdc, 0.396A max, 4.7 CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
Power distribution switch (for USB 3.0 and type C ports)	Cypress Semiconductor Corporation	CYPD6127- 48LQXI	Input voltage: 4.0 Vdc - 5.5 Vdc Output current limit: 4.2 A	IEC 62368-1:2014	CB by UL
(Alternate)	Global Mixedmode Technology Inc. (GMT)	G517HX1X2X3X 4 (X1=1, 2, 3, or 4 X2=T1, TB, TO, TP or P8; X3=1, 2 or 3 X4=U or D)	Input Voltage: 2.7-5.5Vdc, Output Continuous Rating: 2.6 A Output Current Limit: 2.7-3.9 A	IEC 60950-1: 2005+A1+A2 UL 2367	CB by TUV, UL
(Alternate)	Global Mixed-mode Technology Inc	G517B; followed by 1, 2, 3, or 4; followed by T1, TB, TO, TP, U5 or TM; followed by 1, 2, or 3; followed by U or	2.7-5.5 Vdc, Cont. Current: 0.2A, Prot. Current: 0.3 to 0.5A	UL 2367 (First Edition), IEC 60950-1(ed.2), IEC 60950-1(ed.2);am1, IEC 60950-1(ed.2);am2	UL (E232223) TUV (JPTUV-077390)

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		D , G517BX1X2X 3X4, X1=1, 2, 3, or 4 X2=T7, T1, TB, TO, TP, KF, U5 or TM, X3=1,2 or 3, X4=U or D			
(Alternate)	TEXAS INSTRUMENTS INC	TPS2546	4.0-5.5Vdc, Output Continuous rating: 2.5A, Output current Limit: 3.1A	IEC 609501 (ed.2), IEC609501(ed.2); am 1, IEC 609501 (ed.2);am2	CB by UL, UL
(Alternate)	DIODES INC	AP22804AW5-7	Input Voltage: 2.5 to 5.5 Vdc, Output Continuous Rating: 2.5A, Output Current Limit: 3.3 A	IEC 60950-1: 2005+A1+A2	CB by UL, UL
(Alternate)	EXCELLIANCE MOS CORPORATION	EM5213AJ-25	Input Voltage: 2.5 to 5.5 Vdc, Output Continuous Rating: 2.5A, Output Current Limit:2.5A	IEC 60950-1: 2005+A1+A2 UL 236	CB by TUV, UL
(Alternate)	DOUBLE BEST CO LTD	CR2032	Max. abnormal charging current 10mA, max. abnormal charging voltage 5Vdc	UL 1642	UL (MH46388)
(Alternate)	Vic-Dawn Entreprise Co., Ltd	CR2032	Max. abnormal charging current 10Ma.	UL 1642	UL (MH20550)
(Alternate)	Interchangeable	Interchangeable	Max. abnormal charging current 10mA, max. abnormal charging voltage 5Vdc	UL 1642	UL
Speaker	Interchangeable	Interchangeable	4 +15% ohm, 2.5W max.	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
SSD (optioanl)	Interchangeable	Interchangeable	3.3Vdc or 5Vdc, optional.	IEC 609501:2005+A1 +A2, CAN/CSA C22.2 No. 60950-1, UL 60950-1	CB by NCB, cUL, UL
PCB	CHUAN YI COMPUTER (SHENZHEN) CO LTD	CM-4	V-0, 130°C	UL 796 (Eleventh Edition)	UL (E162264)
(Alternate)	GOLD CIRCUIT ELECTRONICS LTD	D-V0A-2, H	V-0, 130°C	UL 796 (Eleventh Edition)	UL (E82152)
(Alternate)	HANNSTAR BOARD CORP	MV-4	V-0, 130°C	UL 796 (Eleventh Edition)	UL (E89382)
(Alternate)	TAIWAN PRINT CIRCUIT BOARD TECHVEST CO LTD	MV-0	V-0, 130°C	UL 796 (Eleventh Edition)	UL (E88441)
(Alternate)	Interchangeable	Interchangeable	V-1 min., 105 degree C min	UL 796 (Eleventh Edition)	UL

Metal Enclosure material (For DIS type)	Interchangeable	Interchangeable	Metal , 0.7 mm thickness min	--	--
Plastic Enclosure (Bottom case) (For UMA type)	LG CHEM LTD	LUPOY ER2253F(#) (#) May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A AF303G, AF303S, XR404T, XR407D, XR407E.	V-0, min. thickness 0.8 mm, 80°	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	GXV-35(cc)U(#) (#) – Suffix optional (cc) 10through 30.	V-0, min. thickness 0.75 mm, 80°	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E244324)
Plastic Enclosure (for top cover enclosure, display bezel)	LG CHEM LTD	LUPOY GN5151RF(#) (#)may be followed by optional suffix letter from A-Z incl., except F, and except Grades AF302G, HT700B, XR401B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X	V-0, min. thickness 1.0 mm, 60°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Adapter for Rating 19.5Vdc, 2.31A (Optional)	Acbel / hp	TPN-AA05	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA14	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31ª altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA15	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31ª altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Lite-On Technology Corp / hp	TPN-LA15	I/P: 100-240 Vac, 1.1 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV

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(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA16	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Interchangeable	Interchangeable	O/P: 19.5 Vdc, 2.31A min. altitude: 3048 m min., Tma: 35°C min.	IEC 60950-1: 2005+A1+A2 IEC 623681:2014	CB (issued by National Certification Body)
Adapter for Rating 15Vdc, 3A (Optional)	Acbel / hp	TPN-AA07	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA20	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma:35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Lite-On Technology Corp / hp	TPN-LA19	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A Altitude: 5000 m, Tma:35°C	EC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA15	I/P: 100-240 Vac, 1.4 A Max., 50-60Hz O/P: DC 5V,3A; 9V, 3A; 12V, 3A; 15V, 3ª altitude: 5000 m,Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Interchangeable	Interchangeable	O/P: 15 Vdc, 3 A max. Altitude: 3048 m min., Tma: 35°C min	IEC 60950-1: 2005+A1+A2 IEC 623681:2014	CB (issued by National CertificationBody)
Adapter for Rating 19.5Vdc, 3.33A (Optional)	Acbel / hp	TPN-AA06	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA16	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A, 65 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV

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(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc,3.33A, 65 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Lite-On Technology Corp / hp	TPN-LA16	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Lite-On Technology Corp / hp	TPN-LA17	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc,3.33A altitude: 5000 m, Tma:35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma:35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Interchangeable	Interchangeable	O/P: 19.5Vdc, 3.33A min. altitude: 3048 m min., Tma: 35°C min.	IEC 60950-1: 2005+A1+A2 IEC 623681:2014	CB (issued by National Certification Body)
Adapter for rating 20Vdc, 3.25A (Optional)	Chicony Power Technology Co., Ltd. / hp	TPN-CA21	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA20	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Honor / hp	TPN-HA01	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by UL
(Alternate)	Interchangeable	Interchangeable	O/P: 20 Vdc, 3.25A max. Altitude: 3048 m min., Tma: 35°C min	IEC 60950-1: 2005+A1+A2 IEC 623681:2014	CB (issued by National Certification Body)
Battery pack (Li-ion type)	Zhuhai CosMX	HSTNN-OB1T	11.4 Vdc, 45 Wh, 3790mAh	IEC 62133: 2012 IEC 62368-1: 2014 UL 623681, 2nd Edition, 2014-1201, CSA C22.2 No. 62368-1-14, 2nd	CB by TUV (IEC 62133) CB by UL (IEC 62368)
Alternate)	Dynapack	TPN-DB0B	11.4 Vdc, 45 Wh, 3790mAh	IEC 623681(2014), IEC 62133(2012), IEC 621332(2017)	CB by UL

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Alternate)	Samsung SDI	HSTNN-UB7X	11.4Vdc, 45Wh, 3790mAh	IEC 62133: 2012 IEC 62368-1: 2014 UL 623681, 2nd Edition, 2014-1201 CSA C22.2 No. 62368-1-14, 2nd	CB by TUV (IEC 62133) CB by UL (IEC 62368)
Alternate)	Simplo	HSTNN-IB9Q	11.4Vdc, 45Wh, 3790mAh	IEC 623681(2014), IEC 62133(2012), IEC 621332(2017)	CB by UL
Alternate)	Simplo	HSTNN-IB9P	11.4Vdc, 45Wh, 3790mAh	IEC 623681(2014), IEC 62133(2012), IEC 621332(2017)	CB by UL
Panel (LED backlight)	AUO	B140HAN04.D	14 inch TFTLCD, LED backlight	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	Interchangeable	Interchangeable	14 inch TFTLCD, LED backlight	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
DC Fan	KunshanPindaiElectricalCo.,Ltd	PB8505S05HS2	5Vdc, 500mA min, 3.0 CFM min.	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD	EG70040S1- C130-S9A	5Vdc, 500mA max, min. 3.4 CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
Power distribution switch (for USB 3.0 and type C ports)	Cypress Semiconductor Corporation	CYPD612748LQ XI CCG6SF	Input voltage: 4.0 Vdc - 5.5 Vdc Output current limit: 3.3 A	Applicable parts of IEC 623681:2014	CB by UL
(Alternate)	Global Mixedmode Technology Inc. (GMT)	G517HX1X2X3X 4 (X1=1, 2, 3, or 4 X2=T1, TB, TO, TP or P8; X3=1, 2 or 3 X4=U or D)	Input Voltage: 2.7-5.5Vdc, Output Continuous Rating: 2.6 A Output Current Limit: 2.7-3.9 A	IEC 60950-1: 2005+A1+A2 UL 2367	CB by TUV, UL
(Alternate)	Global Mixed- mode Technology Inc	G517B; followed by 1, 2, 3, or 4; followed by T1, TB, TO, TP, U5 or TM; followed by 1, 2, or 3; followed by U or D , G517BX1X2X3X4, X1=1, 2, 3, or 4, X2=T7, T1, TB, TO, TP, KF, U5 or TM, X3=1,2 or 3, X4=U or D	2.7-5.5 Vdc, Cont. Current: 0.2A, Prot. Current: 0.3 to 0.5A	UL 2367 (First Edition), IEC 60950-1(ed.2), IEC 60950-1(ed.2);am1, IEC 60950-1(ed.2);am2	UL (E232223) TUV (JPTUV- 077390)
(Alternate)	TEXAS INSTRUMENTS INC	TPS2546	4.0-5.5Vdc, Output Continuous rating: 2.5A, Output current Limit: 3.1A	IEC 609501(ed.2), IEC609501(ed.2);am 1, IEC 609501 (ed.2);am2	CB by UL, UL
(Alternate)	DIODES INC	AP22804AW5-7	Input Voltage: 2.5 to 5.5 Vdc, Output Continuous Rating: 2.5A, Output Current Limit: 3.3 A	IEC 60950-1: 2005+A1+A2	CB by UL, UL

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(Alternate)	EXCELLIANCE MOS CORPORATIO	EM5213AJ-25	Input Voltage: 2.5 to 5.5 Vdc, Output Continuous Rating: 2.5A, Output Current Limit:2.5A	IEC 60950-1: 2005+A1+A2 UL 236	CB by TUV, UL
(Alternate)	ANPEC	APL3553, APL3555	Input Voltage: 2.7 to 5.5 Vdc Output Continuous Rating: 2.0 A for Models APL3555 followed by A or B, followed by B, followed by I, followed by -, followed by TR, followed by G Models APL3553 followed by A, B, E, F, I or J followed by B, C or X followed by I, followed by -, followed by TR, followed by G 1.0 A for Models APL3555 followed by C or D, followed by B, followed by I, followed by -, followed by TR, followed by G Models APL3553 followed by C, D, G or H, followed by B, C or X, followed by I, followed by -, followed by TR, followed by G	IEC 60950-1 (ed.2) IEC 60950-1 (ed.2);am1 IEC 60950-1 (ed.2);am2	CB by UL (DK59231-A2- UL)
(Alternate)	ANPEC	APL3553, APL3555	Current Limit Rating: 3.9 A for Models APL3553 followed by I or J, followed by B, C or X, followed by I, followed by -, followed by TR, followed by G 2.9 A for Models APL3555 followed by A or B, followed by B, followed by I, followed by -, followed by TR, followed by G Models APL3553 followed by A, B, E or F, followed by B, C or X, followed by I, followed by -, followed by TR, followed by G 1.9 A for Models APL3555 followed by C or D, followed by B, followed by I, followed by -, followed by TR, followed by G Models APL3553 followed by C, D, G or H, followed by B, C or X, followed by I, followed by -, followed by TR, followed by G Ambient: -40 to 85°C	IEC 60950-1 (ed.2) IEC 60950-1 (ed.2);am1 IEC 60950-1 (ed.2);am2	CB by UL (DK59231-A2- UL)

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(Alternate)	SILERGY TECHNOLOGY (TAIWAN) INC	SY6863B4ABC	2.5 Vdc to 5.5 Vdc, Cont. Current: 0.1-3A, Prot. Current: 0.3- 5A	UL 2367 (First Edition), IEC 60950-1(ed.2), IEC 60950-1(ed.2);am1, IEC 60950- 1(ed.2);am2	UL (E322375) UL (DK-64454- A1-UL)
(Alternate)	DIODES INC	AP22615,followed by A or B, followed by WT, WU, or ST, followed by 7, may be followed by additional alphanumerics	Input Voltage/Output Continuous Rating:3.0 - 4.0 Vdc, Iout = 1A to 1.5A 4.0 - 5.5 Vdc, Iout = 1A to 3A Output Current Limit:3.0 - 5.5 Vdc, at 1.35A - 3.6A	UL 2367 (First Edition), IEC 60950-1(ed.2), IEC60950-1(ed.2);am1, IEC 60950-1(ed.2);am2	UL (E322375) UL (US-32144- UL)
(Alternate)	NXP Semiconductor Taiwan Ltd.	NX5P3290AUK Z, NX5P3363UK	4.0-5.5Vdc, Output current limit: 3.3A	IEC 623681(ed2)	UL (E470128)
SSD (optioanl)	Interchangeable	Interchangeable	3.3Vdc or 5Vdc, optional.	IEC 609501:2005+A1 +A2, CAN/CSA C22.2 No. 60950-1, UL 60950-1	CB by NCB, cUL, UL
PCB	CHUAN YI COMPUTER (SHENZHEN) CO LTD	CM-4	V-0, 130°C	UL 796 (Eleventh Edition)	UL (E162264)
(Alternate)	GOLD CIRCUIT ELECTRONICS LTD	D-V0A-2, H	V-0, 130°C	UL 796 (Eleventh Edition)	UL (E82152)
(Alternate)	HANNSTAR BOARD CORP	MV-4	V-0, 130°C	UL 796 (Eleventh Edition)	UL (E89382)
(Alternate)	TAIWAN PRINT CIRCUIT BOARD TECHVEST CO LTD	MV-0	V-0, 130°C	UL 796 (Eleventh Edition)	UL (E88441)
(Alternate)	Interchangeable	Interchangeable	V-1 min., 105 degree C min	UL 796 (Eleventh Edition)	UL
Internal plastic enclosure	Interchangeable	Interchangeable	Min. V-2	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL
Plastic enclosure (Bottom case)	LG CHEM LTD	LUPOY ER- 2253F(#) (#) Maybe followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E	V-0, min. thickness 0.8 mm, 80°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	GXV-35(cc)U(#) (#) – Suffix optional (cc) 10through 30	V-0, min. thickness 0.75 mm, 80°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (244324)
Plastic Enclosure (for top cover enclosure, display bezel)	LG CHEM LTD	LUPOY GN-5151RF (#) (#)may be followed by optional suffix letter from A-Z incl., except F, and except Grades AF302G, HT700B, XR401B, LI912A, AF303G, AF303S,	V-0, min. thickness 1.0 mm, 60°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)

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		XR404T, XR407D, XR407E, HF380X			
(Alternate)	LG CHEM LTD	LUPOY ER 5001RF (#), (#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E.	V-0, min. thickness 1.0 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	TEIJIN CHEMICALS PLASTICCOMPOUNDS SHANGHAI LTD	TN-3713B(#), (#) - Suffix optional	V-0, min. thickness 1.0 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E244324) (E98529)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD or TEIJIN LIMITED RESIN AND PLASTIC	TN-3715B(n1), (#),TN-3745B(#),TN-7400B(#) - Suffix optional, (n1) May be suffixed with any letters except Z. TN3715BZ(#)	V-0, min. thickness 1.2 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E244324) (E98529)
Internal plastic frame Rear side (Near hinge)	LG CHEM LTD	LUPOY GN- 5151RF (#)(#)may be followed by optional suffix letter from A-Z incl., except F, and except Grades AF302G, HT700B, XR401B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X	V-0, min. thickness 1.0 mm, 60°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	LG CHEM LTD	LUPOY ER-5001RF(#), (#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E.	V-0, min. thickness 1.0 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-3713B(#), (#) - Suffix optional	V-0, min. thickness 1.0 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E244324) (E98529)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD or TEIJIN LIMITED RESIN AND PLASTIC	TN-3715B(n1), (#),TN-3745B(#),TN-7400B(#) - Suffix optional, (n1) May be suffixed with any letters except Z. TN3715BZ(#)	V-0, min. thickness 1.2 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E244324) (E98529)

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(Alternate)	LG CHEM LTD	LUPOY ER-5001RF(#), (#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E.	V-0, min. thickness 1.0 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)

Object/partNo.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Adapter for Rating 19.5Vdc, 2.31A (Optional)	Acbel / hp	TPN-AA05	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA14	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA15	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Lite-On Technology Corp / hp	TPN-LA15	I/P: 100-240 Vac, 1.1 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA16	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Interchangeable	Interchangeable	O/P: 19.5 Vdc, 2.31A min. altitude: 3048 m min., Tma: 35°C min.	IEC 60950-1: 2005+A1+A2 IEC 623681:2014	CB (issued by National Certification Body)
Adapter for Rating 15Vdc, 3A (Optional)	Acbel / hp	TPN-AA07	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA20	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma:35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV

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(Alternate)	Lite-On Technology Corp / hp	TPN-LA19	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A Altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA15	I/P: 100-240 Vac, 1.4 A Max., 50-60Hz O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Interchangeable	Interchangeable	O/P: 15 Vdc, 3 A max. Altitude: 3048 m min., Tma: 35°C min	IEC 60950-1: 2005+A1+A2 IEC 623681:2014	CB (issued by National Certification Body)
Adapter for Rating 19.5Vdc, 3.33A (Optional)	Acbel / hp	TPN-AA06	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA16	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A, 65 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A, 65 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Lite-On Technology Corp / hp	TPN-LA16	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Lite-On Technology Corp / hp	TPN-LA17	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Interchangeable	Interchangeable	O/P: 19.5Vdc, 3.33A min. altitude: 3048 m min., Tma: 35°Cmin.	IEC 60950-1: 2005+A1+A2 IEC 623681:2014	CB (issued by National Certification Body)
Adapter for rating 20Vdc, 3.25A (Optional)	Chicony Power Technology Co., Ltd. / hp	TPN-CA21	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude:	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV

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			5000 m, Tma: 35°C		
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA20	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate)	Honor / hp	TPN-HA01	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by UL
(Alternate)	Interchangeable	Interchangeable	O/P: 20 Vdc, 3.25A max. Altitude: 3048 m min., Tma: 35°C min	IEC 60950-1: 2005+A1+A2 IEC 623681:2014	CB (issued by National Certification Body)
Battery pack (Li-ion type)	Zhuhai CosMX	HSTNN-OB1T	11.4 Vdc, 3790mAh	IEC 62368-1(2014), IEC 62133(2012), IEC 62133-2(2017)	CB by TUV (IEC 62133) CB by UL (IEC 62368)
(Alternate)	Dynapack	TPN-DB0B	11.4 Vdc, 45 Wh, 3790mAh	IEC 62368-1(2014), IEC 62133(2012), IEC 62133-2(2017)	CB by UL
(Alternate)	Samsung SDI	HSTNN-UB7X	11.4Vdc, 45Wh, 3790mAh	IEC 62133: 2012 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-1201 CSA C22.2 No. 62368-1-14, 2nd	CB by UL
(Alternate)	Simplo	HSTNN-IB9Q	11.4Vdc, 45Wh, 3790mAh	IEC 60950-1(2005);A1+A2, IEC 62368-1(2014), IEC 62133(2012), IEC 62133- 2(2017)	CB by UL
(Alternate)	Simplo	HSTNN-IB9P	11.4Vdc, 45Wh, 3790mAh	IEC 60950 1(2005) ;A1+A2, IEC 62368-1(2014), IEC 62133(2012), IEC 62133- 2(2017)	CB by UL
Panel (LED backlight)	AUO	B133HAK02.3	13.3 inch TFTLCD, LED backlight	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	Interchangeable	Interchangeable	13.3 inch TFTLCD, LED backlight	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance

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DC Fan	KunshanPindaiElectricalCo.,Ltd	PB7505S05HS2	5Vdc, 0.45A min, 3.5 CFM min.	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD	EG70040S1-C120-S9A	5Vdc, 0.385A max, 4.3 CFM min.	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
RTC Battery	Jhih Hong Technology Co., Ltd.	CR2032	Max. abnormal charging current 10mA, max. abnormal charging voltage 5Vdc	UL 1642	UL (MH48406)
(Alternate)	DOUBLE BEST CO LTD	CR2032	Max. abnormal charging current 10mA, max. abnormal charging voltage 5Vdc	UL 1642	UL (MH46388)
(Alternate)	Vic-Dawn Entreprise Co., Ltd	CR2032	Max. abnormal charging current 10Ma.	UL 1642	UL (MH20550)
(Alternate)	Interchangeable	Interchangeable	Max. abnormal charging current 10mA, max. abnormal charging voltage 5Vdc	UL 1642	UL
Speaker	Interchangeable	Interchangeable	4 +15% ohm, 2.5W max.	Applicable parts of IEC 60950- 1:2005+A1+A2	Tested in appliance
SSD (optional)	Interchangeable	Interchangeable	3.3Vdc or 5Vdc, optional.	IEC 609501: 2005+A1+A2, CAN/CSA C22.2 No. 60950-1, UL 60950-1	CB by NCB, cUL, UL
Plastic Enclosure (Bottom case)	LG CHEM LTD	LUPOY ER2253F(#) (#) May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E.	V-0, min. thickness 0.8 mm, 80°	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	GXV-35(cc)U(#) (#) – Suffix optional (cc) 10through 30.	V-0, min. thickness 0.75 mm, 80°	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E244324)
Plastic Enclosure (for top cover enclosure, display bezel)	LG CHEM LTD	LUPOY GN5151RF(#) (#)may be followed by optional suffix letter from A-Z incl., except F, and except Grades AF302G, HT700B, XR401B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X	V-0, min. thickness 1.0 mm, 60°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	LG CHEM LTD	LUPOY ER5001RF(#), (#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S,	V-0, min. thickness 1.0 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)

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		XR404T, XR407D, XR407E.			
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD or TEIJIN LIMITED RESIN AND PLASTIC	TN-3713B(#), TN-3715B(n1),(#) - Suffix optional, (n1) - May be suffixed with any letters except Z. TN 3715BZ(#)	V-0, min. thickness 1.2 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E244324) (E98529)
(Alternate)	TEIJIN LIMITED RESIN AND PLASTIC	TN-3745B(#) ((#) - Suffix optional)	V-0, min. thickness 1.2 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E98529)
(Alternate)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7400B(#) ((#) - Suffix optional)	V-0, min. thickness 1.2 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E98529)

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
External Power Adaptor (only for rated 19.5 Vdc, 2.31 A used) (Optional)	Chicony (hp)	HSTNN-CA40	I/P:100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A. Max. operating altitude: 5000 m.	IEC 60950-1: 2005+A1+A2, EN 60950-1:2006+A11 +A1+ A12+A2 UL 60950-1 2n Edition, 2011-12-19, CSA C22. No. 60950-1-07, 2nd Edition,2011-12	CB by TÜV Rh, TÜV, UL/cUL
(only for rated 19.5 Vdc, 2.31 A used)	Delta (hp)	HSTNN-DA40	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A. Max. operating altitude: 5000 m.	IEC 60950-1:2005+A1 +A2, EN 60950-1: 2006+A11+A1+ A12+A2, UL 60950-1 2nd Edition, 2011-12-19, CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12	CB by Demko, UL/cUL
(only for rated 19.5 Vdc, 2.31 A used)	Lite-On (hp)	HSTNN-LA40	I/P: 100-240 Vac, 1.1 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A. Max. operating altitude: 5000 m.	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014, EN 60950-1: 2006+A11+A1+ A12+A2,UL 60950-1 2nd Edition, 2011-12-19, CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12	CB by TÜV Rh, TÜV, UL/cUL
(only for rated 19.5 Vdc, 2.31 A used)	Flextronics (hp)	TPN-FA02	I/P: 100-240 Vac, 50-60 Hz, 1.3 A O/P: 19.5 Vdc, 2.31 A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014, EN 60950-1: 2006+A11 +A1+ A12+A2, UL 60950-1, 2nd Edition, 2014-10-14, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10	CB by Nemko, UL/cUL

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(only for rated 19.5 Vdc, 3.33 A used)	Acbel (hp)	PPP009A	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33 A. Max. operating altitude: 5000 m.	IEC 60950-1: 2005+A1+A2 EN 60950-1: 2006+A11 +A1+ A12+A2,, UL 60950-1, 2nd Edition, 2011-12-19, CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12	CB by TUV/RH TÜV, UL/cUL
(only for rated 19.5 Vdc, 3.33 A used)	Chicony (hp)	PPP009C	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33 A. Max. operating altitude: 5000 m.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11 +A1+ A12+A2, UL 60950-1, 2nd Edition, 2007-03-27, CSA C22.2 No. 60950-1-07, 2nd Edition, 2007-03	CB by TUV/RH TÜV, UL/cUL
(only for rated 19.5 Vdc, 3.33 A used)	Delta (hp)	PPP009D	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc; 3.33 A. Max. operating altitude: 3048 m or 5000 m	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+ A12+A2, UL 60950-1, 2nd Edition, 2007-03-27, CSA C22.2 No. 60950-1-07, 2nd Edition, 2007-03	CB by TUV/RH, TÜV, UL/cUL
(only for rated 19.5 Vdc, 3.33 A used)	Lite-On (hp)	Series PPP019L-S	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: 19.5 Vdc, 3.33 A. Max. operating altitude: 5000 m.	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11+A1+ A12+A2, UL 60950-1, 2nd Edition, 2011-12-19, CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12	CB by NEMKO, TÜV, UL/cUL
(only for rated 19.5 Vdc, 3.33 A used)	Chicony (hp)	TPN-CA07	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33 A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+ A11+A1+ A12+A2, UL 60950-1, 2nd Edition, 2014-10-14, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10	CB by TÜV Rh, UL/cUL, TUV
(only for rated 19.5 Vdc, 3.33 A used)	Lite-On (hp)	TPN-LA08	I/P: 100-240 Vac, 1.6A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, EN 60950-1: 2006+A11 +A1+ A12+A2, UL 60950-1, 2ndEdition, 2014-10-14, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10	CB by TÜV Rh, UL/cUL, TUV
External Power Adaptor (Only for rated 19.5 Vdc, 2.31 A used)	Lite-On (hp)	TPN-LA15	I/P: 100-240 Vac, 1.1 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A, Max. operating altitude: 5000 m.	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL, UL

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(Only for rated 19.5 Vdc, 2.31 A used)	Chicony (hp)	TPN-CA14	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A, Max. operating altitude: 5000 m.	IEC 60950-1: 2005+A1+A2,IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV RH, UL/cUL
(Only for rated 19.5 Vdc, 2.31 A used)	Delta (hp)	TPN-DA16	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A, Max. operating altitude: 5000 m.	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), UL 60950-1, 2nd Edition, 2014-10- 14, CAN/CSA C22.No. 60950-1-07, 2nd Edition, 2014-10	CB by TUV RH, UL/cUL
(Only for rated 19.5 Vdc, 2.31 A used)	AcBel (hp)	TPN-AA05	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31 A, Max. operating altitude: 5000 m.	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV RH, UL/cUL
(Only for rated 19.5 Vdc, 3.33 A used)	Lite-On (hp)	TPN-LA16	I/P: 100-240 Vac, 1.7A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL, UL
(Only for rated 19.5 Vdc, 3.33 A used)	Chicony (hp)	TPN-CA16	I/P: 100-240 Vac, 1.7A, 50-60 Hz O/P:19.5 Vdc, 3.33 A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL
(Only for rated 19.5 Vdc, 3.33 A used)	Delta (hp)	TPN-DA17	I/P: 100-240 Vac, 1.7A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL
(Only for rated 19.5 Vdc, 3.33 A used)	Acbel (hp)	TPN-AA06	I/P: 100-240 Vac, 1.7A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A; Max. operating altitude: 5000 m	IEC 60950-1: 2005+ A1+A2, IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL

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(Only for rated 19.5 Vdc, 3.33 A used)	Lite-On (hp)	TPN-LA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A, Max. operating altitude: 5000 m.	IEC 60950-1: 2005+A1+A2,IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL, UL
(Only for rated 19.5 Vdc, 3.33 A used)	Chicony (hp)	TPN-CA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33 A, Max. operating altitude: 5000 m.	IEC 60950-1: 2005+A1+A2, IEC 62368-1:2014 (Second Edition), UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV RH, UL/cUL
(only for rated 19.5 Vdc, 2.31 A used)	Interchangeable	Interchangeable	O/P: 19.5 Vdc, 2.31 A min., Tma: 35 °C min. Max. operating altitude: 3048 m min.	IEC 60950-1: 2005+A1+A2, EN 60950-1:2006+A11 +A1+ A12+A2, UL 60950-1, 2nd Edition, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition	CB (issued by National Certification Body)
(only for rated 19.5 Vdc, 3.33 A used)	Interchangeable	Interchangeable	O/P: 19.5 Vdc, 3.33 A min., Tma: 35 °C min. Max. operating altitude: 3048 m min.	IEC 60950-1: 2005+A1+A2, EN 60950-1:2006+A11 +A1+ A12+A2, UL 60950-1, 2nd Edition, CAN/CSA C22.2 No. 60950-1-07, 2nd Edition	CB (issued by National Certification Body)
Plastic Enclosure (for bottom case)	Covestro Deutschland AG [PC Resins]	FR3021 + + - Material designations may be followed by a six digit numerical code denoting color	V-0 min., 1.5 mm thickness min., 85 °C	UL 94	UL
	LG CHEM LTD	LUPOY GN-5151RF(#) (#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, XR401B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X.	V-0 min., thickness 1.0 mm min., 60 °C	UL 94	UL
Plastic Enclosure (for display bezel and display rear)	ECOTECH POLYMERS	PCABSFR(J)e (J) - Denotes a three digit number from 701-799 indicative of customer code	V-0 min., 0.8 mm thickness min., 60 °C	UL 94	UL
	Covestro Deutschland AG [PC Resins]	FR3002 + + - Material designations may be followed by a six digit numerical code denoting color	V-0 min., 1.0 mm thickness min., 70 °C	UL 94	UL

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	Covestro Deutschland AG [PC Resins]	FR3008 + + - Material designations may be followed by a six digit numerical code denoting color	V-1 min., 1.0 mm thickness min., 60 °C	UL 94	UL
	Covestro Deutschland AG [PC Resins]	FR3021 + + - Material designations may be followed by a six digit numerical code denoting color	V-0 min., 1.5 mm thickness min., 85 °C	UL 94	UL
	Covestro Deutschland AG [PC Resins]	FR3040 + + - Material designations may be followed by a six digit numerical code denoting color	V-1 min., 0.6 mm thickness min., 80 °C	UL 94	UL
	LG CHEM LTD	GN-5001RFD	V-0 min., thickness 1.0 mm min., 60 °C	UL 94	UL
	LG CHEM LTD	LUPOY GN5001RF(T) (T) - May be followed by optional suffix letter from A-Z incl., except D, F	V-0 min., thickness 1.2 mm min., 60 °C	UL 94	UL
	LG CHEM LTD	LUPOY GN-5151RF(#) (#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, XR401B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X.	V-0 min., thickness 1.0 mm min., 60 °C	UL 94	UL
	Covestro Deutschland AG [PC Resins]	FR3040 R35 + + - Material designations may be followed by a six digit numerical code denoting color	V-0 min. or better, 0.75 mm thickness min., 80 °C	UL 94	UL
Plastic Enclosure (for top side around Keyboard)	Covestro Deutschland AG [PC Resins]	FR3002 + + - Material designations may be followed by a six digit numerical code denoting color	V-0 min. or better, 1.0 mm thickness min., 70 °C	UL 94	UL
	Covestro Deutschland AG [PC Resins]	FR3008 + + - Material designations may be followed by a six digit numerical code denoting color	V-1 min. or better, 1.0 mm thickness min., 60 °C	UL 94	UL
	Covestro Deutschland AG [PC Resins]	FR3021 + + - Material designations may be followed by a six digit numerical code denoting color	V-0 min. or better, 1.5 mm thickness min., 85 °C	UL 94	UL
	Covestro Deutschland AG [PC Resins]	FR3040 + + - Material designations may be followed by a six digit numerical code denoting color	V-1 min. or better, 0.6 mm thickness min., 80 °C	UL 94	UL
	LG CHEM LTD	GN-5001RFD	V-0 min. or better, thickness 1.0 mm min., 60 °C	UL 94	UL

	LG CHEM LTD	LUPOY GN5001RF(T) (T) - May be followed by optional suffix letter from A-Z incl., except D, F	V-0 min. or better, thickness 1.2 mm min., 60 °C	UL 94	UL
	LG CHEM LTD	LUPOY GN-5151RF(#) (#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, XR401B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X.	V-0 min. or better, thickness 1.0 mm min., 60 °C	UL 94	UL
	Covestro Deutschland AG [PC Resins]	FR3040 R35 + + - Material designations may be followed by a six digit numerical code denoting color	V-0 min. or better, 0.75 mm thickness min., 80 °C	UL 94	UL
Battery Pack (Optional)	Simplo (hp)	HSTNN-IB8O	11.4 Vdc, 41.04 Wh or 38.99 Wh	IEC 62368-1:2014 (Second Edition), IEC 62133(ed.2), UL 62368-1, 2nd Edition, UL 2054, UL 60950-1, 2nd Edition CSA C22.2 No. 62368-1-14, 2nd Edition	CB by UL, UL
	SAMSUNG SDI (hp)	HSTNN-UB7Q	11.55 Vdc, 41.7 Wh	IEC 62368- 1(ed.2), IEC 62133:2012 (Second Edition), UL 2054, UL 62368-1, CSA C22.2 No. 62368-1-14	CB by DEKRA, UL
	SAMSUNG SDI (hp)	HSTNN-UB7J	11.55 Vdc, 41.7 Wh	IEC 62368- 1(ed.2), IEC 62133:2012 (Second Edition), UL 2054, UL 60950-1, 2nd Edition	CB by DEKRA, UL
	LG Chem (hp)	HSTNN-LB8M	11.55 Vdc, 41.9 Wh	IEC 62368- 1(ed.2), IEC 62133:2012 (Second Edition), UL 2054,UL 60950-1, 2nd Edition	CB by UL, UL
	LG Chem (hp)	HSTNN-LB8L	11.55 Vdc, 41.9 Wh	IEC 62368- 1(ed.2), IEC 62133:2012 (Second Edition), UL 2054,UL 60950-1, 2nd Edition	CB by UL, UL
	Dynapack (hp)	HSTNN-DB8R	11.4 Vdc, 41.04 Wh	IEC 62368- 1(ed.2), IEC 62133:2012 (Second Edition), UL 2054,UL 62368-1, 2nd Edition	CB by UL, UL

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	Dynapack (hp)	HSTNN-DB8S	11.4 Vdc, 41.04 Wh	IEC 62368- 1(ed.2), IEC 62133:2012 (Second Edition), UL 2054,UL 62368-1, 2nd Edition	CB by UL, UL
	CosMX (hp)	HSTNN-OB1H	11.34 Vdc, 41.04 Wh(Typical)	IEC 62368-1:2014 (Second Edition), IEC 62133 (ed.2), UL 62368-1, 2nd Edition, UL 2054, CSA C22.2 No. 62368-1-14, 2nd Edition	CB by UL, UL
	Dynapack (hp)	HSTNN-DB9D	11.34 Vdc, 41.04 Wh	IEC 62368-1:2014 (Second Edition), IEC 62133(ed.2), UL 62368-1, 2nd Edition, UL 2054,CSA C22.2 No. 62368-1-14, 2nd Edition	CB by UL, UL
	Simplo (hp)	HSTNN-IB8X	11.34 Vdc, 41.04 Wh	IEC 62368-1:2014 (Second Edition), IEC 62133(ed.2), UL 62368-1, 2nd Edition, UL 2054, CSA C22.2 No. 62368-1-14, 2nd Edition	CB by UL, UL
CPU Cooling Fan	Delta	NS85B13(Y11), the number after Y represents digit, each digit may be A through Z, 0 through 9, "-" or blank	5 Vdc, 0.5 A, 4.35 CFM min.	IEC 60950-1: 2005+ A1+A2, EN60950-1: 2006+A11+A1+ A12+A2, UL 507	TUV, UL
	Forcecon	DF(X)200005(Y) 0T, where (X) may be B, C, or S, (Y) May be xx, where x may be A through Z, 0 through 9.	5 Vdc, 0.5 A, 4.07 CFM min.	EN 60950-1: 2006+A11+A1+ A12 +A2, IEC 60950-1 UL 507	TUV, UL
	Interchangeable	Interchangeable	5Vdc, Max. 0.5A, 4.07 CFM min	EN 60950-1: 2006+A11+A1+ A12 +A2, IEC 60950-1 UL 507	TUV, UL
Power Distribution Switch (U2400)	Global Mixed- mode Technology Inc. (GMT)	G517HX1X2X3X 4 (X1=1, 2, 3, or 4, X2=T1, TB, TO, TP or P8, X3=1, 2 or 3, X4=U or D)	Input voltage: 2.7 Vdc to 5.5 Vdc, Output Current Limit: 2.7 A to 3.9 A	IEC 60950-1: 2005+A1+A2, UL 2367	CB by TUV/Rh, UL
	ANPEC Electronics Corporation	APL3553 followed by I or J, followed by B, C or X, followed by I, followed by-, followed by TR, followed by G	Input Voltage: 2.7 Vdc to 5.5 Vdc, Current Limit Rating: 3.9 A	IEC 60950-1: 2005 (Second Edition) +A1:200 9+A2:2013, UL 2367	CB by UL, UL
	SILERGY Corp.	SY6288Cyyyyy (yyyyy=0-9, A-Z or blank)	Input voltage: 2.5Vdc to 5.5 Vdc, Output Current Limit: 4.4 A max.	IEC 60950-1: 2005+A1+A2, UL 2367	CB by TUV/Rh, UL

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	DIODES INC	AP22804AW5-7	Input Voltage: 2.7 Vdc to 5.5 Vdc, Output Current Limit: 3.3 A	IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013(Evaluated with UL Subject 2367)	CB by UL, UL
	JOULWATT TECHNOLOGY CO LIMITED	JW7115S-2.5SOTA#TRPB F	Input voltage: 2.7 Vdc to 5.5 Vdc, Output Current Limit: 2.05-2.35 A	IEC 62368-1:2014, UL 62368-1	CB by UL, UL
LCD Panel	AU Optronics Corporation	B140HAN04.0	14” TFT, LED backlight type.	--	--
	AU Optronics Corporation	B140HAN04.1	14” TFT, LED backlight type.	--	--
	AU Optronics Corporation	B140XTN02.D	14” TFT, LED backlight type.	--	--
	AU Optronics Corporation	B140XTN02.E	14” TFT, LED backlight type.	--	--
	AU Optronics Corporation	B140XTN07.2	14” TFT, LED backlight type.	--	--
	AU Optronics Corporation	B140XTN07.3	14” TFT, LED backlight type.	--	--
	BOE	NT140WHM- N44	14” TFT, LED backlight type.	--	--
	BOE	NT140WHM- N31	14” TFT, LED backlight type.	--	--
	BOE	NT140WHM- N34	14” TFT, LED backlight type.	--	--
	BOE	NT140WHM- N41	14” TFT, LED backlight type.	--	--
	BOE	NV140FHM-N3B	14” TFT, LED backlight type.	--	--
	BOE	NV140FHM-N4B	14” TFT, LED backlight type.	--	--
	InnoLux Corporation	N140HCA-EAC	14” TFT, LED backlight type.	--	--
	InnoLux Corporation	N140HCA-EBC	14” TFT, LED backlight type.	--	--
	InnoLux Corporation	N140BGA-EA3	14” TFT, LED backlight type.	--	--
	InnoLux Corporation	N140BGA-EB3	14” TFT, LED backlight type.	--	--
	InnoLux Corporation	N140BGA-EB4	14” TFT, LED backlight type.	--	--
	InnoLux Corporation	N140BGA-EA4	14” TFT, LED backlight type.	--	--
	LG Display Corporation	LP140WF8- SPQ1	14” TFT, LED backlight type.	--	--
	LG Display Corporation	LP140WF8- SPR1	14” TFT, LED backlight type.	--	--
	Interchangeable	Interchangeable	14” TFT, LED backlight type.	--	--
Dummy Fan (For configuration 4, 10 used only)	Interchangeable	Interchangeable	V-1 min.	UL 94	UL

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Hard Disk Drive (2.5 inch) (One provided) (optional)	Seagate	ST9 with additional suffixes	5 Vdc, max.1.5 A	IEC 60950-1: 2005+A1+A2	CB by UL
	Interchangeable	Interchangeable	5 Vdc, max. 1.5 A	EN 60950-1:2006+A11:2009+A1:2010+A12:2011 +A2:2013, IEC 60950-1: 2005+A1:2009+ A2: 2013, UL 60950-1	CB (issued by National Certification Body)
SSD (optional)	Interchangeable	Interchangeable	3.3 Vdc or 5 Vdc	--	--
Speaker (Two provided) (optional)	Interchangeable	Interchangeable	Each 4 Ω±15% or 4.1 Ω±15%, Max. 2.5 W	--	--
PCB	Interchangeable	Interchangeable	V-1 min., 105 □C min.	UL 796	UL
HDMI to VGA Adapter (Optional)	Interchangeable	Interchangeable	Tma: min. 35 °C	IEC 60950- 1:2005+ A1+A2, EN 609501: 2006+A11:2009+A1: 2010+A12:2011+A2: 2013,UL 60950-1	TUV, UL, CB (issued by National Certification Body)
USB Dongle (Optional)	Interchangeable	Interchangeable	Tma: min. 35 °C	IEC 60950-1:2005+A1+A2, EN 609501:2006+A11: 2009+A1:2010+A12: 2011+A2: 2013, UL 60950-1	CB (issued by National Certification Body)

Anexo 10 – Lista de componentes (modelo HSN-Q34C-4)

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
Adapter for rating 19.5Vdc, 2.31A (Optional)	Acbel / hp	TPN-AA05	Input: 100-240Vac, 4A, 50-60Hz Output: 19.5Vdc, 2.31A Altitude: 5000m, Tma: 35°C	IEC 60950-1:2005+ A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA14	Input: 100-240Vac, 1.4A, 50-60Hz Output: 19.5Vdc, 2.31A Altitude: 5000m, Tma: 35°C	IEC 60950-1:2005 +A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA15	Input:100-240Vac, 1.4A, 50-60Hz Output: 19.5Vdc, 2.31A Altitude: 5000m, Tma: 35°C	IEC 60950-1:2005 +A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL

(Alternate)	Lite-On Technology Corp / hp	TPN-LA15	Input: 100-240Vac, 1.1A, 50-60Hz Output: 19.5Vdc, 2.31A Altitude: 5000m, Tma: 35°C	IEC 60950-1:2005 +A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA16	Input: 100-240Vac, 1.4A, 50-60Hz Output: 19.5Vdc, 2.31A Altitude: 5000m, Tma: 35°C	IEC 60950-1:2005 +A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA22	Input: 100-240Vac, 1.4A, 50-60Hz Output:19.5Vdc, 2.31A Altitude: 5000m, Tma: 35°C	IEC 60950-1:2005 +A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Interchangeable	Interchangeable	Output: 19.5Vdc, min. 2.31A Altitude: min. 3048m, Tma: min. 35°C	IEC 60950-1:2005 +A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body) UL
Adapter for rating 15Vdc, 3A (Optional)	Acbel / hp	TPN-AA07	Input: 100-240Vac, 50-60Hz, 1.4A Output: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005 +A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA20	Input: 100-240Vac, 50-60Hz, 1.4A Output: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA19	Input:100-240Vac, 50-60Hz, 1.4A Output: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA15	Input:100-240Vac, 50-60Hz, 1.4A Output: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL

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(Alternate)	Interchangeable	Interchangeable	Ouput: 15Vdc, min. 3A Altitude: min. 3048m, Tma: min. 35°C	IEC 60950-1:2005 +A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body) UL
Adapter for rating 19.5Vdc, 3.33A (Optional)	Acbel / hp	TPN-AA06	Input: 100-240Vac, 1.7A, 50-60Hz Output: 19.5Vdc, 3.33A Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005 +A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA16	Input:100-240Vac, 1.7A, 50-60Hz Output: 19.5Vdc, 3.33A Altitude: 5000m, Tma: 35°C	IEC 60950-1:2005 +A1+A2IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA17	Input: 100-240Vac, 1.7A, 50-60Hz Output: 19.5Vdc, 3.33A Altitude: 5000m, Tma: 35°C	IEC 60950-1:2005 +A1+A2IEC 62368-1: 2014 UL 62368-1, 2nd Edition,2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA16	Input: 100-240Vac, 1.7A, 50-60Hz Output: 19.5Vdc, 3.33A Altitude: 5000m, Tma: 35°C	IEC 60950-1:2005 +A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA17	Input: 100-240Vac, 1.7A, 50-60Hz Output: 19.5Vdc, 3.33A Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA17	Input: 100-240Vac, 1.7A, 50-60Hz Output: 19.5Vdc, 3.33A Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14,2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Interchangeable	Interchangeable	Output: 19.5Vdc, min. 3.33A Altitude: min. 3048m, Tma: min. 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body) UL

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Certificado de Conformidade

Certificate of Conformity

Certificado/Certificate: **UL-BR 23.1286**

Emissão/Issue
28 de julho de 2023
July 28, 2023

Revisão/Review: **08**

Validade/Expiration
27 de julho de 2026
July 27, 2026

Adapter for rating 20Vdc, 3.25A (Optional)	Chicony Power Technology Co., Ltd. / hp	TPN-CA21	Input: 100-240Vac, 50-60Hz, 1.6A Output: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA20	Input: 100-240Vac, 50-60Hz, 1.7A Output: DC 5V, 3A; 9V,3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Honor / hp	TPN-HA01	Input: 100-240Vac, 50-60Hz, 1.6A Output: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA23	Input: 100-240Vac, 50-60Hz, 1.6A Output: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA12	Input: 100-240Vac, 50-60Hz, 1.6A Output: DC 5V, 3A; 9V,3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA10	Input: 100-240Vac, 50-60Hz, 1.6A Output: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005 +A1+A2IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Interchangeable	Interchangeable	Ouput: 20Vdc, min. 3.25A Altitude: min. 3048m, Tma: min. 35°C	IEC 60950-1:2005 +A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition,2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body) UL
Battery pack (Li-ion type)	Zhuhai CosMX	HSTNN-OB2X	42.75 Wh, 11.4Vdc, Rated Capacity 3600mAh	IEC 62368-1:2014 IEC 62133-2:2017 UL 2054, 2nd Edition, 2011-09-14 UL 62368-1, 2nd Edition, 2014-12-01 CAN /CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL

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(Alternate)	Dynapack	TPN-DB0Y	42.75 Wh 11.4Vdc, Rated Capacity 3600mAh	IEC 62368-1: 2014 IEC 62133-2:2017 UL 2054, 2nd Edition, 2011-09-14 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
(Alternate)	Simplo	TPN-IB0K	42.75 Wh 11.4Vdc, Rated Capacity 3600mAh	IEC 62368-1: 2014 IEC 62133-2:2017 UL 2054, 2nd Edition, 2011-09-14 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
(Alternate)	Simplo	TPN-IB0L	42.75 Wh 11.4Vdc, Rated Capacity 3600mAh	IEC 62368-1: 2014 IEC 62133-2:2017 UL 2054, 2nd Edition, 2011-09-14 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSAC22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
(Alternate)	Dynapack	TPN-DB0L	51.3 Wh 11.58Vdc, Rated Capacity 4249mAh	IEC 62368-1:2014 IEC 62133-2:2017 UL 2054, 2nd Edition, 2011- 09-14 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
(Alternate)	Simplo	TPN-IB0A	51.3 Wh 11.58Vdc, Rated Capacity 4249mAh	IEC 62368-1:2014, IEC 62133-2:2017, UL 2054, 2nd Edition, 2011-09-14 UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14,2nd Edition,2014-12	CB by UL UL
Panel (LED backlight)	AUO	B140HAK03.5	14-inch TFTLCD, LED backlight	--	Tested in appliance
(Alternate)	Interchangeable	Interchangeable	14-inch TFTLCD, LED backlight	--	Tested in appliance
DC Fan	Kunshan Pindai Electrical Co.,Ltd	PB8505S05HS2	5Vdc, max. 500mA, min. 3.0CFM	--	Tested in appliance
(Alternate)	Kunshan Pindai Electrical Co.,Ltd	BA005ASMSF21 00TN	5Vdc, max. 500mA, min. 3.0CFM	--	Tested in appliance
(Alternate)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD	EG70040S1-C130-S9A	5Vdc, max. 500mA, min. 3.4CFM	--	Tested in appliance
(Alternate)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD	EG50040S1-CQ90-S9A	5Vdc, max. 500mA, min. 3.4CFM	--	Tested in appliance
(Alternate)	DELTA	NS85C05-20E13	5Vdc, max. 500mA,	--	Tested in appliance

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	ELECTRONICS ,INC.		min. 4.01CFM		
(Alternate)	DELTA ELECTRONICS ,INC.	NS85C05-21C03	5Vdc, max. 500mA, min. 4.01CFM	--	Tested in appliance
Power distribution switch (for HDMI port)	DIODES INC	AP2331, followed by FJ, SA or W, maybe followed by additional letters and/or numbers	Input Voltage: 2.7 to 5.5 Vdc, Output Continuous Rating: 0.2A, Output Current Limit: 0.5	IEC 60950-1: 2005 +A1+A2 IEC 62368-1: 2014 UL 2367	CB by TUV UL
(Alternate)	Global Mixedmode Technology Inc.	G5250Q1T73U	Input Voltage: 2.7 to 5.5 Vdc, Output Continuous Rating: 0.2A Output Current Limit: 0.5A	IEC 60950-1: 2005+A1+A2UL 2367	CB by TUV UL
(Alternate)	Polytronics Technology Corp.	G524B series	2.7-5.5 Vdc, 2.1A	IEC 60950-1: 2005+A1+A2 UL 2367	CB by UL UL
(Alternate)	EXCELLIANCE MOS CORPORATIO N	EM5203AJ-20	2.5 to 5.5 Vdc, Output continuous rating: 2.0A. Ouput current: 4A	IEC 60950-1: 2005+ A1+A2IEC 62368-1: 2014 UL 2367	CB by UL UL
RTC Battery	Jhih Hong Technology Co., Ltd.	CR2032	Max. abnormal charging current 10mA	UL 1642	UL (MH48406)
(Alternate)	DOUBLE BEST CO LTD	CR2032	Max. abnormal charging current 10mA	UL 1642	UL (MH46388)
(Alternate)	Vic-Dawn Entreprise Co., Ltd	CR2032	Max. abnormal charging current 10mA	UL 1642	UL (MH20550)
(Alternate)	Interchangeable	Interchangeable	Max. abnormal charging current 10mA	UL 1642	UL
Speakers (Two provided)	Interchangeable	Interchangeable	Each rated 4 +15% ohm, 2.5W max.	--	Tested in appliance
Enclosure of Speakers	Interchangeable	Interchangeable	Min. V-1	UL 94	UL
SSD (Optional)	Interchangeable	Interchangeable	3.3Vdc or 5Vdc, optional	IEC 60950-1:2005 +A1 +A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body) UL
- Internal plastic frame	Interchangeable	Interchangeable	Min. V-2	UL 94	UL
Bezel	Interchangeable	Interchangeable	Min. V-1	UL 94	UL
Plastic Enclosure (Bottom case) (Optional)	LG CHEM LTD	LUPOY ER-2253F(#) (#) Maybe followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E	V-0, min. 0.8mm thickness, 80°C	UL 94 UL 746C	UL (E67171)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	GXV-35(cc)U(#) (#) – Suffix optional (cc) 10through 30	V-0, min. 0.75mm thickness, 80°C	UL 94 UL 746C	UL (E244324)
Plastic Enclosure (for top cover enclosure, C cover)	LG CHEM LTD	LUPOY GN-5151RF(#) (#)may be followed by optional suffix letter from A-Z incl., except F, and except Grades	V-0, min. 1.0mm thickness, 60°C	UL 94 UL 746C	UL (E67171)

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		AF302G, HT700B, XR401B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X			
(Alternate)	LG CHEM LTD	Lupoy: GN-5101RF(#)(#) – Maybe followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D,XR407E, HF380X,XR404E, XR404-G, XR404-P and LUMILOY GN2108FI.	V-0, min. 0.75mm thickness, 60°C	UL 94 UL 746C	UL (E67171)
(Alternate)	LG CHEM LTD	LUPOY ER-5001RF(#), (#) - Maybe followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E.	V-0, min. 1.0mm thickness, 60°C	UL 94 UL 746C	UL (E67171)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-3713B(#), (#) - Suffix optional	V-0, min. 1.0mm thickness, 60°C	UL 94 UL 746C	UL (E244324) UL (E98529)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD or TEIJIN LIMITED RESIN AND PLASTIC	TN-3715B(n1), (#),TN-3745B(#),TN- 7400B(#) - Suffix optional, (n1) May be suffixed with any letters except Z. TN3715BZ(#)	V-0, min. 1.2mm thickness, 60°C	UL 94 UL 746C	UL (E244324) UL (E98529)

Anexo 11 – Lista de componentes (modelo HSN-Q33C-4)

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
Adapter for rating 19.5Vdc, 2.31A (Optional)	Acbel / hp	TPN-AA05	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA14	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL

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(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA15	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA15	I/P: 100-240 Vac, 1.1 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA16	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA22	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV
(Alternate)	Interchangeable	Interchangeable	O/P: 19.5 Vdc, 2.31A min. altitude: 3048 m min., Tma: 35°C min.	IEC 60950-1: 2005+A1+A2 IEC 623681:2014	CB (issued by National Certification Body)
Adapter for rating 15Vdc, 3A (Optional)	Acbel / hp	TPN-AA07	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL

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(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA20	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA19	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A Altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA15	I/P: 100-240 Vac, 1.4 A Max., 50-60 Hz O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Interchangeable	Interchangeable	O/P: 15 Vdc, 3 A max. Altitude: 3048 m min., Tma: 35°C min	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body) UL
Adapter for rating 19.5Vdc, 3.33A (Optional)	Acbel / hp	TPN-AA06	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA16	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A, 65 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL

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(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A, 65 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA16	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA17	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Interchangeable	Interchangeable	O/P: 19.5Vdc, 3.33A min. altitude: 3048 m min., Tma: 35°C min.	IEC 60950-1: 2005+A1+A2 IEC 623681: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body) UL
Adapter for rating 20Vdc, 3.25A (Optional)	Chicony Power Technology Co., Ltd. / hp	TPN-CA21	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA20	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL

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(Alternate)	Honor / hp	TPN-HA01	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA23	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA12	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma:35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
Adapter for rating 20Vdc, 3.25A (Optional)	Chicony Power Technology Co., Ltd. / hp	TPN-CA10	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV UL
(Alternate)	Interchangeable	Interchangeable	O/P: 20 Vdc, 3.25A max. Altitude: 3048 m min., Tma: 35°C min	IEC 60950-1: 2005+A1+A2 IEC 623681: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body) UL
Battery pack (Li-ion type)	Zhuhai CosMX	HSTNN-OB2X	11.4Vdc, 42.75Wh, 3600mAh	IEC 62368-1:2014 (ed.2) IEC 62133-2: 2017, UL 2054 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL

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Alternate)	Dynapack	TPN-DB0Y	11.4Vdc, 42.75Wh, 3600mAh	IEC 62368-1: 2014 (ed.2) IEC 62133-2: 2017 UL 2054 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
Alternate)	Simplo	TPN-IB0K	11.4Vdc, 42.75Wh, 3600mAh	IEC 62368-1: 2014 (ed.2) IEC 62133-2: 2017 UL 2054 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
Alternate)	Simplo	TPN-IB0L	11.4Vdc, 42.75Wh, 3600mAh	IEC 62368-1: 2014 (ed.2) IEC 62133-2: 2017, UL 2054 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
Alternate)	Dynapack	TPN-DB0L	11.58 Vdc, 51.3 Wh, 4249 mAh	IEC 62368-1:2014 (ed.2) IEC 62133-2: 2017, UL 2054 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
Alternate)	Simplo	TPN-IB0A	11.58 Vdc, 51.3 Wh, 4249 mAh	IEC 62368-1: 2014 (ed.2) IEC 62133-2: 2017, UL 2054 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
Panel (LED backlight)	AUO	B140HAK03.5	14 inch TFTLCD, LED backlight	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	Interchangeable	Interchangeable	14 inch TFTLCD, LED backlight	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
DC Fan DIS	Kunshan Pindai Electrical Co.,Ltd	PB8506F05HS2	5 Vdc, max:500mA, min:4.15CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	DELTA ELECTRONICS,I NC.	ND85C21-20E14	5 Vdc, max:500mA, min:4.24CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance

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(Alternate)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD	EG5005S01- CG90-S9A	5 Vdc, max:500mA, min:4.3CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
DC Fan UMA	Kunshan Pindai Electrical Co.,Ltd	PB8505S05HS2	5 Vdc, max:500mA, min:3.0CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	Kunshan Pindai Electrical Co.,Ltd	BA005ASMSF210 0TN	5 Vdc, max:500mA, min:3.0CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD	EG70040S1- C130-S9A	5 Vdc, max:500mA, min:3.4CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD	EG50040S1- CQ90-S9A	5 Vdc, max:500mA, min:3.4CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	DELTA ELECTRONICS, INC.	NS85C05-20E13	5 Vdc, max:500mA, min:4.01CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	DELTA ELECTRONICS,I NC.	NS85C05-21C03	5 Vdc, max:500mA, min:4.01CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
Power distribution switch (for USB 3.0 and type C ports)	Texas Instruments Incorporated	TPS65992 (for S Variant: SN2010019RSMR SN2011036, SN2101009RSMR SN2101017RSMR SN2011054RSMR SN2101021RSMR and for D-Variant: SN2010020RJKR SN2011031, SN2011032, SN2011033, SN2011053RJKR, SN2101018RJKR, SN2101010RJKR)	Input Voltage: 4.9 - 5.5 Vdc Output Current Limit: VBUS: 1.36 - 3.78A PA_CC1/ PA_CC2*: 0.47 - 0.66A	IEC 62368-1: 2014 UL 2367	CB by UL UL
(Alternate)	Global Mixedmode Technology Inc. (GMT)	G517HX1X2X3X 4 (X1=1, 2, 3, or 4 X2=T1, TB, TO, TP or P8; X3=1, 2 or 3 X4=U or D)	Input Voltage: 2.7-5.5Vdc, Output Continuous Rating: 2.6 A Output Current Limit: 2.7-3.9 A	IEC 60950-1: 2005+A1+A2 UL 2367	CB by TUV, UL
(Alternate)	Global Mixedmode Technology Inc. (GMT)	G517B; followed by 1, 2, 3, or 4; followed by T1, TB, TO, TP, U5 or TM; followed by 1, 2, or 3; followed by U or D,G517BX1X2X3X4 X1=1, 2, 3, or 4 X2=T7, T1, TB, TO TP, KF, U5 or TM X3=1,2 or 3 X4=U or D	2.7-5.5 Vdc, Cont. Current: 0.2A, Prot. Current: 0.3 to 0.5A	UL 2367 (First Edition) IEC 60950-1 (ed.2), IEC 60950-1 (ed.2);am1, IEC 60950-1 (ed.2);am2	CB by TUV, UL
(Alternate)	TEXAS INSTRUMENTS INC	TPS2546	4.0-5.5Vdc, Output Continuous rating: 2.5A, Output current Limit: 3.1A	IEC 609501 (ed.2); am2 IEC 62368-1: 2014; UL 2367	CB by UL, UL
(Alternate)	DIODES INC	AP22804AW5-7	Input Voltage: 2.5 to 5.5 Vdc, Output Continuous Rating: 2.5A,	IEC 60950-1: 2005+A1+A2 UL 2367	CB by UL, UL

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			Output Current Limit: 3.3 A		
(Alternate)	EXCELLIANCE MOS CORPORATIO	EM5213AJ-25	Input Voltage: 2.5 to 5.5 Vdc, Output Continuous Rating: 2.5A, Output Current Limit:2.5A	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014; UL 2367	CB by TUV, UL
(Alternate)	ANPEC	APL3553, APL3555	Input Voltage: 2.7 to 5.5 Vdc Output Continuous Rating: 2.0 A for Models APL3555 followed by A or B, followed by B, followed by I, followed by -, followed by TR, followed by G Models APL3553 followed by A, B, E, F, I or J followed by B, C or X followed by I, followed by -, followed by TR, followed by G 1.0 A for Models APL3555 followed by C or D, followed by B, followed by I, followed by -, followed by TR, followed by G Models APL3553 followed by C, D, G or H, followed by B, C or X, followed by I, followed by -, followed by TR, followed by G	IEC 609501 (ed.2); am2 IEC 62368-1:2014; UL 2367	CB by UL, UL
(Alternate)	NXP Semiconductor Taiwan Ltd.	NX5P3290AUK Z, NX5P3363UK	4.0-5.5Vdc, Output current limit: 3.3A	IEC 609501 (ed.2); am2 IEC 62368-1: 2014; UL 2367	CB by UL, UL
(Alternate)	SILERGY TECHNOLOGY (TAIWAN) INC	SY6863B4ABC	2.5 Vdc to 5.5 Vdc, Cont. Current: 0.1-3A, Prot. Current: 0.3-5A	IEC 609501 (ed.2); am2 IEC 62368-1: 2014; UL 2367	CB by UL, UL
(Alternate)	DIODES INC	AP22615, followed by A or B, followed by WT, WU, or ST, followed by 7, may be followed by additional alphanumerics	Input Voltage/Output Continuous Rating: 3.0 - 4.0 Vdc, Iout = 1A to 1.5A 4.0 - 5.5 Vdc, Iout = 1A to 3A Output Current Limit: 3.0 - 5.5 Vdc, at 1.35A - 3.6A	UL 2367	UL
(Alternate)	DIODES INC	PI5USB2546ZHE X, PI5USB2546ZHD EX	Input Voltage: 4.5-5.5 Vdc Continuous Rating: 30 mA to	IEC 62368-1: 2014 (2nd),	CB by UL, UL

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			2.5 A Current Limit: 100 mA to 3.18 A	UL 2367	
(Alternate)	TEXAS INSTRUMENTS INC	TPS2547	Input Voltage: 4.5-5.5 Vdc Output Continuous Rating: 2.5 A Output Current Limit: 3.1 A	IEC 62368-1: 2014 (2nd), UL 2367	CB by UL, UL
(Alternate)	Guangdong Cellwise Microelectronics Co., Ltd.	CW3042AAAD, CW3042AAAE, CW3046AAAQ, CW3048AAAQ, CW3048BAAQ and HP3048BAAQ.	Input Voltage: 4.5 to 5.5 Vdc Output Continuous Rating: Maximum 2.8 A Current Limit Rating: Maximum 3.17 A Ambient: -40 to 85°C	IEC 62368-1: 2014 (2nd), UL 2367	CB by UL, UL
(Alternate)	ALPHA & OMEGA SEMICONDUCTO R INC	AOZ1358LI-01	Input Voltage: 3.8 - 5.5 Vdc Output Continuous Rating: 0.12 - 3.0 A Output Current Limit: 0.21 - 3.531 A Ambient: -40 to 85°C	IEC 62368-1: 2014 (2nd) UL 62368-1, CAN/CSA C22.2 No. 62368-1-14	CB by UL, UL
Power distribution switch (for HDMI port)	DIODES INC	AP2331, followed by FJ, SA or W, may be followed by additional letters and/or numbers	Input Voltage: 2.7 to 5.5 Vdc, Output Continuous Rating: 0.2A, Output Current Limit: 0.5	IEC 609501 (ed.2); am2 IEC 62368-1: 2014; UL 2367	CB by TUV, UL
(Alternate)	Global Mixedmode Technology Inc.	G5250Q1T73U	Input Voltage: 2.7 to 5.5 Vdc, Output Continuous Rating: 0.2A Output Current Limit: 0.5A	IEC 609501 (ed.2); am2 IEC 62368-1: 2014; UL 2367	CB by TUV, UL
(Alternate)	Polytronics Technology Corp.	G524B series	2.7-5.5 Vdc, 2.1A	IEC 609501 (ed.2); am2 IEC 62368-1:2014; UL 2367	TUV RH, UL (E232223)
(Alternate)	EXCELLIANCE MOS CORPORATION	EM5203AJ-20	2.5 to 5.5 Vdc, Output continuous rating: 2.0A. Ouput current: 4A	IEC 609501 (ed.2); am2 IEC 62368-1: 2014; UL 2367	UL (E468218)
RTC Battery	Jhih Hong Technology Co., Ltd.	CR2032	Max. abnormal charging current 10mA, max. abnormal charging voltage 5Vdc	UL 1642	UL (MH48406)
(Alternate)	DOUBLE BEST CO LTD	CR2032	Max. abnormal charging current 10mA, max. abnormal charging voltage 5Vdc	UL 1642	UL (MH46388)
(Alternate)	Vic-Dawn Entreprise Co., Ltd	CR2032	Max. abnormal charging current 10Ma.	UL 1642	UL (MH20550)
(Alternate)	Interchangeable	Interchangeable	Max. abnormal charging current 10mA, max. abnormal charging voltage 5Vdc	UL 1642	UL
SSD (optioanl)	Interchangeable	Interchangeable	3.3Vdc or 5Vdc, optional.	IEC 609501: 2005+A1+A2, CAN/CSA C22.2 No.	CB by NCB, cUL, UL

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				60950-1, UL 60950-1	
Metal Enclosure (Bottom case) (Optional)	Interchangeable	Interchangeable	Metal , 0.65 mm thickness min	--	--
- Internal plastic frame	Interchangeable	Interchangeable	Min. V-2	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL
Bezel	Interchangeable	Interchangeable	Min. V-1	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL
Plastic Enclosure (Bottom case) (Optional)	LG CHEM LTD	LUPOY ER- 2253F(#) (#) May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E	V-0, min. thickness 0.8 mm, 80°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	GXV-35(cc)U(#) (#) – Suffix optional (cc) 10through 30	V-0, min. thickness 0.75 mm, 80°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E244324)
Plastic Enclosure (for top cover enclosure, C cover) (Optional)	LG CHEM LTD	LUPOY GN- 5151RF(#) (#)may be followed by optional suffix letter from A-Z incl., except F, and except Grades AF302G, HT700B, XR401B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X	V-0, min. thickness 1.0 mm, 60°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	LG CHEM LTD	Lupoy: GN- 5101RF(#) (#) – May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X, XR404E, XR404- G, XR404-P and LUMILOY GN2108FI.	V-0, min. thickness 0.75 mm, 60°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	LG CHEM LTD	LUPOY ER-5001RF(#), (#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E.	V-0, min. thickness 1.0 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-3713B(#), (#) - Suffix optional	V-0, min. thickness 1.0 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E244324) (E98529)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD or	TN-3715B(n1), (#),TN-3745B(#),TN-7400B(#) - Suffix optional, (n1) May be	V-0, min. thickness 1.2 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E244324) (E98529)

	TEIJIN LIMITED RESIN AND PLASTIC	suffixed with any letters except Z. TN3715BZ(#)			
Metal Enclosure (for top cover enclosure, C cover) (Optional)	Interchangeable	Interchangeable	Metal, min. 0.65mm thickness	--	--
Internal plastic frame Rear side (Near hinge)	LG CHEM LTD	LUPOY GN- 5151RF(#)(#)may be followed by optional suffix letter from A-Z incl., except F, and except Grades AF302G, HT700B, XR401B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X	V-0, min. thickness 1.0 mm, 60°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	LG CHEM LTD	Lupoy: GN- 5101RF(#)(#) – May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X, XR404E, XR404- G, XR404-P and LUMILOY GN2108FI.	V-0, min. thickness 0.75 mm, 60°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	LG CHEM LTD	LUPOY ER-5001RF(#),(#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E.	V-0, min. thickness 1.0 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-3713B(#), (#) - Suffix optional	V-0, min. thickness 1.0 mm, 60 °C	UL 94 (Sixth Edition) UL 746C (Seventh Edition)	UL (E244324) (E98529)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD or TEIJIN LIMITED RESIN AND PLASTIC	TN-3715B(n1), (#),TN-3745B(#),TN- 7400B(#) - Suffix optional, (n1) May be suffixed with any letters except Z. TN3715BZ(#)	V-0, min. thickness 1.2 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E244324) (E98529)
IR Camera (optional)	Chicony	CKFJH232100433 0LH	SELV, Class III	Tested in appliance	--
(Alternate)	Luxvisions	9BF112N3, 0BF121N3	SELV, Class III	Tested in appliance	--
(Alternate)	TFC	YHSD, YHSC, YHSL	SELV, Class III	Tested in appliance	--

Certificado de Conformidade

Certificate of Conformity

Certificado/Certificate: **UL-BR 23.1286**

Emissão/Issue
28 de julho de 2023
July 28, 2023

Revisão/Review: **08**

Validade/Expiration
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July 27, 2026

Anexo 11 – Lista de componentes (modelo HSN-Q32C-4)

Object/part No.	anufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
Adapter for rating 19.5Vdc, 2.31A (Optional)	Acbel / hp	TPN-AA05	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000m, Tma: 35°C	IEC 60950-1:2005+ A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA14	I/P: 100-240 Vac, 1.4 A, 50- 60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA15	I/P: 100-240Vac, 1.4 A, 50- 60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA15	I/P: 100-240 Vac, 1.1 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA16	I/P: 100-240Vac, 1.4 A, 50- 60 Hz O/P: 19.5 Vdc, 2.31ª altitude: 5000 m, Tma: 35°C	IEC 60950-1:2005 +A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA22	I/P: 100-240Vac, 1.4 A, 50- 60 Hz O/P: 19.5 Vdc, 2.31ª altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	Interchangeable	Interchangeable	O/P: 19.5 Vdc, 2.31A min. altitude: 3048 m min., Tma: 35°C min.	IEC 60950-1:2005+ A1+A2 IEC 623681 :2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body), UL

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Certificado de Conformidade

Certificate of Conformity

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Adapter for rating 15Vdc, 3A (Optional)	Acbel / hp	TPN-AA07	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA20	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA19	I/P: 100-240Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A Altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA15	I/P: 100-240Vac, 1.4 A Max., 50-60 Hz O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	Interchangeable	Interchangeable	O/P: 15 Vdc, 3A max. Altitude: 3048 m min., Tma: 35°C min	IEC 60950-1:2005 +A1+A2 IEC 623681 :2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body), UL
Adapter for rating 19.5Vdc, 3.33A (Optional)	Acbel / hp	TPN-AA06	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA16	I/P: 100-240Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A, 65 W altitude: 5000 m, Tma: 35°C	IEC 60950-1:2005+ A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL

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(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA17	I/P: 100-240Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A, 65 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA16	I/P: 100-240Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14,2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA17	I/P: 100-240Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14,2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	Interchangeable	Interchangeable	O/P: 19.5Vdc, 3.33A min. altitude: 3048 m min., Tma: 35°C min.	IEC 60950-1: 2005+A1+A2 IEC 623681:2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body), UL
Adapter for rating 20Vdc, 3.25A (Optional)	Chicony Power Technology Co., Ltd. / hp	TPN-CA21	I/P: 100-240Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA20	I/P: 100-240Vac, 50-60 Hz, 1.7 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	Honor / hp	TPN-HA01	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by UL, UL

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(Alternate)	Lite-On Technology Corp / hp	TPN-LA23	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by UL, UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA12	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by UL, UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA10	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV, UL
(Alternate)	Interchangeable	Interchangeable	O/P: 20 Vdc, 3.25A max. Altitude: 3048 m min., Tma: 35°C min	IEC 60950-1:2005 +A1+A2 IEC 623681 :2014 UL 62368-1, 2nd Edition, 2014-12-01; CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body), UL
Battery pack (Li-ion type)	Zhuhai CosMX	HSTNN-OB2X	42.75 Wh, 11.4Vdc, Rated Capacity 3600mAh	IEC 62368-1:2014 (ed.2), IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, 2014-12-01, CAN/ CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL, UL
(Alternate)	Dynapack	TPN-DB0Y	42.75 Wh 11.4Vdc, Rated Capacity 3600mAh	IEC 62368-1:2014 (ed.2), IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, 2014-12-01, CAN /CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL, UL
(Alternate)	Simplo	TPN-IB0K	42.75 Wh 11.4Vdc, Rated Capacity 3600mAh	IEC 62368-1:2014 (ed.2), IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL, UL

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(Alternate)	Simplo	TPN-IB0L	42.75 Wh 11.4Vdc, Rated Capacity 3600mAh	IEC 62368-1:2014 (ed.2), IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, 2014-12-01, CAN /CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL, UL
(Alternate)	Dynapack	TPN-DB0L	51.3 Wh 11.58Vdc, Rated Capacity 4249mAh	IEC 62368-1:2014 (ed.2), IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, 2014-12-01,CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL, UL
(Alternate)	Simplo	TPN-IB0A	51.3 Wh 11.58Vdc, Rated Capacity 4249mAh	IEC 62368-1:2014 (ed.2), IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, 2014-12-01, CAN /CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL, UL
Panel (LED backlight)	AUO	B140HAK03.5	14 inch TFTLCD, LED backlight	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	Interchangeable	Interchangeable	14 inch TFTLCD, LED backlight	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
DC Fan DIS	Kunshan Pindai Electrical Co.,Ltd	PB8506F05HS2	5 Vdc, max:500mA, min:4.15CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	DELTA ELECTRONICS,INC.	ND85C21-20E14	5 Vdc, max:500mA, min:4.24CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD	EG5005S01-CG90-S9A	5 Vdc, max:500mA, min:4.3CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
PTC for camera Module, Panel, Webcam, Keyboard, Click Pad and Finger Print	Polytronics Technology Corp.	SPR-P110($),($) and (&) May be followed by symbol "-" and up to two alphanumeric characters denoting a resistance range or customer code, not related to construction or any other rating.	6Vdc, Ih=1.1A, It=1.8A, CA3	IEC 60730-1:1999, UL1434	TUV (R50099121) UL (E201431)
(Alternate)	Polytronics Technology Corp.	SPR-F050	6Vdc, Ih=0.5A, It=1.0A, CA3	IEC 60730-1:1999, UL1434	UL (E201431)
(Alternate)	CYG WAYON CIRCUIT PROTECTION CO LTD	LP-ISML150* (*May be followed by H or (where "H" is Halogen free and "F" is Lead free))	8Vdc, Ih=1.5A, It=3.0A, CA3	IEC 60730-1:1999, UL1434	TUV (R50318402) UL (E202125)
RTC Battery	Jhih Hong Technology Co., Ltd.	CR2032	Max. abnormal charging current 10mA, max.abnormal	UL 1642	UL (MH48406)

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			charging voltage 5Vdc		
(Alternate)	DOUBLE BEST CO LTD	CR2032	Max. abnormal charging current 10mA, max. abnormal charging voltage 5Vdc	UL 1642	UL (MH46388)
(Alternate)	Vic-Dawn Entreprise Co., Ltd	CR2032	Max. abnormal charging current 10Ma.	UL 1642	UL (MH20550)
(Alternate)	Interchangeable	Interchangeable	Max. abnormal charging current 10mA, max. abnormal charging voltage 5Vdc	UL 1642	UL
Speakers (Two provided)	Interchangeable	Interchangeable	Each rated 4 +15% ohm, 2.5W max.	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
Enclosure of speaker	Interchangeable	Interchangeable	Min. V-1	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL
SSD (optional)	Interchangeable	Interchangeable	3.3Vdc or 5Vdc, optional.	IEC 609501: 2005+A1+A2,CAN/ CSA C22.2 No. 60950-1, UL 60950-1	CB by NCB, cUL, UL
PCB	CHUAN YI COMPUTER (SHENZHEN) CO LTD	CM-4	V-0, 130°C	UL 796 (Eleventh Edition)	UL (E162264)
(Alternate)	GOLD CIRCUIT ELECTRONICS LTD	D-V0A-2, H	V-0, 130°C	UL 796 (Eleventh Edition)	UL (E82152)
(Alternate)	HANNSTAR BOARD CORP	MV-4	V-0, 130°C	UL 796 (Eleventh Edition)	UL (E89382)
(Alternate)	TAIWAN PRINT CIRCUIT BOARD TECHVEST CO LTD	MV-0	V-0, 130°C	UL 796 (Eleventh Edition)	UL (E88441)
(Alternate)	Interchangeable	Interchangeable	V-1 min., 105 degree C min	UL 796 (Eleventh Edition)	UL
Metal Enclosure (Bottom case) (Optional)	Interchangeable	Interchangeable	Metal , 0.65 mm thickness min	--	--
Metal Enclosure (for top cover enclosure, C cover) (Optional)	Interchangeable	Interchangeable	Metal, min. 0.65mm thickness	--	--
Internal plastic frame Rear side (Near hinge)	LG CHEM LTD	LUPOY GN-5151RF(#) (#)may be followed by optional suffix letter from A-Z incl., except F, and except Grades AF302G, HT700B, XR401B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X	V-0, min. thickness 1.0 mm, 60°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	LG CHEM LTD	Lupoy: GN-5101RF(#) (#) – May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A,	V-0, min. thickness 0.75 mm, 60°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)

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		AF303G, AF303S, XR404T, XR407D, XR407E, HF380X, XR404E, XR404-G, XR404-P and LUMILOY GN2108FI.			
(Alternate)	LG CHEM LTD	LUPOY ER-5001RF (#), (#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E.	V-0, min. thickness 1.0 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh	UL (E67171)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-3713B(#), (#) - Suffix optional	V-0, min. thickness 1.0 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E244324) (E98529)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD or TEIJIN LIMITED RESIN AND PLASTIC	TN-3715B(n1), (#),TN- 3745B(#),TN-7400B(#) - Suffix optional, (n1) May be suffixed with any letters except Z. TN3715BZ(#)	V-0, min. thickness 1.2 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E244324) (E98529)

Anexo 12 – Lista de componentes (modelo HSN-Q34C-4)

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
Adapter for rating 19.5Vdc, 2.31A (Optional)	Acbel / hp	TPN-AA05	Input: 100-240Vac, 1.4A, 50-60Hz Output: 19.5Vdc, 2.31A Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+ A1+A IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA14	Input: 100-240Vac, 1.4A, 50-60Hz Output: 19.5Vdc, 2.31A Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL

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(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA15	Input: 100-240Vac, 1.4A, 50-60Hz Output: 19.5Vdc, 2.31A Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA15	Input: 100-240Vac, 1.1A, 50-60Hz Output: 19.5Vdc, 2.31A Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA16	Input: 100-240Vac, 1.4A, 50-60Hz Output: 19.5Vdc, 2.31A Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA22	Input: 100-240Vac, 1.4A, 50-60Hz Output: 19.5Vdc, 2.31A Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Interchangeable	Interchangeable	Output: 19.5Vdc, min. 2.31A Altitude: min. 3048m, Tma: min. 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body) UL

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Certificado de Conformidade

Certificate of Conformity

Certificado/Certificate: **UL-BR 23.1286**

Emissão/Issue
28 de julho de 2023
July 28, 2023

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27 de julho de 2026
July 27, 2026

Adapter for rating 15Vdc, 3A (Optional)	Acbel / hp	TPN-AA07	Input: 100-240Vac, 50-60Hz, 1.4A Output: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA20	Input: 100-240Vac, 50-60Hz, 1.4A Output: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA19	Input: 100-240Vac, 50-60Hz, 1.4A Output: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA15	Input: 100-240Vac, 50-60Hz, 1.4A Output: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Interchangeable	Interchangeable	Ouput: 15Vdc, min. 3A Altitude: min. 3048m, Tma: min. 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body) UL

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Adapter for rating 19.5Vdc, 3.33A (Optional)	Acbel / hp	TPN-AA06	Input: 100-240Vac, 1.7A, 50-60Hz Output: 19.5Vdc, 3.33A Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA16	Input: 100-240Vac, 1.7A, 50-60Hz Output: 19.5Vdc, 3.33A Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA17	Input: 100-240Vac, 1.7A, 50-60Hz Output: 19.5Vdc, 3.33A Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA16	Input: 100-240Vac, 1.7A, 50-60Hz Output: 19.5Vdc, 3.33A Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA17	Input: 100-240Vac, 1.7A, 50-60Hz Output: 19.5Vdc, 3.33A Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA17	Input: 100-240Vac, 1.7A, 50-60Hz Output: 19.5Vdc, 3.33A Altitude: 5000m	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No.	CB by TUV UL

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(Alternate)	Interchangeable	Interchangeable	Output: 19.5Vdc, min. 3.33A Altitude: min. 3048m, Tma: min. 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body) UL
Adapter for rating 20Vdc, 3.25A (Optional)	Chicony Power Technology Co., Ltd. / hp	TPN-CA21	Input: 100-240Vac, 50-60Hz, 1.6A Output: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA20	Input: 100-240Vac, 50-60Hz, 1.7A Output: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Honor / hp	TPN-HA01	Input: 100-240Vac, 50-60Hz, 1.6A Output: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
(Alternate)	Lite-On Technology Corp/ hp	TPN-LA22	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1: 2018	CB by TUV, UL

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(Alternate)	Lite-On Technology Corp / hp	TPN-LA23	Input: 100-240Vac, 50-60Hz, 1.6A Output: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA12	Input: 100- 240Vac, 50-60Hz, 1.6A Output: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA10	Input: 100-240Vac, 50-60Hz, 1.6A Output: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. Altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Interchangeable	Interchangeable	Ouput: 20Vdc, min. 3.25A Altitude: min. 3048m, Tma: min. 35°C	IEC 60950-1: 2005+ A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body) UL
Battery pack (Li-ion type)	Zhuhai CosMX	HSTNN-OB2X	42.75 Wh, 11.4Vdc, Rated Capacity 3600mAh	IEC 62368-1: 2014 IEC 62133-2: 2017 UL 2054, 2nd Edition, 2011-09-14 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
(Alternate)	Dynapack	TPN-DB0Y	42.75 Wh 11.4Vdc, Rated Capacity 3600mAh	IEC 62368-1: 2014 IEC 62133-2: 2017 UL 2054, 2nd Edition, 2011-09-14 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
(Alternate)	Simplo	TPN-IB0K	42.75 Wh 11.4Vdc, Rated Capacity 3600mAh	IEC 62368-1:2014 IEC 62133-2:2017 UL 2054, 2nd Edition, 2011- 09-14 UL 62368-1, 2nd Edition, 2014- 12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition 2014-12	CB by UL UL

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(Alternate)	Simplo	TPN-IB0L	42.75 Wh 11.4Vdc, Rated Capacity 3600mAh	IEC 62368-1:2014 IEC 62133-2: 2017 UL 2054, 2nd Edition, 2011-09-14 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
(Alternate)	Dynapack	TPN-DB0L	51.3 Wh 11.58Vdc, Rated Capacity 4249mAh	IEC 62368-1: 2014 IEC 62133-2:2017 UL 2054, 2nd Edition, 2011-09-14 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSAC22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
(Alternate)	Simplo	TPN-IB0A	51.3 Wh 11.58Vdc, Rated Capacity 4249mAh	IEC 62368-1: 2014 IEC 62133-2: 2017 UL 2054, 2nd Edition, 2011-09-14 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
(Alternate)	Simplo	TPN-IB0P	42.75 Wh 11.4Vdc, Rated Capacity 3600mAh	IEC 62368-1:2014, IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition	CB by UL UL
(Alternate)	Zhuhai CosMX	HSTNN-OB3C	42.75 Wh, 11.4Vdc, Rated Capacity 3600mAh	IEC 62368-1:2018, UL 2054, UL 62368-1, 3rd Edition, CAN/CSA C22.2 No. 62368-1-19	CB by UL UL
(Alternate)	Dynapack	TPN-DB1J	42.75 Wh 11.4Vdc, Rated Capacity 3600mAh	IEC 62368-1:2018, IEC 62133-2: 2017/AM1:2021, UL 2054, UL 62368-1, 3rd Edition, CAN/CSA C22.2 No. 62368-1-19, 3rd Edition	CB by UL UL

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(Alternate)	LG Energy Solution, LTD.	HSTNN-LB9D	11.58Vdc, 51.3Wh, Rated: 4249mAh	IEC 62368-1:2018, IEC 62133-2: 2017/AM1:2021, UL 2054, UL 62368-1, 3rd Edition, CAN/CSA C22.2 No. 62368-1-19, 3rd Edition	CB by UL UL
(Alternate)	SUNWODA ELECTRONIC CO.,LTD.	HSTNN-WB0E	11.58V, Rated capacity: 4249mAh	IEC 62368-1:2018, IEC 62133-2: 2017/AM1:2021, UL 2054, UL 62368-1, 3rd Edition, CAN/CSA C22.2 No. 62368-1-19, 3rd Edition	CB by UL UL
Panel (LED backlight)	AUO	B140HAK03.5	14-inch TFTLCD, LED backlight	--	Tested in appliance
(Alternate)	Interchangeable	Interchangeable	14-inch TFTLCD, LED backlight	--	Tested in appliance
DC Fan	Kunshan Pindai Electrical Co.,Ltd	PB8505S05HS2	5Vdc, max. 500mA, min. 3.0CFM	--	Tested in appliance
(Alternate)	Kunshan Pindai Electrical Co.,Ltd	BA005ASMSF2100TN	5Vdc, max. 500mA, min. 3.0CFM	--	Tested in appliance
(Alternate)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO.,LTD	EG70040S1-C130- S9A	5Vdc, max. 500mA, min. 3.4CFM	--	Tested in appliance
(Alternate)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD	EG50040S1-CQ90-S9A	5Vdc, max. 500mA, min. 3.4CFM	--	Tested in appliance
(Alternate)	DELTA ELECTRONICS, INC.	NS85C05-20E13	5Vdc, max. 500mA, min. 4.01CFM	--	Tested in appliance
(Alternate)	DELTA ELECTRONICS, INC.	NS85C05-21C03	5Vdc, max. 500mA, min. 4.01CFM	--	Tested in appliance
Power	Texas	TPS65992 (for S	Input Voltage:	IEC 62368-1:	CB by UL

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distribution switch (for USB 3.0 and type C ports)	Instruments Incorporated	Variant: SN2010019RSMR, SN2011036, SN2101009RSMR, SN2101017RSMR, SN2011054RSMR, SN2101021RSMR and for D-Variant: SN2010020RJKR, SN2011031, SN2011032, SN2011033, SN2011053RJKR, SN2101018RJKR, SN2101010RJKR)	4.9 - 5.5 Vdc Output Current Limit: VBUS: 1.36 - 3.78A PA_CC1/ PA_CC2*: 0.47 - 0.66A	2014 UL 2367	UL
(Alternate)	Global Mixedmode Technology Inc. (GMT)	G517HX1X2X3X 4 (X1=1, 2, 3, or 4 X2=T1, TB, TO, TP or P8; X3=1, 2 or 3 X4=U or D)	Input Voltage: 2.7-5.5Vdc, Output Continuous Rating: 2.6 A Output Current Limit: 2.7-3.9 A	IEC 60950-1: 2005+A1+A2 UL 2367	CB by TUV UL
(Alternate)	Global Mixedmode Technology Inc. (GMT)	G517B; followed by 1, 2, 3, or 4; followed by T1, TB, TO, TP, U5 or TM; followed by 1, 2, or 3; followed by U or D , G517BX1X2X3 X4, X1=1, 2, 3, or 4, X2=T7, T1, TB, TO, TP, KF, U5 or TM, X3=1,2 or 3, X4=U or D	2.7-5.5 Vdc, Cont. Current: 0.2A, Prot. Current: 0.3 to 0.5A	IEC 60950-1: 2005+A1+A2 UL 2367	CB by TUV UL
(Alternate)	TEXAS INSTRUMENTS INC	TPS2546	4.0-5.5Vdc, Output Continuous rating: 2.5A, Output current Limit: 3.1A	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 2367	CB by UL UL
(Alternate)	DIODES INC	AP22804AW5-7	Input Voltage: 2.5 to 5.5 Vdc, Output Continuous Rating: 2.5A, Output Current Limit: 3.3 A	IEC 60950-1: 2005+A1+A2 UL 2367	CB by UL UL
(Alternate)	EXCELLIANCE MOS CORPORATIO	EM5213AJ-25	Input Voltage: 2.5 to 5.5 Vdc, Output Continuous Rating: 2.5A, Output Current Limit:2.5A	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 2367	CB by TUV UL

(Alternate)	ANPEC	APL3553, APL3555	Input Voltage: 2.7 to 5.5 Vdc Output Continuous Rating: 2.0 A for Models APL3555 followed by A or B, followed by B, followed by I, followed by -, followed by TR, followed by G Models APL3553 followed by A, B, E, F, I or J followed by B, C or X followed by I, followed by -, followed by TR, followed by G 1.0 A for Models APL3555 followed by C or D, followed by B, followed by I, followed by -, followed by TR, followed by G Models APL3553 followed by C, D, G or H, followed by B, C or X, followed by I, followed by -, followed by TR, followed by G	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 2367	CB by UL UL
(Alternate)	NXP Semiconductor Taiwan Ltd.	NX5P3290AUK Z, NX5P3363UK	4.0-5.5Vdc, Output current limit: 3.3A	IEC 62368-1: 2014 UL 2367	CB by UL UL
(Alternate)	SILERGY TECHNOLOGY (TAIWAN) INC	SY6863B4ABC	2.5 Vdc to 5.5 Vdc, Cont. Current: 0.1-3A, Prot. Current: 0.3-5A	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 2367	CB by UL UL
(Alternate)	DIODES INC	AP22615, followed by A or B, followed by WT, WU, or ST, followed by 7, may be followed by additional alphanumerics	Input Voltage/Output Continuous Rating: 3.0 - 4.0 Vdc, Iout = 1A to 1.5A 4.0 - 5.5 Vdc, Iout = 1A to 3A Output Current Limit:3.0 - 5.5 Vdc, at 1.35A - 3.6A	UL 2367	UL
(Alternate)	DIODES INC	PI5USB2546ZHEX , PI5USB2546ZH DEX	Input Voltage: 4.5-5.5 Vdc Continuous Rating: 30 mA to 2.5 A Current Limit: 100 mA to 3.18 A	IEC 62368-1: 2014 UL 2367	CB by UL UL

(Alternate)	TEXAS INSTRUMENTS INC	TPS2547	Input Voltage: 4.5-5.5 Vdc Output Continuous Rating: 2.5 A Output Current Limit: 3.1 A	IEC 62368-1: 2014 UL 2367	CB by UL UL
(Alternate)	Guangdong Cellwise Microelectronics Co., Ltd.	CW3042AAAD, CW3042AAAE, CW3046AAAQ, CW3048AAAQ, CW3048BAAQ and HP3048BAAQ.	Input Voltage: 4.5 to 5.5 Vdc Output Continuous Rating: Maximum 2.8 A Current Limit Rating: Maximum 3.17A Ambient: -40 to 85°C	IEC 62368-1: 2014 UL 2367	CB by UL UL
(Alternate)	ALPHA & OMEGA SEMICONDUCTOR INC	AOZ1358LI-01	Input Voltage: 3.8 - 5.5 Vdc Output Continuous Rating: 0.12 - 3.0 A Output Current Limit: 0.21 - 3.531 A Ambient: -40 to 85°C	IEC 62368-1:2014, UL 62368-1, CAN/CSA C22.2 No. 62368-1-14	CB by UL, UL
(Alternate)	Guangdong Cellwise Microelectronics Co., Ltd.	CW3048CAAQ	Input Voltage: VBUS_IN = 4.5 - 5.5 Vdc Output Continuous Rating: VBUS_OUT = 0.18 - 2.8 A Current Limit Rating: VBUS_OUT = 0.275 – 3.17 A Ambient: -40 to 85°C (Optional)	IEC 62368-1: 2018 UL 2367	CB by UL, UL (E485783)
(Alternate)	REALTEK SEMICONDUCTOR CORP	RTS5452X-XY, RTS5455X-XY, RTS5456X-XY, RTS5443X-XY, RTS5457X-XY (X, Y=A~Z, 0~9 or blank).	Input Voltage Range: 4.75Vdc to 5.5 Vdc; Protective Current Limit Rating: CC1/CC2=0.4 A	IEC 62368-1:2018: UL 62368-1: 2019	UL, CB by UL (DK- 130278-UL)
(Alternate)	Global Mixed- mode Technology Inc.	G518AX2X3X4X5	Input Voltage Range (Vdc): 2.7-5.5 Number of Outputs: 1 Operational Current Rating per output (A): 3A Overcurrent Protection Current Rating per output (A): 3.1 - 4.0A Maximum ambient temperature (°C): -30 to 70	IEC 62368-1:2014	UL, CB by TUV (JPTUV-099276)
Power distribution switch (for HDMI port)	DIODES INC	AP2331, followed by FJ, SA or W, may be followed by additional letters and/or numbers	Input Voltage: 2.7 to 5.5 Vdc, Output Continuous Rating: 0.2A, Output Current Limit: 0.5	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 2367	CB by TUV UL

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(Alternate)	Global Mixedmode Technology Inc.	G5250Q1T73U	Input Voltage: 2.7 to 5.5 Vdc, Output Continuous Rating: 0.2A Output Current Limit: 0.5A	IEC 60950-1: 2005+A1+A2 UL 2367	CB by TUV UL
(Alternate)	Polytronics Technology Corp.	G524B series	2.7-5.5 Vdc, 2.1A	IEC 60950-1: 2005+A1+A2 UL 2367	CB by UL UL
(Alternate)	EXCELLIANCE MOS CORPORATION	EM5203AJ-20	2.5 to 5.5 Vdc, Output continuous rating: 2.0A. Ouput current: 4A	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 2367	CB by UL UL
PTC (for Panel/CAM, Keyboard, Click pad, Finger print connectors)	Polytronics Technology Corp.	SPR-P110($),($) and (&) May be followed by symbol "-" and up to two alphanumeric characters denoting a resistance range or customer code, not related to construction	6Vdc, Ih=1.1A, It=1.8A, CA3	IEC 60730-1: 1999 UL 1434	TUV (R50099121) UL (E201431)
(Alternate)	Polytronics Technology Corp.	SPR-F050	6Vdc, Ih=0.5A, It=1.0A, CA3	IEC 60730-1: 1999 UL 1434	TUV (R 50099121) UL (E201431)
(Alternate)	CYG WAYON CIRCUIT PROTECTION CO LTD	LP-ISML150* (* May be followed by H or F. (where "H" is Halogen free and "F" is Lead free))	8Vdc, Ih=1.5A, It=3.0A, CA3	IEC 60730-1: 1999 UL 1434	TUV (R50318402) UL (E202125)
RTC Battery	Jhih Hong Technology Co., Ltd.	CR2032	Max. abnormal charging current 10mA	UL 1642	UL (MH48406)
(Alternate)	DOUBLE BEST CO LTD	CR2032	Max. abnormal charging current 10mA	UL 1642	UL (MH46388)
(Alternate)	Vic-Dawn Entreprise Co., Ltd	CR2032	Max. abnormal charging current 10mA	UL 1642	UL (MH20550)
(Alternate)	Interchangeable	Interchangeable	Max. abnormal charging current 10mA	UL 1642	UL
Speakers (Two provided)	Interchangeable	Interchangeable	Each rated 4 +15% ohm, 2.5W max.	--	Tested in appliance
Enclosure of Speakers	Interchangeable	Interchangeable	Min. V-1	UL 94	UL
SSD (Optional)	Interchangeable	Interchangeable	3.3Vdc or 5Vdc, optional	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body) UL

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PCB	CHUAN YI COMPUTER (SHENZHEN) CO LTD	CM-4	V-0, 130°C	UL 796	UL (E162264)
(Alternate)	HANNSTAR BOARD CORP	MV-6	V-0, 130°C	UL 796	UL (E89382)
(Alternate)	T-MAC TECHVEST PCB CO LTD	YAML	V-0, 130°C	UL 796	UL (E114139)
(Alternate)	Interchangeable	Interchangeable	Min. V-1, min. 105°C	UL 796	UL
Metal Enclosure (**Top/** Bottom case) (Optional)	Interchangeable	Interchangeable	Metal, min. 0.65mm thickness	--	--
- Internal plastic frame	Interchangeable	Interchangeable	Min. V-2	UL 94	UL
Bezel	Interchangeable	Interchangeable	Min. V-1	UL 94	UL
Plastic Enclosure (Bottom case) (Optional)	LG CHEM LTD	LUPOY ER- 2253F(#) (#) Maybe followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E	V-0, min. 0.8mm thickness, 80°C	UL 94 UL 746C	UL (E67171)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	GXV-35(cc)U(#) (#) – Suffix optional (cc) 10through 30	V-0, min. 0.75mm thickness, 80°C	UL 94 UL 746C	UL (E244324)
Plastic Enclosure (for top cover enclosure, C cover) (Optional)	LG CHEM LTD	LUPOY GN- 5151RF(#) (#)maybe followed by optional suffix letter from A-Z incl., except F, and except Grades AF302G, HT700B, XR401B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X	V-0, min. 1.0mm thickness, 60°C	UL 94 UL 746C	UL (E67171)
(Alternate)	LG CHEM LTD	Lupoy: GN- 5101RF(#) (#) – May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X, XR404E, XR404-G, XR404-P and LUMILOY GN2108FI.	V-0, min. 0.75mm thickness, 60°C	UL 94 UL 746C	UL (E67171)
(Alternate)	LG CHEM LTD	LUPOY ER-5001RF(#), (#) - May be followed by optional suffix letter from A- Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E.	V-0, min. 1.0mm thickness, 60°C	UL 94 UL 746C	UL (E67171)

Certificado de Conformidade

Certificate of Conformity

Certificado/Certificate: **UL-BR 23.1286**

Emissão/Issue
28 de julho de 2023
July 28, 2023

Revisão/Review: **08**

Validade/Expiration
27 de julho de 2026
July 27, 2026

(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-3713B(#), (#) - Suffix optional	**V-1**, min. 1.0mm thickness, 60°C	UL 94 UL 746C	UL (E244324) UL (E98529)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD or TEIJIN LIMITED RESIN AND PLASTIC	TN-3715B(n1), (#) TN-3745B(#), TN-7400B(#) - Suffix optional, (n1) May be suffixed with any letters except Z. TN3715BZ(#)	V-0, min. 1.2mm thickness, 60°C	UL 94 UL 746C	UL (E244324) UL (E98529)
Metal Enclosure (for top cover enclosure, C cover) (Optional)	Interchangeable	Interchangeable	Metal, min. 0.65mm thickness	--	--
Internal plastic frame Rear side (Near hinge)	LG CHEM LTD	LUPOY GN-5151RF(#) (#)may be followed by optional suffix letter from A-Z incl., except F, and except Grades AF302G, HT700B, XR401B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X	**V-1**, min. 1.0mm thickness, 60°C	UL 94 UL 746C	UL (E67171)
(Alternate)	LG CHEM LTD	Lupoy: GN-5101RF(#) (#) – May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X, XR404E, XR404-G, XR404-P and LUMILOY GN2108FI.	V-0, min. 0.75mm thickness, 60°C	UL 94 UL 746C	UL (E67171)
(Alternate)	LG CHEM LTD	LUPOY ER-5001RF(#), (#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E.	V-0, min. 1.0mm thickness, 60°C	UL 94 UL 746C	UL (E67171)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-3713B(#), (#) - Suffix optional	V-1, min. 1.0mm thickness, 60°C	UL 94 UL 746C	UL (E244324) UL (E98529)

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(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD or TEIJIN LIMITED RESIN AND PLASTIC	TN-3715B(n1), (#), TN-3745B(#), TN-7400B(#) - Suffix optional, (n1) May be suffixed with any letters except Z. TN3715BZ(#)	V-0, min. 1.2mm thickness, 60°C	UL 94 UL 746C	UL (E244324) UL (E98529)
IR Camera (Optional)	Chicony	CKFJH232100433 0LH, CKFME232100433 0LH, CKFKH872100433 0LH	SELV, Class III	--	Tested in appliance
IR Camera (Optional) (Alternate)	Luxvisions	9BF112N3, 0BF121N3, 2BG502N3	SELV, Class III	--	Tested in appliance
IR Camera (Optional) (Alternate)	TFC	YHSD, YHSC, YHSL, YHW	SELV, Class III	--	Tested in appliance
IR Camera (Optional) (Alternate)	Foxlink	FH53FF-867H	SELV, Class III	--	Tested in appliance
IR LED for facing camera (Optional)	LITE-ON OPTO TECHNOLOGY (Changzhou) Ltd.	LTE-R28206AS-Q; LTE-R28206AS-Y; LTE-R28206AS-Q- XX; LTE- R28206AS-Y-XX(XX means customer number)	3.1Vdc, 1A	IEC 62471: 2006 EN 62471: 2008	CB by SGS
IR LED for facing camera (Optional) (Alternate)	LITE-ON OPTO TECHNOLOGY (Changzhou) Ltd.	LTE-R38381AS-YYY (where "Y" can be used as "A-Z", or "0-9" or blank for different viewing angle)	3.1Vdc, 1 A	IEC 62471:2006 EN 62471: 2008	CB by UL
IR LED for facing camera (Optional) (Alternate)	OSRAM Optp Semiconductors (Taiwan) Ltd	SFH4770SR7, SFH4770SR7S	3.6 Vdc, 1.5 A	IEC 62471:2006 EN 62471:2008	CB by UL
IR LED for facing camera (Optional) (Alternate)	OSRAM Optp Semiconductors (Taiwan) Ltd	SFH 4727AS	Max. 3.4Vdc, 1A	IEC 62471:2006 EN 62471:2008	CB by UL
Mylar sheet under Keyboard	Interchangeable	Interchangeable	Rated min. V-0 or VTM-0	UL 94	UL

Anexo 13 – Lista de componentes (modelo HSN-I45C-4)

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Power adapter (Optional) (Rated 15Vdc, 3A)	ACBEL(hp)	TPN-AA07	I/P: 100-240Vac, 1.4A, 50-60Hz O/P: 15Vdc, 3A or 12Vdc, 3A or 9Vdc, 3A or 5Vdc, 3A Max. operating altitude: 5000 m.	IEC 60950-1:2005+A1+A2 IEC 62368-1:2014 (Second Edition), EN 62368-1:2014+A11, UL 62368-1,2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL, GS

	Chicony (hp)	TPN-CA20	I/P: 100-240Vac, 1.4A, 50-60Hz O/P: 15Vdc, 3A or 12Vdc, 3A or 9Vdc, 3A or 5Vdc, 3A Max. operating altitude: 5000 m.	IEC 60950-1:2005+A1+A2 IEC 62368-1:2014 (Second Edition), EN 62368-1:2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL, GS
	Delta (hp)	TPN-DA15	I/P: 100-240Vac, 1.4A, 50-60Hz O/P: 15Vdc, 3A or 12Vdc, 3A or 9Vdc, 3A or 5Vdc, 3A Max. operating altitude: 5000 m.	IEC 60950-1:2005+A1+A2 IEC 62368-1:2014 (Second Edition), EN 62368-1:2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL, GS
	Lite-On (hp)	TPN-LA19	I/P: 100-240Vac, 1.4A, 50-60Hz O/P: 15Vdc, 3A or 12Vdc, 3A or 9Vdc, 3A or 5Vdc, 3A Max. operating altitude: 5000 m.	IEC 60950-1:2005+A1+A2 IEC 62368-1:2014 (Second Edition), EN 62368-1:2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL, GS
	Interchangeable	Interchangeable	O/P: 15Vdc, 3A Max. operating altitude: 3048 m min.	IEC 60950-1:2005+A1+A2 IEC 62368-1:2014 (Second Edition), EN 62368-1:2014+A11, UL 62368-1,2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB (issued by NCB), UL/c-UL
Power adapter (Optional) (Rated 20Vdc, 3.25A)	Chicony (hp)	TPN-CA21	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A or 20 Vdc, 3.25 A; Max. operating altitude: 5000 m.	IEC 60950-1:2005+A1+A2 IEC 62368-1:2014 (Second Edition), EN 62368-1:2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL, GS

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	Delta (hp)	TPN-DA20	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A or 20 Vdc, 3.25 A; Max. operating altitude: 5000 m.	IEC 60950-1:2005+A1+A2 IEC 62368-1:2014 (Second Edition), EN 62368-1:2014+A11, UL 62368-1,2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL, GS
	HONOR (hp)	TPN-HA01	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A or 20 Vdc, 3.25 A; Max. operating altitude: 5000 m.	IEC 60950-1:2005+A1+A2 IEC 62368-1:2014 (Second Edition), EN 62368-1:2014+A11, UL 62368-1,2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-	CB by UL, UL/cUL, GS
	Lite-On (hp)	TPN-LA23	I/P: AC 100-240V, 50-60 Hz, 1.6 A O/P: DC 5.0V/3.0A, 9.0V/3.0A, 12.0V/5.0A, 15.0V/4.33A, 20.0V/3.25A; Max. operating altitude: 5000 m.	IEC 60950-1:2005+A1+A2 IEC 62368-1:2014 (Second Edition), EN 62368-1:2020+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL, GS
	Chicony (hp)	TPN-CA10	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A or 20 Vdc, 3.25 A; Max. operating altitude: 5000 m	IEC 60950-1:2005+A1+A2 IEC 62368-1:2014 (Second Edition), EN 62368-1:2014+A11, UL 62368-1,2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL, GS
	Lite-On (hp)	TPN-LA12	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A or 20 Vdc, 3.25 A; Max. operating altitude: 5000 m	IEC 60950-1:2005+A1+A2 IEC 62368-1:2014 (Second Edition), EN 62368-1:2014+A11, UL 62368-1,2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by UL, UL/cUL, GS

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	Lite-On (hp)	TPN-LA22	Input: 100-240VAC, 1.6A, 50-60Hz Output: 5.0Vdc, 3.0A, 15.0W / 9.0Vdc, 3.0A / 12.0Vdc, 5.0A / 15.0Vdc, 4.33A / 20.0Vdc, 3.25A, 65.0W Max. operating altitude: 5000 m	IEC 60950-1:2005+A1+A2 IEC 62368-1:2014 (Second Edition), IEC 62368-1:2018, EN IEC 62368- 1:2020+A11, UL 62368-1, 3rd Edition, 2019-12-13, CAN/CSA C22.2 No. 62368-1:19, 3rd Ed, Issued: 2019-12-13	CB by TÜV Rh, UL/cUL, GS
	Delta (hp)	TPN-DA26	Input: AC 100-240V; 1.6A; 50-60Hz Output: DC 5.0V; 3.0A or DC 9.0V; 3.0A or DC 12.0V; 5.0A or DC 15.0V; 4.33A or DC 20.0V; 3.25A Max. operating altitude: 5000 m	IEC 60950-1:2005+A1+A2 IEC 62368- 1:2014 (Second Edition), IEC 62368-1:2018, EN 62368-1:2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22 No.62368-1- 14, 2nd Edition, 2014-12-01	CB by TÜV Rh, UL/cUL, GS
	ACBEL(hp)	**TPN-AA08**	**AC I/P: 100-240V~, 1.6A, 50-60Hz DC O/P: 20.0V/3.25A, 65.0W; 15.0V/4.33A, 64.95W; 12.0V/5.0A, 60.0W; 9.0V/3.0A, 27.0W; 5.0V/3.0A, 15.0W Max. operating altitude: 5000 m**	**IEC 60950-1:2005+A1+A2 IEC 62368- 1:2014 (Second Edition) IEC 62368-1:2018, EN 62368- 1:2014 +A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12-01**	**CB by TÜV Rh, UL/cUL, GS**
	Chicony (hp)	**TPN-CA30**	**Input : AC 100-240V; 50-60Hz; 1.6A Output: DC 5.0V, 3.0A, 15.0W; 9V, 3A; 12V, 5A; 15V, 4.33A; 20.0V, 3.25V, 65.0W Max. operating altitude: 5000 m**	**IEC 60950-1:2005+A1+A2 IEC 62368-1:2014 (Second Edition) IEC 62368-1:2018 EN 62368-1:2014 +A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014- 12-01**	**CB by TÜV Rh, UL/cUL, GS**

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	Interchangeable	Interchangeable	O/P: 20 Vdc, 3.25 A Max. operating altitude: 3048 m min.	IEC 60950-1:2005+A1+A2 IEC 62368-1:2014 (Second Edition), EN 62368-1:2014 +A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB (issued by NCB), UL/c-UL
Enclosure	Interchangeable	Interchangeable	Metallic, thickness 0.6 mm min.	--	--
Enclosure (for display bezel)	Interchangeable	Interchangeable	HB or better.	UL 94	UL
RTC Battery (Lithium)	Interchangeable	CR1620	Max. abnormal charging current 10 mA	UL 1642	UL
	Interchangeable	CR2032	Max. abnormal charging current 10 mA	UL 1642	UL
	Interchangeable	CR2320	Max. abnormal charging current 10 mA	UL 1642	UL
Battery Pack (Optional)	Dynapack (hp)	TPN-DB0P	11.58Vdc, 38Wh, 3152mAh	IEC 62368-1:2014, IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01	CB by UL, UL/cUL
	Simplo (hp)	TPN-IB0B	11.58Vdc, 3152mAh or 38Wh	IEC 62368-1:2014, IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01	CB by UL, UL/cUL
	Amperex (hp)	**HSTNN-AB1C**	**11.55Vdc, 3161mAh**	**IEC 62368-1:2014, IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01**	**CB by Dekera, UL/cUL**

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	Dynapack (hp)	**TPN-DB1O**	**11.55Vdc, 3161mAh, 38Wh**	**IEC 62368-1:2014, IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01**	**CB by UL, UL/cUL**
	Simplo (hp)	**TPN-IB0T**	**11.55Vdc, 3161mAh, 38Wh**	**IEC 62368-1:2014, IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01**	**CB by UL, UL/cUL**
	COSMX (hp)	HSTNN-OB2J	DC 11.58V, Rated: 4249mAh	IEC 62368-1:2014, IEC 62133-2: 2017,UL 2054, UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh & UL, UL/cUL
	Dynapack (hp)	TPN-DB0J	11.58Vdc, 51.3Wh, 4249mAh	IEC 62368-1:2014, IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01	CB by UL, UL/cUL
	Dynapack (hp)	TPN-DB0K	11.58Vdc, 51.3Wh, 4249mAh	IEC 62368-1:2014, IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01	CB by UL, UL/cUL
	LG Energy Solution (hp)	HSTNN-LB8V	11.58Vdc, 51.3Wh, Rated capacity: 4249mAh	IEC 62368- 1:2018, IEC 62133-2: 2017, UL 2054, UL 62368-1, 3rd Edition, CAN/CSA C22.2 No. 62368-1:19, 3rd Edition	CB by UL, UL/cUL
	Simplo (hp)	HSTNN-IB9X	11.58Vdc, 51.3Wh or 4249mAh	IEC 62368- 1:2014, IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01	CB by UL, UL/cUL

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Certificado de Conformidade

Certificate of Conformity

Certificado/Certificate: **UL-BR 23.1286**

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July 27, 2026

	Simplo (hp)	HSTNN-IB9Y	11.58Vdc, 4249mAh or 51.3Wh	IEC 62368-1:2014, IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01	CB by UL, UL/cUL
	CosMx (hp)	HSTNN-OB3B	11.58Vdc, 4249mAh	IEC 62133-2: 2017+A1, IEC 62368-1: 2018, UL 2054, UL 62368-1, 3rd Edition, CAN/CSA C22.2 No. 62368-1:19, 3rd Edition	CB by TÜV Rh & UL, UL/cUL
	LG Energy Solution (hp)	HSTNN-LB9C	**11.58Vdc, 51.3Wh, Rated: 4249mAh**	IEC 62133- 2:2017, IEC 62368-1:2018, UL 2054, UL 62368-1, 3rd Edition, CAN/CSA- C22.2 No. 62368-1:19, 3rd Edition	CB by UL, UL/cUL
DC Fan (for Vents opening on D cover _width)	Delta	ND75C40XXXXX XXXXXX (X stands for A- Z, 0-9, "-" or blank, for marketing purpose only.)	5 Vdc, 0.5 A, 4.65 CFM min.	IEC 62368-1:2014, EN 62368-1:2014, UL 507	TÜV, UL
	Forcecon	DF(X)5K1211549 1(Y) ((X) stands for B, C, S ; (Y) stands for 0-9, A-Z, "-" or blank.)	5 Vdc, 0.5 A, 4.87 CFM min.	EN 62368-1:2014, UL 507	TÜV, UL
	Sunonwealth	EG50050S1-CI7Z (Z stands for 30 characters. Each character stands for 0-9, A-Z, "(", ")", ".", "/", "-" or blank for marketing purpose only)	5 Vdc, 0.8 A, 4.4 CFM min.	EN 62368-1:2014, UL 507	TÜV, UL
	Interchangeable	Interchangeable	5 Vdc, 0.8 A max., 4.4 CFM min.	IEC 62368- 1:2014, EN 62368- 1:2014, UL 507	TÜV, UL
DC Fan (for Vents opening on D cover_narrow)	Delta	ND75C38XXXXX XXXXXX (X stands for A- Z, 0-9, "-" or blank, for marketing purpose only.)	5 Vdc, 0.5 A, 3.3 CFM min.	IEC 62368-1:2014, EN 62368-1:2014, UL 507	TÜV, UL
	Forcecon	DF(X)5K1211549 1(Y) ((X) stands for B, C, S ; (Y) stands for 0-9, A-Z, "-" or blank.)	5 Vdc, 0.5 A, 3.6 CFM min.	EN 62368-1:2014, UL 507	TÜV, UL

	Sunonwealth	EG70040S1-C15Z (Z stands for 30 characters. Each character stands for 0-9, A-Z, "(", ")", ".", "/", "-" or blank for marketing purpose only)	5 Vdc, 0.45 A, 3.6 CFM min.	EN 62368-1:2014, UL 507	TÜV, UL
	AVC	**BAPA0805Z5HV above "Z" can be B or R;"V" can be ABCD where A, B, C, D may be A-Z, 0-9, "-" or blank.**	**5 Vdc, 0.5 A, 2.6 CFM min.**	**EN 62368-1:2014, UL 507**	**TÜV, UL**
	Interchangeable	Interchangeable	5 Vdc, 0.5 A max., **2.6** CFM min.	IEC 62368-1:2014, EN 62368-1:2014, UL 507	TÜV, UL
LCD Panel	AUO	B140yyyyyyyy (y=0-9, A-Z, a-z, ".", "-" or blank)	14.0" TFT, LED backlight type. Laminated structure.	--	--
	BOE	yy140yyy-yyyyyyy (y= 0-9, A-Z or blank)	14.0" TFT, LED backlight type. Laminated structure.	--	--
	InnoLux	N140yyyyyyyy (y=0-9, A-Z, a-z, ".", "-" or blank)	14.0" TFT, LED backlight type. Laminated structure.	--	--
	IVO	X140NVyy where x, y can be 0-9, A-Z, blank or symbol "-" for marketing purpose and no impact any critical safety components and constructions	14.0" TFT, LED backlight type. Laminated structure.	--	--
	LGD	LP140WU2	14.0" TFT, LED backlight type. Laminated structure.	--	--
	LGD	LP140WU1	14.0" TFT, LED backlight type. Laminated structure.		
	Interchangeable	Interchangeable	14.0" TFT, LED backlight type. Laminated structure.	--	--
Mesh	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR117, DFR117ECOA, DFR117ECOB, DFR117ECOC	VTM-0, min. 80 °C, min. 0.05 mm thick min.	UL 94	UL
Adhesive for Mesh used	SEAL KING INDUSTRIAL CO LTD	TT-219	--	--	--

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	JIANGSU SIDIKE NEW MATERIALS SCIENCE & TECHNOLOGY CO LTD	DS-5	--	--	--
Solid-State Drive (Optional)	Interchangeable	Interchangeable	3.3 Vdc or 5 Vdc	--	--
PCB	Interchangeable	Interchangeable	V-1 min., 105 °C	UL 796	UL

Anexo 14 – Lista de componentes criticos HSN-Q33C-4

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Adapter for rating 19.5Vdc, 2.31A (Optional)	Acbel / hp	TPN-AA05	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA14	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA15	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA15	I/P: 100-240 Vac, 1.1 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL

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(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA16	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA22	I/P: 100-240 Vac, 1.4 A, 50-60 Hz O/P: 19.5 Vdc, 2.31A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV
(Alternate)	Interchangeable	Interchangeable	O/P: 19.5 Vdc, 2.31A min. altitude: 3048 m min., Tma: 35°C min.	IEC 60950-1: 2005+A1+A2 IEC 623681:2014	CB (issued by National Certification Body)
Adapter for rating 15Vdc, 3A (Optional)	Acbel / hp	TPN-AA07	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA20	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA19	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A Altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL

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(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA15	I/P: 100-240 Vac, 1.4 A Max., 50-60 Hz O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Interchangeable	Interchangeable	O/P: 15 Vdc, 3 A max. Altitude: 3048 m min., Tma: 35°C min	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body) UL
Adapter for rating 19.5Vdc, 3.33A (Optional)	Acbel / hp	TPN-AA06	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA16	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A, 65 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A, 65 W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA16	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL

(Alternate)	Lite-On Technology Corp / hp	TPN-LA17	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma:	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition,	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA17	I/P: 100-240 Vac, 1.7 A, 50-60 Hz O/P: 19.5 Vdc, 3.33A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Interchangeable	Interchangeable	O/P: 19.5Vdc, 3.33A min. altitude: 3048 m min., Tma: 35°C min.	IEC 60950-1: 2005+A1+A2 IEC 623681: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body) UL
Adapter for rating 20Vdc, 3.25A (Optional)	Chicony Power Technology Co., Ltd. / hp	TPN-CA21	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	DELTA ELECTRONICS INC / hp	TPN-DA20	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Honor / hp	TPN-HA01	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma:	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA23	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL

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(Alternate)	Lite-On Technology Corp / hp	TPN-LA12	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by TUV UL
(Alternate)	Chicony Power Technology Co., Ltd. / hp	TPN-CA10	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV UL
(Alternate)	Lite-On Technology Corp / hp	TPN-LA22	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1: 2018	CB by TUV, UL
(Alternate)	Interchangeable	Interchangeable	O/P: 20 Vdc, 3.25A max. Altitude: 3048 m min., Tma: 35°C min	IEC 60950-1: 2005+A1+A2 IEC 623681: 2014 UL 62368-1, 2nd Edition, 2014-12-01 CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB (issued by National Certification Body) UL
Battery pack (Li-ion type)	Zhuhai CosMX	HSTNN-OB2X	11.4Vdc, 42.75Wh, 3600mAh	IEC 62368-1: 2014 (ed.2) IEC 62133-2: 2017, UL 2054 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
Alternate)	Dynapack	TPN-DB0Y	11.4Vdc, 42.75Wh, 3600mAh	IEC 62368-1: 2014 (ed.2) IEC 62133-2: 2017 UL 2054 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL

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Alternate)	Simplo	TPN-IB0K	11.4Vdc, 42.75Wh, 3600mAh	IEC 62368-1: 2014 (ed.2) IEC 62133-2: 2017 UL 2054 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
Alternate)	Simplo	TPN-IB0L	11.4Vdc, 42.75Wh, 3600mAh	IEC 62368-1: 2014 (ed.2) IEC 62133-2: 2017, UL 2054 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
Alternate)	Dynapack	TPN-DB0L	11.58 Vdc, 51.3 Wh, 4249 mAh	IEC 62368-1:2014 (ed.2) IEC 62133-2: 2017, UL 2054 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
Alternate)	Simplo	TPN-IB0A	11.58 Vdc, 51.3 Wh, 4249 mAh	IEC 62368-1: 2014 (ed.2) IEC 62133-2: 2017, UL 2054 UL 62368-1, 2nd Edition, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	CB by UL UL
(Alternate)	Simplo	TPN-IB0P	42.75 Wh, 11.4 Vdc, 3600mAh	IEC 62368-1:2014, IEC 62133-2: 2017, UL 2054, UL 62368-1, 2nd Edition, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition	CB by UL UL
(Alternate)	Zhuhai CosMX	HSTNN-OB3C	11.4 Vdc, 3600mAh	IEC 62368- 1:2018, UL 2054, UL 62368-1, 3rd Edition, CAN/CSA C22.2 No. 62368-1-19	CB by UL UL

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(Alternate)	Dynapack	TPN-DB1J	42.75 Wh, 11.4 Vdc, 3600mAh	IEC 62368- 1:2018, IEC 62133-2: 2017/AM1:2021, UL 2054, UL 62368-1, 3rd Edition, CAN/CSA C22.2 No. 62368-1-19, 3rd Edition	CB by UL UL
(Alternate)	LG Energy Solution, LTD.	HSTNN-LB9D	11.58Vdc, 51.3Wh, Rated: 4249mAh	IEC 62368-1:2018, IEC 62133-2: 2017/AM1:2021 UL 2054, UL 62368-1, 3rd Edition, CAN/CSA C22.2 No. 62368-1-19, 3rd	CB by UL UL
(Alternate)	SUNWODA ELECTRONIC CO.,LTD.	HSTNN-WB0E	11.58V, Rated capacity: 4249mAh	IEC 62368-1:2018, IEC 62133-2: 2017/AM1:2021 UL 2054, UL 62368-1, 3rd Edition, CAN/CSA C22.2 No. 62368-1-19, 3rd Edition	CB by UL UL
Panel (LED backlight)	AUO	B140HAK03.5	14 inch TFTLCD, LED backlight	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	Interchangeable	Interchangeable	14 inch TFTLCD, LED backlight	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
DC Fan DIS	Kunshan Pindai Electrical Co.,Ltd	PB8506F05HS2	5 Vdc, max:500mA, min:4.15CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	DELTA ELECTRONICS,INC.	ND85C21-20E14	5 Vdc, max:500mA, min:4.24CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD	EG5005S01-CG90-S9A	5 Vdc, max:500mA, min:4.3CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
DC Fan UMA	Kunshan Pindai Electrical Co.,Ltd	PB8505S05HS2	5 Vdc, max:500mA, min:3.0CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	Kunshan Pindai Electrical Co.,Ltd	BA005ASMSF210 0TN	5 Vdc, max:500mA, min:3.0CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD	EG70040S1-C130-S9A	5 Vdc, max:500mA, min:3.4CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance

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(Alternate)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD	EG50040S1-CQ90-S9A	5 Vdc, max:500mA, min:3.4CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	DELTA ELECTRONICS, INC.	NS85C05-20E13	5 Vdc, max:500mA, min:4.01CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
(Alternate)	DELTA ELECTRONICS,INC.	NS85C05-21C03	5 Vdc, max:500mA, min:4.01CFM	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
Power distribution switch (for HDMI port)	DIODES INC	AP2331, followed by FJ, SA or W, may be followed by additional letters and/or numbers	Input Voltage: 2.7 to 5.5 Vdc, Output Continuous Rating: 0.2A, Output Current Limit: 0.5	IEC 609501 (ed.2); am2 IEC 62368-1: 2014; UL 2367	CB by TUV, UL
(Alternate)	Global Mixedmode Technology Inc.	G5250Q1T73U	Input Voltage: 2.7 to 5.5 Vdc, Output Continuous Rating: 0.2A Output Current Limit: 0.5A	IEC 609501 (ed.2); am2 IEC 62368-1: 2014; UL 2367	CB by TUV, UL
(Alternate)	Polytronics Technology Corp.	G524B series	2.7-5.5 Vdc, 2.1A	IEC 609501 (ed.2); am2 IEC 62368- 1:2014; UL 2367	TUV RH, UL (E232223)
(Alternate)	EXCELLIANCE MOS CORPORATION	EM5203AJ-20	2.5 to 5.5Vdc, Output continuous rating: 2.0A. Ouput current: 4A	IEC 609501 (ed.2); am2 IEC 62368-1: 2014; UL 2367	UL (E468218)
RTC Battery	Jhih Hong Technology Co., Ltd.	CR2032	Max. abnormal charging current 10mA, max. abnormal charging voltage 5Vdc	UL 1642	UL (MH48406)
(Alternate)	DOUBLE BEST CO LTD	CR2032	Max. abnormal charging current 10mA, max. abnormal charging voltage 5Vdc	UL 1642	UL (MH46388)
(Alternate)	Vic-Dawn Entreprise Co., Ltd	CR2032	Max. abnormal charging current 10Ma.	UL 1642	UL (MH20550)
(Alternate)	Interchangeable	Interchangeable	Max. abnormal charging current 10mA, max. abnormal charging voltage 5Vdc	UL 1642	UL
Speakers (Two provided)	Interchangeable	Interchangeable	Each rated 4 +15% ohm, 2.5W max.	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
- Enclosure of speakers	Interchangeable	Interchangeable	Min. V-1	UL 94	UL
SSD (optioanl)	Interchangeable	Interchangeable	3.3Vdc or 5Vdc, optional.	IEC 609501: 2005+A1+A2, CAN/CSA C22.2 No. 60950-1, UL 60950-1	CB by NCB, cUL, UL
IR Camera (optional)	Chicony	CKFJH232100433 0LH, CKFME23210043 30LH, CKFKH87210043 30LH	SELV, Class III	Tested in appliance	--

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(Alternate)	Luxvisions	9BF112N3 0BF121N3 2BG502N3	SELV, Class III	Tested in appliance	--
(Alternate)	TFC	YHSD, YHSC, YHW	SELV, Class III	Tested in appliance	--
IR LED for facing camera (Optional)	LITE-ON OPTO TECHNOLOGY (Changzhou) Ltd.	LTE-R28206AS- Q; LTE- R28206AS-Y; LTE-R28206AS- Q-XX; LTE-R28206AS-Y-XX(XX means customer number)	DC 3.1V, 1 A	IEC 62471:2006 EN 62471:2008	CB by SGS
(Alternate)	OSRAM Optp Semiconductors (Taiwan) Ltd	SFH4770S R7, SFH4770S R7S	DC 3.6V, 1.5A Comply with IEC 62471 exempt group	IEC 62471:2006 EN 62471:2008	CB by UL
(Alternate)	LITE-ON OPTO TECHNOLOGY (Changzhou) Ltd.	LTE-R38381AS-**YYY (where "Y"** can be used as **"A-Z", or "0-9" or** blank for different viewing angle)	3.1Vdc, 1 A	IEC 62471:2006 EN 62471: 2008	CB by UL
(Alternate)	OSRAM Optp Semiconductors (Taiwan) Ltd	SFH 4727AS	Max. 3.4Vdc, 1A	IEC 62471:2006 EN 62471:2008	CB by UL

Anexo 15 – Lista de componentes criticos HSN-Q36C:

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Adapter for rating 19.5Vdc, 6.15A (Optional) (UMA)	Chicony Power Technology Co., Ltd. / hp	TPN-CA19	I/P: 100-240Vac, 1.7 A, 50-60 Hz O/P: 19.5Vdc, 6.15A, 120W altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate) (UMA)	DELTA ELECTRONICS INC / hp	TPN-DA19	I/P: 100-240Vac, 1.7 A, 50-60 Hz O/P: 19.5Vdc, 6.15A, altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate) (UMA)	Lite-On Technology Corp / hp	TPN-LA18	I/P: 100-240Vac, 1.7 A, 50-60 Hz O/P: 19.5Vdc, 6.15A, altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV
(Alternate) (UMA)	Interchangeable	Interchangeable	O/P: 19.5Vdc, 6.15A max. Altitude: 3048 m min., Tma: 35°C min	IEC 60950-1: 2005+A1+A2 IEC 623681:2014	CB (issued by National Certification Body)
Adapter for rating 19.5Vdc, 7.7A (Optional) (DIS/ UMA)	DELTA ELECTRONICS INC / hp	TPN-DA09	I/P: 100-240Vac, 2.5 A, 50-60 Hz O/P: 19.5 Vdc, 7.7 A altitude: 5000 m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 62368-1: 2014	CB by TUV

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(Alternate) (DIS/ UMA)	Lite-On Technology Corp / hp	TPN-CA11	I/P: 100-240Vac, 2.5 A, 50-60 Hz O/P: 19.5 Vdc, 7.7 A altitude: 5000m, Tma: 35°C	IEC 60950-1: 2005+A1+A2 IEC 623681: 2014	CB by TUV
(Alternate) (DIS/ UMA)	Interchangeable	Interchangeable	O/P: 19.5Vdc,7.7A max. Altitude: 3048m min., Tma: 35°C min	IEC 60950-1: 2005+A1+A2 IEC 623681:2014	CB (issued by National Certification Body)
Battery pack (Li-ion type)	Dynapack	TPN-DB0C	11.58 V, 6880 mAh, 83 Wh	IEC 62133:2012 IEC 62368-1: 2014 UL 62368-1,2nd Edition,2014- 1201, CSA C22.2 No. 62368-1-14, 2nd	CB by UL (IEC 62133) CB by UL (IEC 62368)
Panel (LED backlight)	AUO	B156HAN02.5	15.6 inch TFTLCD, LED backlight	Applicable parts of IEC 60950-1: 2005+A1+A2	Tested in appliance
(Alternate)	Interchangeable	Interchangeable	15.6 inch TFTLCD, LED backlight	Applicable parts of IEC 60950-1: 2005+A1+A2	Tested in appliance
DC Fan CPU	Taicang Huaying Electronic Material Co., Ltd	BN7512H5H-000P	5Vdc, 500mA max, 6.8 CFM min.	Applicable parts of IEC 60950-1: 2005+A1+A2	Tested in appliance
(Alternate)	SUNONWEALT H ELECTRIC MACHINE INDUSTRY CO., LTD	EG75070S1-C601-S9A	5Vdc, 500mA max, **5.3** CFM min.	Applicable parts of IEC 60950-1: 2005+A1+A2	Tested in appliance
DC Fan GPU	Taicang Huaying Electronic Material Co., Ltd	BN7512H5H-001P	5Vdc, 500mA max, 6.0 CFM min.	Applicable parts of IEC 60950-1: 2005+A1+A2	Tested in appliance
(Alternate)	SUNONWEALT H ELECTRIC MACHINE INDUSTRY CO., LTD	EG75070S1-C611-S9A	5Vdc, 500mA max, **5.3** CFM min.	Applicable parts of IEC 60950-1: 2005+A1+A2	Tested in appliance
Power distribution switch (for USB 3.0 and type C ports)	Cypress Semiconductor Corporation	CYPD6127-48LQXICCG6SF	Input voltage: 4.0 Vdc - 5.5 Vdc Output current limit: 3.3 A	Applicable parts of IEC 623681: 2014	CB by UL
(Alternate)	Global Mixedmode Technology Inc. (GMT)	G517HX1X2X3X4 (X1=1, 2, 3, or 4 X2=T1, TB, TO, TP or P8; X3=1, 2 or 3 X4=U or D)	Input Voltage: 2.7-5.5Vdc, Output Continuous Rating: 2.6 A Output Current Limit: 2.7-3.9 A	IEC 60950-1: 2005+A1+A2 UL 2367	CB by TUV, UL
(Alternate)	Global Mixed- mode Technology Inc	G517B; followed by 1, 2, 3, or 4; followed by T1, TB, TO, TP, U5 or TM; followed by 1, 2, or 3; followed by U or D G517BX1X2X3X4, X1=1, 2, 3, or 4, X2=T7, T1, TB, TO, TP, KF, U5 or TM X3=1,2 or 3, X4=U or D	2.7-5.5 Vdc, Cont. Current: 0.2A, Prot. Current: 0.3 to 0.5A	UL 2367 (First Edition) IEC 60950-1 (ed.2), IEC 60950-1 (ed.2);am1 IEC 60950-1 (ed.2);am2	CB by TUV, UL

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(Alternate)	GLOBAL MIXED-MODE TECHNOLOGY INC	G3712X1X2X3X4, GD712X1X2X3 X4 (X1=A, B, C, D or null; X2=B6; X3=1 or 2; X4=U or D)	Input voltage: 4.0 Vdc - 5.5 Vdc Output current limit: 1.0-4.0 A	IEC 62368-1: 2014 (Second Edition) UL 2367	CB by TUV, UL
(Alternate)	DIODES INCORPORATE D	PI5USB25wwxyyy Ez Series, where ww is 44 or 46; x is blank, A or H; yyy is ZH or ZHD for the packaging type; E is Pb-free; and z is blank or X	Input Voltage: 4.5 - 5.5 Vdc Continuous Rating: 30 mA to 2.5 A Current Limit: 100 mA to 3.18 A Ambient: -40 to 85°C	EC 62368-1: 2014 (Second Edition) UL 2367	CB by UL, UL
(Alternate)	TEXAS INSTRUMENTS INCORPORATE D	TPS2547	Input Voltage: 4.5 to 5.5 Vdc Output Continuous Rating: 2.5 A Output Current Limit: 3.1 A Maximum Operational Ambient: 85°C	IEC 62368-1: 2014 (Second Edition) UL 2367	CB by UL, UL
(Alternate)	TEXAS INSTRUMENTS INC	TPS2546	4.0-5.5Vdc, Output Continuous rating: 2.5A, Output current Limit: 3.1A	IEC 609501 (ed.2), IEC 609501 (ed.2);am1, IEC 609501 (ed.2);am2	CB by UL, UL
(Alternate)	Texas Instruments Incorporated	TPS65992 (for S Variant: SN2010019RSMR, SN2011036, SN2101009RSMR, SN2101017RSMR, SN2011054RSMR, SN2101021RSMR and for D-Variant: SN2010020RJKR, SN2011031, SN2011032, SN2011033 SN2011053RJKR, SN2101018RJKR, SN2101010RJKR)	Input Voltage: 4.9 - 5.5 Vdc Output Current Limit: VBUS: 1.36 - 3.78A PA_CC1/ PA_CC2*: 0.47 - 0.66A	Applicable parts of IEC 623681:2014, UL2367	CB by UL, UL
(Alternate)	DIODES INC	AP22804AW5-7	Input Voltage: 2.5 to 5.5 Vdc, Output Continuous Rating: 2.5A, Output Current Limit: 3.3 A	IEC 60950-1: 2005+A1+A2	CB by UL, UL
(Alternate)	EXCELLIANCE MOS CORPORATIO	EM5213AJ-25	Input Voltage: 2.5 to 5.5 Vdc, Output Continuous Rating: 2.5A, Output Current Limit:2.5A	IEC 60950-1: 2005+A1+A2 UL 236	CB by TUV, UL

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(Alternate)	ANPEC	APL3553, APL3555	Input Voltage: 2.7 to 5.5 Vdc Output Continuous Rating: 2.0 A for Models APL3555 followed by A or B, followed by B, followed by I, followed by -, followed by TR, followed by G Models APL3553 followed by A, B, E, F, I or J followed by B, C or X followed by I, followed by -, followed by TR, followed by G 1.0 A for Models APL3555 followed by C or D, followed by B, followed by I, followed by -, followed by TR, followed by G Models APL3553 followed by C, D, G or H, followed by B, C or X, followed by I, followed by -, followed by TR, followed by G	IEC 60950-1 (ed.2) IEC 60950-1 (ed.2);am1 IEC 60950-1 (ed.2);am2	CB by UL, UL
(Alternate)	SILERGY TECHNOLOGY (TAIWAN) INC	SY6863B4ABC	2.5 Vdc to 5.5 Vdc, Cont. Current: 0.1-3A, Prot. Current: 0.3-5A	UL 2367 (First Edition), IEC 60950-1 (ed.2), IEC 60950-1 (ed.2);am1, IEC 60950-1 (ed.2);am2	CB by UL, UL
(Alternate)	DIODES INC	AP22615, followed by A or B, followed by WT, WU, or ST, followed by 7, may be followed by additional alphanumerics	Input Voltage/Output Continuous Rating: 3.0 - 4.0 Vdc, Iout = 1A to 1.5A 4.0 - 5.5 Vdc, Iout = 1A to 3A Output Current Limit:3.0 - 5.5 Vdc, at 1.35A - 3.6A	UL 2367 (First Edition) IEC 60950-1 (ed.2), IEC 60950-1 (ed.2);am1, IEC 60950-1 (ed.2);am2	CB by UL, UL
(Alternate)	NXP Semiconductor Taiwan Ltd.	NX5P3290AUK Z, NX5P3363UK	4.0-5.5Vdc, Output current limit: 3.3A	IEC 623681 (ed2)	CB by UL, UL
Power distribution switch (for HDMI port)	DIODES INC	AP2331, followed by FJ, SA or W, may be followed by additional letters and/or numbers	Input Voltage: 2.7 to 5.5 Vdc, Output Continuous Rating: 0.2A, Output Current Limit: 0.5	IEC 60950-1: 2005+A1+A2 UL 236	CB by TUV, UL
(Alternate)	Global Mixedmode Technology Inc.	G5250Q1T73U	Input Voltage: 2.7 to 5.5 Vdc, Output Continuous Rating: 0.2A Output Current Limit: 0.5A	IEC 60950-1: 2005+A1+A2 UL 2367	CB by TUV, UL
(Alternate)	Polytronics Technology Corp.	G524B series	2.7-5.5 Vdc, 2.1A	IEC/EN607381, IEC/EN 60730-1 UL 60950-1	CB by TUV, UL
(Alternate)	EXCELLIANCE MOS CORPORATIO N	EM5203AJ-20	2.5 to 5.5 Vdc, Output continuous rating: 2.0A. Ouput current: 4A	IEC/EN 607381, IEC/EN 60730-1 UL 60950-1	CB by UL, UL

(Alternate)	Polytronics Technology Corp.	SPR-P150($), ($)May be followed by symbol "-" and up to two alphanumeric characters denoting a resistance range or customer code.	6Vdc, Ih=1.5A, It=3.0A, CA3	IEC 60730-1: 1999, UL1434 (First Edition)	CB by TUV, UL
Poly switch	CYG WAYON CIRCUIT PROTECTION CO LTD	LP-ISML150* (* May be followed by H or F. (where "H" is Halogen free and "F" is Lead free))	8Vdc, Ih=1.5A, It=3.0A, CA3	IEC 62319-1-1: 2005 EN 62319-1-1: 2005 UL1434 (First Edition)	CB by TUV, UL
(Alternate)	CYG WAYON CIRCUIT PROTECTION CO LTD	LP-MSM150+++ +++ May be f/b C, U, S, or Z; f/b F.	6Vdc, Ih=1.5A, It=3.0A, CA3	IEC 62319-1-1: 2005 EN 62319-1-1: 2005 UL1434 (First Edition)	CB by TUV, UL
(Alternate)	Littelfuse Inc.	0805L150ULYR	6V, Ih=1.5A, It=3.0A, CA3	IEC/EN 60738 UL1434 (First Edition)	CB by TUV, UL
RTC Battery	Jhih Hong Technology Co., Ltd.	CR2032	Max. abnormal charging current 10mA, max. abnormal charging voltage 5Vdc	UL 1642	UL (MH48406)
(Alternate)	DOUBLE BEST CO LTD	CR2032	Max. abnormal charging current 10mA, max. abnormal charging voltage 5Vdc	UL 1642	UL (MH46388)
(Alternate)	Vic-Dawn Entreprise Co., Ltd	CR2032	Max. abnormal charging current 10Ma.	UL 1642	UL (MH20550)
(Alternate)	Interchangeable	Interchangeable	Max. abnormal charging current 10mA, max. abnormal charging voltage 5Vdc	UL 1642	UL
Speaker	Interchangeable	Interchangeable	4 +15% ohm, 2.5W max.	Applicable parts of IEC 60950-1:2005+A1+A2	Tested in appliance
SSD (optioanl)	Interchangeable	Interchangeable	3.3Vdc or 5Vdc, optional.	IEC 609501: 2005+A1+A2, CAN/CSA C22.2 No. 60950-1, UL 60950-1	CB by NCB, cUL, UL
(Alternate)	T-MAC TECHVEST PCB CO LTD	YAML	V-0, 130°C	UL 796 (Eleventh Edition)	UL (E114139)
(Alternate)	Interchangeable	Interchangeable	V-1 min., 105 degree C min	UL 796 (Eleventh Edition)	UL
Metal Enclosure material	Interchangeable	Interchangeable	Metal , 0.65 mm thickness min	--	--
Plastic Enclosure	LG CHEM LT	LUPOY ER2253F(#) (#) May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E.	V-0, min. thickness 0.8 mm, 80°	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	GXV-35(cc)U(#) (#) – Suffix optional (cc) 10through 30.	V-0, min. thickness 0.75 mm, 80°	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E244324)

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(Alternate)	LG CHEM LT	LUPOY GN5151RF(#) (#)may be followed by optional suffix letter from A-Z incl., except F, and except Grades AF302G, HT700B, XR401B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X	V-0, min. thickness 1.0 mm, 60°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	LG CHEM LTD	LUPOY ER5001RF(#) (#) - May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E.	V-0, min. thickness 1.0 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD or TEIJIN LIMITED RESIN AND PLASTIC	TN-3713B(#), TN-3715B(n1), (#) - Suffix optional, (n1) - May be suffixed with any letters except Z. TN-3715BZ(#)	V-0, min. thickness 1.2 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E244324) (E98529)
(Alternate)	TEIJIN LIMITED RESIN AND PLASTIC	TN-3745B(#) ((#) - Suffix optional)	V-0, min. thickness 1.2 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E98529)
(Alternate)	TEIJIN LIMITED RESIN AND PLASTIC	TN-7400B(#) ((#) - Suffix optional)	V-0, min. thickness 1.2 mm, 60 °C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E98529)
(Alternate)	LG CHEM LT	Lupoy: GN-5101RF(#), (#) – May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X, XR404E, XR404-G and XR404-P.	V-0, min. thickness 1.0 mm, 60°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL (E67171)
Mylar (Under Keyboard)	Interchangeable	Interchangeable	VTM-0, min. 80 degree C	UL 94	UL
IR LED for facing camera (Optional)	Liteon OPTO Technology (CZ) Ltd	LTE-R28206AS-Q; LTE-R28206AS-Y; LTE-R28206AS-Q- XX; LTE-R28206AS-Y- XX(XX means customer number)	DC 3.1 V, 1 A	IEC 62471:2006 EN 62471:2008	CB by SGS
IR Camera (optional)	Chicony	CKFJH232100433 0LH	SELV, Class III	Tested in appliance	--

Certificado de Conformidade

Certificate of Conformity

Certificado/Certificate: **UL-BR 23.1286**

Emissão/Issue
28 de julho de 2023
July 28, 2023

Revisão/Review: **08**

Validade/Expiration
27 de julho de 2026
July 27, 2026

Anexo 15 – Lista de componentes criticos HSN-I45C-4

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity1
Power adapter (Optional) (Rated 15Vdc, 3A)	ACBEL(hp)	TPN-AA07	I/P: 100-240Vac, 1.4A, 50-60Hz O/P: 15Vdc, 3A or 12Vdc, 3A or 9Vdc, 3A or 5Vdc, 3A Max. operating altitude: 5000 m.	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014 (Second Edition) EN 62368-1: 2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL, GS
	Chicony (hp)	TPN-CA20	I/P: 100-240Vac, 1.4A, 50-60Hz O/P: 15Vdc, 3A or 12Vdc, 3A or 9Vdc, 3A or 5Vdc, 3A Max. operating altitude: 5000 m.	IEC 60950-1:2005+A1+A2, IEC 62368-1:2014 (Second Edition) EN 62368-1:2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL, GS
	Delta (hp)	TPN-DA15	I/P: 100-240Vac, 1.4A, 50-60Hz O/P: 15Vdc, 3A or 12Vdc, 3A or 9Vdc, 3A or 5Vdc, 3A Max. operating altitude: 5000 m.	IEC 60950-1:2005+A1+A2, IEC 62368-1:2014 (Second Edition) EN 62368-1:2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL, GS
	Lite-On (hp)	TPN-LA19	I/P: 100-240Vac, 1.4A, 50-60Hz O/P: 15Vdc, 3A or 12Vdc, 3A or 9Vdc, 3A or 5Vdc, 3A Max. operating altitude: 5000 m.	IEC 60950-1:2005+A1+A2, IEC 62368-1:2014 (Second Edition) EN 62368-1:2014 +A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL, GS

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	Interchangeable	Interchangeable	O/P: 15Vdc, 3A Max. operating altitude: 3048 m min.	IEC 60950-1:2005+A1+A2, IEC 62368-1:2014 (Second Edition) EN 62368-1:2014 +A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB (issued by NCB), UL/c-UL
Power adapter (Optional) (Rated 20Vdc, 3.25A)	Chicony (hp)	TPN-CA21	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A or 20 Vdc, 3.25 A; Max. operating altitude: 5000 m.	IEC 60950-1:2005+A1+A2, IEC 62368-1:2014 (Second Edition) EN 62368-1:2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL, GS
	Delta (hp)	TPN-DA20	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A or 20 Vdc, 3.25 A; Max. operating altitude: 5000 m.	IEC 60950-1:2005+A1+A2, IEC 62368-1:2014 (Second Edition) EN 62368-1:2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL, GS
	HONOR (hp)	TPN-HA01	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A or 20 Vdc, 3.25 A; Max. operating altitude: 5000 m.	IEC 60950-1:2005+A1+A2, IEC 62368-1:2014 (Second Edition) EN 62368-1:2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by UL, UL/cUL, GS

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Certificado de Conformidade

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	Lite-On (hp)	TPN-LA23	I/P: AC 100-240V, 50-60 Hz, 1.6 A O/P: DC 5.0V/3.0A, 9.0V/3.0A, 12.0V/5.0A, 15.0V/4.33A, 20.0V/3.25A; Max. operating altitude: 5000 m.	IEC 60950-1:2005+A1+A2, IEC 62368-1:2014 (Second Edition) EN 62368-1:2020 +A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL, GS
	Chicony (hp)	TPN-CA10	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A or 20 Vdc, 3.25 A; Max. operating altitude: 5000 m	IEC 60950-1:2005+A1+A2, IEC 62368-1:2014 (Second Edition) EN 62368-1:2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by TÜV Rh, UL/cUL, GS
	Lite-On (hp)	TPN-LA12	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: 5 Vdc, 3 A or 9 Vdc, 3 A or 12 Vdc, 5 A or 15 Vdc, 4.33 A or 20 Vdc, 3.25 A; Max. operating altitude: 5000 m	IEC 60950-1:2005+A1+A2, IEC 62368-1:2014 (Second Edition) EN 62368-1:2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12	CB by UL, UL/cUL, GS
	Lite-On (hp)	TPN-LA22	Input: 100-240VAC, 1.6A, 50-60Hz Output: 5.0Vdc, 3.0A, 15.0W / 9.0Vdc, 3.0A / 12.0Vdc, 5.0A / 15.0Vdc, 4.33A / 20.0Vdc, 3.25A, 65.0W Max. operating altitude: 5000 m	IEC 60950-1:2005+A1+A2, IEC 62368-1:2014 (Second Edition) IEC 62368-1:2018 EN IEC 62368-1:2020+A11, UL 62368-1, 3rd Edition, 2019-12-13, CAN/CSA C22.2 No. 62368-3rd Ed, Issued: 2019-12-13	CB by TÜV Rh, UL/cUL, GS

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	Delta (hp)	TPN-DA26	Input: AC 100-240V; 1.6A; 50-60Hz Output: DC 5.0V; 3.0A or DC 9.0V; 3.0A or DC 12.0V; 5.0A or DC 15.0V; 4.33A or DC 20.0V; 3.25A Max. operating altitude: 5000 m	IEC 60950-1:2005+A1+A2, IEC 62368-1:2014 (Second Edition) IEC 62368-1:2018 EN 62368-1:2014+A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12-01	CB by TÜV Rh, UL/cUL, GS
	ACBEL(hp)	TPN-AA08	AC I/P: 100-240V~, 1.6A, 50-60Hz DC O/P: 20.0V/3.25A, 65.0W; 15.0V/4.33A, 64.95W; 12.0V/5.0A, 60.0W; 9.0V/3.0A, 27.0W; 5.0V/3.0A, 15.0W Max. operating altitude: 5000m	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014 (Second Edition)IEC 62368-1: 2018 EN 62368-1: 2014+A11 UL 62368-1,2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14, 2nd Edition, 2014-12-01	CB by TÜV Rh, UL/cUL, GS
	Chicony (hp)	TPN-CA30	Input : AC 100-240V; 50-60Hz; 1.6A Output: DC 5.0V, 3.0A, 15.0W; 9V, 3A; 12V, 5A; 15V, 4.33A; 20.0V, 3.25V, 65.0W Max. operating altitude: 5000 m	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014 (Second Edition) IEC 62368-1: 2018 EN 62368-1: 2014+A11 UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2No.62368-1-14, 2nd Edition, 2014-12-01	CB by TÜV Rh, UL/cUL, GS
	Interchangeable	Interchangeable	O/P: 20 Vdc, 3.25 A Max. operating altitude: 3048 m min.	IEC 60950-1: 2005+A1+A2, IEC 62368-1: 2014 (Second Edition) EN 62368-1:2014 +A11, UL 62368-1, 2nd Edition, 2014-12-01, CSA C22.2 No.62368-1-14,2nd Edition, 2014-12	CB (issued by NCB), UL/c-UL
Enclosure	Interchangeable	Interchangeable	Metallic, thickness 0.6 mm min.	--	--
Enclosure (for display bezel)	Interchangeable	Interchangeable	HB or better.	UL 94	UL
RTC Battery (Lithium)	Interchangeable	CR1620	Max. abnormal charging current 10 mA	UL 1642	UL

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	Interchangeable	CR2032	Max. abnormal charging current 10 mA	UL 1642	UL
	Interchangeable	CR2320	Max. abnormal charging current 10 mA	UL 1642	UL
Battery Pack (Optional)	Dynapack (hp)	TPN-DB0P	11.58Vdc, 38Wh, 3152mAh	IEC 62368-1: 2014 IEC 62133-2: 2017, UL 2054 UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01	CB by UL, UL/cUL
	LG Energy Solution (hp)	HSTNN-LB8W	11.58Vdc, 38Wh, Rated capacity: 3152mAh	IEC 62368-1: 2018 IEC 62133-2: 2017, UL 2054 UL 62368-1, 3rd Edition, CAN/CSA C22.2 No. 62368-1:19, 3rd Edition	CB by UL, UL/cUL
	Simplo (hp)	TPN-IB0B	11.58Vdc, 3152mAh or 38Wh	IEC 62368-1: 2014 IEC 62133-2: 2017, UL 2054 UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01	CB by UL, UL/cUL
	Amperex (hp)	HSTNN-AB1C	11.55Vdc, 3161mAh	IEC 62368-1: 2014 IEC 62133-2: 2017, UL 2054UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01	CB by Dekera, UL/cUL
	Dynapack (hp)	TPN-DB1O	11.55Vdc, 3161mAh, 38Wh	IEC 62368-1: 2014 IEC 62133-2: 2017, UL 2054 UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01	CB by UL, UL/cUL
	Simplo (hp)	TPN-IB0T	11.55Vdc, 3161mAh, 38Wh	IEC 62368-1: 2014 IEC 62133-2: 2017, UL 2054 UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01	CB by UL, UL/cUL
	COSMX (hp)	HSTNN-OB2J	DC 11.58V, Rated: 4249mAh	IEC 62368-1: 2014 IEC 62133-2: 2017, UL 2054 UL 62368-1,	CB by TÜV Rh & UL, UL/cUL

				2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12	
	Dynapack (hp)	TPN-DB0J	11.58Vdc, 51.3Wh, 4249mAh	IEC 62368-1: 2014 IEC 62133-2: 2017, UL 2054 UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01	CB by UL, UL/cUL
	Dynapack (hp)	TPN-DB0K	11.58Vdc, 51.3Wh, 4249mAh	IEC 62368-1: 2014 IEC 62133-2: 2017, UL 2054 UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01	CB by UL, UL/cUL
	LG Energy Solution (hp)	HSTNN-LB8V	11.58Vdc, 51.3Wh, Rated capacity: 4249mAh	IEC 62368-1: 2018 IEC 62133-2: 2017, UL 2054 UL 62368-1, 3rd Edition CAN/CSA C22.2 No. 62368-1:19, 3rd Edition	CB by UL, UL/cUL
	Simplo (hp)	HSTNN-IB9X	11.58Vdc, 51.3Wh or 4249mAh	IEC 62368-1: 2014 IEC 62133-2: 2017, UL 2054 UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01	CB by UL, UL/cUL
	Simplo (hp)	HSTNN-IB9Y	11.58Vdc, 4249mAh or 51.3Wh	IEC 62368-1: 2014 IEC 62133-2: 2017, UL 2054 UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12-01	CB by UL, UL/cUL
	CosMx (hp)	HSTNN-OB3B	11.58Vdc, 4249mAh	IEC 62133-2: 2017+A1 IEC 62368-1: 2018 UL 2054, UL 62368-1, 3rd Edition CAN/CSA C22.2 No. 62368-1:19, 3rd	CB by TÜV Rh & UL, UL/cUL

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				Edition	
	LG Energy Solution (hp)	HSTNN-LB9C	11.58Vdc, 51.3Wh, Rated: 4249mAh	IEC 62133-2: 2017 IEC 62368-1: 2018 UL 2054 UL 62368-1, 3rd Edition CAN/CSA-C22.2 No. 62368-1:19, 3rd Edition	CB by UL, UL/cUL
DC Fan (for Vents opening on D cover _width)	Delta	ND75C40XXXXXX XXXXX (X stands for A-Z, 0-9, "-" or blank, for marketing purpose only.)	5 Vdc, 0.5 A, 4.65 CFM min.	IEC 62368-1: 2014, EN 62368-1:2014, UL 507	TÜV, UL
	Forcecon	DF(X)5K12115491 (Y) ((X) stands for B, C, S ; (Y) stands for 0-9, A-Z, "-" or blank.)	5 Vdc, 0.5 A, 4.87 CFM min.	EN 62368-1: 2014, UL 507	TÜV, UL
	Sunonwealth	EG50050S1-CI7Z (Z stands for 30 characters. Each character stands for 0-9, A-Z, "(", ")", ".", "/", "-" or blank for marketing purpose only)	5 Vdc, 0.8 A, 4.4 CFM min.	EN 62368-1: 2014, UL 507	TÜV, UL
	Interchangeable	Interchangeable	5 Vdc, 0.8 A max., 4.4 CFM min.	IEC 62368-1:2014, EN 62368-1:2014, UL 507	TÜV, UL
DC Fan (for Vents opening on D cover_narro w)	Delta	ND75C38XXXXXX XXXXX (X stands for A-Z, 0-9, "-" or blank, for marketing purpose only.)	5 Vdc, 0.5 A, 3.3 CFM min.	IEC 62368-1: 2014, EN 62368-1: 2014, UL 507	TÜV, UL
	Forcecon	DF(X)5K12115491 (Y) ((X) stands for B, C, S ; (Y) stands for 0-9, A-Z, "-" or blank.)	5 Vdc, 0.5 A, 3.6 CFM min.	EN 62368-1: 2014, UL 507	TÜV, UL
	Sunonwealth	EG70040S1-C15Z (Z stands for 30 characters. Each character stands for 0-9, A-Z, "(", ")", ".", "/", "-" or blank for marketing purpose only)	5 Vdc, 0.45 A, 3.6 CFM min.	EN 62368-1: 2014, UL 507	TÜV, UL
	AVC	BAPA0805Z5HV above "Z" can be B or R;"V" can be ABCD where A, B, C, D may be A- Z, 0-9, - or blank.	5 Vdc, 0.5 A, 2.6 CFM min.	EN 62368-1: 2014, UL 507	TÜV, UL
	Interchangeable	Interchangeable	5 Vdc, 0.5 A max., 2.6 CFM min.	IEC 62368-1: 2014, EN 62368-1: 2014, UL 507	TÜV, UL
Power Distribution Switch (U2604)	CYPRESS SEMICONDUCTO R CORP	CYPD6127- 48LQXI CCG6SF, CYPD6227-96BZXI CCG6DF, CYPD6128- 48LQXI CCG6SF, CYPD6228-96BZXI CCG6DF	5Vdc, 3A (VBUS), 5Vdc, 215mA (VCONN) (Protective Current 4.2A, include drift)	IEC 62368-1: 2014 UL 2367	UL

	TEXAS INSTRUMENTS INCORPORATED	SN1810003, SN1810004, SN1905001, SN1905002, SN1905003, SN1905004, SN1905005, SN1905006, SN1905007, SN1905008, SN1908005, SN2001021, SN2001022, SN2001023, SN2001024, SN2001025, SN2001026, SN2001027, SN2001028, SN2001029, TPS65993, and TPS65994, may be followed by additional characters that do not affect the safety features of the device	Input Voltage: 4.9 - 5.5 Vdc Output Current Limit: PA_VBUS, PB_VBUS: 1.36A to 3.78A PA_CC1, PA_CC2, PB_CC1, PB_CC2: 0.47 to 0.66A	IEC 62368-1: 2014 UL 2367	UL
		AOZ1358LI-01	Input Voltage:3.8 -5.5 Vdc Output Current Limit:0.21 - 3.531 A	IEC 60950-1: 2005+A1+A2, UL 2367, CB test report issued by TÜV	TÜV,UL
	JOULWATT TECHNOLOGY CO LIMITED	(1)JW7115S-2SOTA#TRPBF (2)JW7115S-2.5SOTA#TRPBF	Series (1):Vin: 2.7-5.5Vdc, Vout: 2.7- 5.5Vdc, Iout: 2.05-2.35A; Series (2):Vin: 2.7Vdc-5.5Vdc, Vout:2.7Vdc-5.5Vdc, Iout:2.6-3.1A	IEC 62368-1: 2014 UL 2367	UL
	Global Mixed- mode Technology Inc. (GMT)	G*509**X1X2X3X4 X5 (*=Nil or one of alphabet from A to Z.; **=H,L,S,N; X1=02,05,10,1S,20 ,2S,25,30,3S,3A; X2=D,N,R,L; X3=T1,T7,TB,TO,T P,TR,P8; X4=1,2,3; X5=U,D,G,C)	Input voltage: 2.7 Vdc to 5.5 Vdc, Output Current Limit: 3 A Max.	IEC 62368-1: 2014 UL 2367	UL
	TEXAS INSTRUMENTS INCORPORATED	TPS2001x Where 'x' is C or D. May be followed by other characters that do not impact the safety feature of the device.	Input Voltage: 4.5 to 5.5 Vdc Output Current Limit: 3.6A	IEC 62368-1:2014 UL 2367	UL
LCD Panel	AUO	B140yyyyyyyy (y=0-9, A-Z, a-z, "-" or blank)	14.0" TFT, LED backlight type. Laminated structure.	--	--
	BOE	yy140yyy-yyyyyyy (y= 0-9, A-Z or blank)	14.0" TFT, LED backlight type. Laminated structure.	--	--
	InnoLux	N140yyyyyyyy (y=0-9, A-Z, a-z,	14.0" TFT, LED backlight type.	--	--

		-"-" or blank)	Laminated structure.		
	IVO	X140NVyy where x, y can be 0-9, A-Z, blank or symbol "-" for marketing purpose and no impact any critical safety components and constructions	14.0" TFT, LED backlight type. Laminated structure.	--	--
	LGD	LP140WU2	14.0" TFT, LED backlight type. Laminated structure.	--	--
	LGD	LP140WU1	14.0" TFT, LED backlight type. Laminated structure.		
	Interchangeable	Interchangeable	14.0" TFT, LED backlight type. Laminated structure.	--	--
Solid-State Drive (Optional)	Interchangeable	Interchangeable	3.3 Vdc or 5 Vdc	--	--
	Liteon OPTO Technology	LTE-R38381AS- YYY LTE-R38381AS- YYY-XXX Where "Y" can be used as "A Z", or "0 9" or blank for different viewing angle, where "X" can be used as "A Z", or "0 9" or blank for different customers	1A Exempt Group	IEC 62471: 2006	Test by SGS
	OSRAM Opto Semiconductors	SFH 4727AS A01	Max current 1500mA Exempt Group	IEC 62471: 2006	Test by Dekra
	OSRAM Opto Semiconductors	SFH 4727AS	Max. 3.4Vdc, 1A (optional) (Exempt Group	IEC 62471: 2006	Test by Dekra
Time of Flight (ToF) sensor	STMicroelectroni cs (R&D) LTD.	VL53L5CAV0GC, VL53L5CBV0GC, VL53L5CPV0GC	Laser Class 1 Max. 3.6A	IEC 60825-1: 2014+ A11:2021 EN 60825-1: 2014/A11: 2021 EN 50689:2021	OVE (AT 4205/M1)

Anexo 15 – Lista de componentes criticos HSN-Q38C-4

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity1
Adapter for rating 15Vdc, 3A (Optional)	Acbel / hp	TPN-AA07	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1: 2018	CB by TUV
(Alternate) (Optional)	Chicony Power Technology Co., Ltd. / hp	TPN-CA20	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V,	IEC 62368-1: 2018	CB by TUV

			3A; 45W Max. altitude: 5000 m, Tma: 35°C		
(Alternate) (Optional)	DELTA ELECTRONICS INC / hp	TPN-DA15	I/P: 100-240 Vac, 1.4 A Max., 50-60 Hz O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A altitude: 5000 m, Tma: 35°C	IEC 62368-1: 2014	CB by TUV
(Alternate) (Optional)	Lite-On Technology Corp / hp	TPN-LA19	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A Altitude: 5000 m, Tma: 35°C	IEC 62368-1: 2018	CB by TUV
(Alternate) (Optional)	Interchangeable	Interchangeable	O/P: 15 Vdc, 3 A max. Altitude: 3048m min., Tma: 35°C min	IEC 60950-1:2005 +A1+A2 IEC 62368-1: 2014 IEC 62368-1: 2018	CB by NCB
Adapter for rating 20Vdc, 3.25A (Optional)	Chicony Power Technology Co., Ltd. / hp	TPN-CA21	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1: 2018	CB by TUV
(Alternate) (Optional)	DELTA ELECTRONICS INC / hp	TPN-DA20	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1: 2018	CB by TUV
(Alternate) (Optional)	Honor / hp	TPN-HA01	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1: 2018	CB by TUV
(Alternate) (Optional)	Lite-On Technology Corp / hp	TPN-LA23	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1: 2018	CB by TUV
(Alternate) (Optional)	Lite-On Technology Corp / hp	TPN-LA12	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1:2014	CB by TUV

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Certificado de Conformidade

Certificate of Conformity

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(Alternate) (Optional)	Interchangeable	Interchangeable	O/P: 20 Vdc, 3.25A max. Altitude: 3048 m min., Tma: 35°C min	IEC 60950-1:2005 +A1+A2 IEC 62368-1: 2014 IEC 62368-1: 2018	CB by NCB
Adapter for rating 20Vdc, 5A (Optional) (For DIS type)	Chicony Power Technology Co., Ltd. / hp	TPN-CA31	Input : AC 100- 240V; 50-60Hz; 1.6A; Class I Output: USB-C DC 5.0V, 3.0A, 15.0W; 9V, 3A; 12V, 5A;15V, 5A; 20.0V, 5.0A, 100.0W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1: 2018	CB by TUV
(Alternate) (Optional) (For DIS type)	DELTA ELECTRONICS INC / hp	TPN-DA32	Input : AC 100-240V; 50-60Hz; 1.6A; Class I Output: DC 5.0V, 3.0A, 15.0W; 9V, 3A; 12V, 5A;15V, 5A; 20.0V, 5.0A, 100.0W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1: 2018	CB by TUV
(Alternate) (Optional) (For DIS type)	Lite-On Technology Corp / hp	TPN-LA31	Input : AC 100-240V; 50-60Hz; 1.6A; Class I Output:DC 5.0V, 3.0A, 15.0W; 9V, 3A; 12V, 5A;15V, 5A; 20.0V, 5.0A, 100.0W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1: 2018	CB by TUV
(Alternate) (Optional) (For DIS type)	Interchangeable	Interchangeable	O/P: 20.0Vdc, 5.0A max. Altitude: 3048 m min.,Tma: 35°C min	IEC 60950-1: 2005+A1+A2 IEC 62368-1:2014 IEC 62368-1:2018	CB by NCB UL
Battery pack (Li-ion type)	Amperex Technology Limited	HSTNN-AB1G	11.4Vdc, 4113mAh	IEC 62133-2: 2017 IEC 62368-1: 2018	CB by DEKRA
(Alternate)	Zhuhai CosMX Battery Co., Ltd.	HSTNN-OB3Q	11.4Vdc, 4113mAh	IEC 62133-2: 2017 IEC 62368-1: 2018	CB by UL/TUV
(Alternate)	Dynapack International Technology Corp	TPN-DB1Y	11.4Vdc, 4113mAh, 48.84Wh	IEC 62133-2: 2017 IEC 62368-1: 2018	CB by UL
(Alternate)	SIMPLO TECHNOLOGY CO LTD	TPN-IB1C	11.4Vdc, 4113mAh, 48.84Wh	IEC 62133-2: 2017 IEC 62368-1:2018	CB by UL
(Alternate)	Zhuhai CosMX Battery Co., Ltd.	HSTNN-OB3R	11.58V, 4646mAh	IEC 62133-2:2017 IEC 62368-1:2018	CB by TUV
(Alternate)	Dynapack International Technology Corp	TPN-DB1Z	11.58Vdc, 4646mAh, 56.04Wh	IEC 62133-2:2017 IEC 62368-1:2018	CB by UL
(Alternate)	Zhejiang Sunwoda Electronic Co., Ltd.	HSTNN-WB0H	11.58Vdc, 4646mAh	IEC 62133-2:2017 IEC 62368-1:2018	CB by UL
LCD Panel (LED backlight)	AUO	B140UAK02.3	14-inch TFTLCD, LED backlight	--	--
(Alternate)	Interchangeable	Interchangeable	14-inch TFTLCD, LED backlight	--	--
DC Fan (DIS type)	DELTA ELECTRONICS , INC.	ND75C39- 23H05	5Vdc, max. 500mA, min. 6.5CFM	--	--

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(Alternate) (DIS type)	SUNONWEALT H ELECTRIC MACHINE INDUSTRY CO., LTD	EG50050S1- CQ20-S9A	5Vdc, max. 500mA, min. 5.4CFM	--	--
(Alternate) (DIS type)	Forcecon Tech. Co., Ltd.	DFS5K12B15E6 AK	5Vdc, max. 500mA, min. 5.42CFM	EN 62368-1:2014 UL 507	TUV Rh UL
(Alternate) (UMA type)	DELTA ELECTRONICS , INC.	ND75C39- 23H04	5Vdc, max. 500mA, min. 3.5CFM	--	--
(Alternate) (UMA type)	SUNONWEALT H ELECTRIC MACHINE INDUSTRY CO., LTD	EG50040S1- CX40-S9A	5Vdc, max. 500mA, min. 3.6CFM	--	--
(Alternate) (UMA type)	Forcecon Tech. Co., Ltd.	DFS5K12B15E6 AC	5Vdc, max. 500mA, min. 4.72CFM	EN 62368-1: 2014 UL 507	TUV Rh UL
SSD (Optional)	Interchangeable	Interchangeable	3.3Vdc or 5Vdc, optional	IEC 60950-1:2005 +A1+A2 IEC 62368-1: 2018	CB by NCB
PCB	CHUAN YI COMPUTER (SHENZHEN) CO LTD	CM-4	V-0, 130°C	UL 796	UL
(Alternate)	T-MAC TECHVEST PCB CO LTD	YAML	V-0, 130°C	UL 796	UL
(Alternate)	HANNSTAR BOARD CORP	MV-6	V-0, 130°C	UL 796	UL
(Alternate)	TRIPOD (WUXI) ELECTRONIC CO LTD	2-9	V-0, 130°C	UL 796	UL
(Alternate)	Interchangeable	Interchangeable	Min. V-1, min. 105°C	UL 796	UL
Metal Enclosure (Bottom case) (Optional)	Interchangeable	Interchangeable	Metal, min. 0.6mm thickness	--	--
- Internal plastic enclosure	Interchangeable	Interchangeable	Min. V-2	UL 94 UL 746C	UL
Bezel	LG CHEM LTD	LUPOY GN5101RF(#) (#) – May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, LI912W, AF303G, AF303S, XR404T, XR407D, XR407E, HF380X, XR404E, XR404- G, XR404-P and LUMILOY GN2108FI.	V-0, min. thickness 0.75 mm, 60°C	UL 94 UL 746C	UL
(Alternate)	TEIJIN LIMITED RESIN AND PLASTIC	TN-3733B(#)	V-0, min. thickness 1.0 mm, 60°C	UL 94 UL 746C	UL
(Alternate)	Interchangeable	Interchangeable	Min. V-1	UL 94 UL 746C	UL
Plastic Enclosure (Bottom case) (Optional)	LG CHEM LTD	LUPOY ER2253F	V-0, min. thickness 0.8 mm, 80°C	UL 94 UL 746C	UL

(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	GXV-35(cc)U(#) (cc) – 10 through 30. (#) – Suffix optional	V-0, min. thickness 0.75 mm, 80°C	UL 94 UL 746C	UL
Plastic Enclosure (for top cover enclosure)	LG CHEM LTD	LUPOY GN5151RFA, LUPOY GN5151RFL	V-0, min. thickness 1.0 mm, 60°C	UL 94 UL 746C	UL
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-3725B(#) (#) – Suffix optional	V-0, min. thickness 1.0 mm, 100°C	UL 94 UL 746C	UL
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-7000(v) (v) – May be suffixed with any one or two letters except F and T	V-0, min. thickness 1.5 mm, 85°C	UL 94 UL 746C	UL
(Alternate)	LG CHEM LTD	LUPOY ER5001RFD	V-0, min. thickness 1.5 mm, 80°C	UL 94 UL 746C	UL
Internal plastic frame Rear side (Near hinge)	LG CHEM LTD	LUPOY GN5151RFA, LUPOY GN5151RFL	V-0, min. thickness 1.0 mm, 60°C	UL 94 UL 746C	UL
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-3725B(#) (#) – Suffix optional	V-0, min. thickness 1.0 mm, 100°C	UL 94 UL 746C	UL

Anexo 15 – Lista de componentes criticos HSN-Q39C-4 (Oaken14)

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity 1)
Adapter for rating 15Vdc, 3A (Optional)	Acbel / hp	TPN-AA07	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1:2018	CB by TUV UL
(Alternate) (Optional)	Chicony Power Technology Co., Ltd. / hp	TPN-CA20	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A; 45W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1:2018	CB by TUV UL
(Alternate) (Optional)	DELTA ELECTRONICS INC / hp	TPN-DA15	I/P: 100-240 Vac, 1.4 A Max., 50-60 Hz O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A altitude: 5000 m, Tma: 35°C	IEC 62368-1: 2014	CB by TUV UL
(Alternate) (Optional)	Lite-On Technology Corp / hp	TPN-LA19	I/P: 100-240 Vac, 50-60 Hz, 1.4 A O/P: DC 5V, 3A; 9V, 3A; 12V, 3A; 15V, 3A Altitude: 5000 m, Tma: 35°C	IEC 62368-1:2018	CB by TUV UL

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(Alternate) (Optional)	Interchangeable	Interchangeable	O/P: 15 Vdc, 3 A max. Altitude: 3048 m min., Tma: 35°C min	IEC 60950-1:2005 (2nd Edition); Am1:2009+Am2:2 013 IEC 623681:2014 IEC 62368-1:2018	CB (issued by National Certificatio n Body)
Adapter for rating 20Vdc, 3.25A (Optional)	Chicony Power Technology Co., Ltd. / hp	TPN-CA21	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1:2018	CB by TUV UL
(Alternate) (Optional)	DELTA ELECTRONICS INC / hp	TPN-DA20	I/P: 100-240 Vac, 50-60 Hz, 1.7 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1:2018	CB by TUV UL
(Alternate) (Optional)	Honor / hp	TPN-HA01	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1:2018	CB by UL UL
(Alternate) (Optional)	Lite-On Technology Corp / hp	TPN-LA23	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1:2018	CB by TUV UL
(Alternate) (Optional)	Lite-On Technology Corp / hp	TPN-LA12	I/P: 100-240 Vac, 50-60 Hz, 1.6 A O/P: DC 5V, 3A; 9V, 3A; 12V, 5A; 15V, 4.33A; 20V, 3.25A; 65W Max. altitude: 5000 m, Tma: 35°C	IEC 62368-1: 2014	CB by TUV UL
(Alternate) (Optional)	Interchangeable	Interchangeable	O/P: 20 Vdc, 3.25A max. Altitude: 3048 m min., Tma: 35°C min	IEC 60950-1:2005 (2nd Edition); Am1:2009+Am2:2 013 IEC 623681:2014 IEC 62368-1:2018	CB (issued by National Certificatio n Body)
Battery pack (Li-ion type)	Amperex Technology Limited	HSTNN-AB1G	Ratings: 11,4 Vdc, 4113 mAh	IEC 62133-2:2017, IEC 62368-1:2018	CB by DEKRA, UL
Alternate)	Zhuhai CosMX Battery Co., Ltd.	HSTNN-OB3Q	11.4Vdc, Rated capacity: 4113mAh	IEC 62133-2:2017, IEC 62368-1:2018	CB by UL/TUV, UL
Alternate)	Dynapack International Technology Corp	TPN-DB1Y	11.4Vdc, 4113mAh, 48.84Wh	IEC 62133-2:2017, IEC 62368-1:2018	CB by UL, UL

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Alternate)	SIMPLO TECHNOLOGY CO LTD	TPN-IB1C	11.4Vdc, 4113mAh, 48.84Wh	IEC 62133-2:2017, IEC 62368-1:2018	CB by UL, UL
Alternate)	Zhuhai CosMX Battery Co., Ltd.	HSTNN-OB3R	11.58V, Rated capacity: 4646mAh	IEC 62133-2:2017, IEC 62368-1:2018	CB by TUV, UL
Alternate)	Dynapack International Technology Corp	TPN-DB1Z	11.58Vdc, 4646mAh, 56.04Wh	IEC 62133- 2:2017, IEC 62368-1:2018	CB by UL, UL
Alternate)	Zhejiang Sunwoda Electronic Co.,Ltd.	HSTNN-WB0H	11.58Vdc, 4646mAh	IEC 62133-2:2017, IEC 62368-1:2018	CB by UL, UL
Panel (LED backlight)	AUO	B140UAK02.3	14 inch TFTLCD, LED backlight	Applicable parts of IEC 60950- 1:2005+A1+A2	Tested in appliance
(Alternate)	Interchangeable	Interchangeable	14 inch TFTLCD, LED backlight	Applicable parts of IEC 60950- 1:2005+A1+A2	Tested in appliance
DC Fan (Alternate)	DELTA ELECTRONICS, INC.	ND75C39-23H04	5 Vdc, max:500mA, min:3.5CFM	Applicable parts of IEC 62368-1:2018	Tested in appliance
(Alternate)	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO.,LTD	EG50040S1-CX40-S9A	5 Vdc, max:500mA, min:3.6CFM	Applicable parts of IEC 62368-1:2018	Tested in appliance
(Alternate)	Forcecon Tech. Co., Ltd.	DFS5K12B15E6A C	5 Vdc, max:500mA, min. 4.72CFM 0.66A	EN 62368-1:2014 UL 507	TUVRh, UL
(Alternate)	EXCELLIANCE MOS CORPORATIO	EM5213AJ-25	Input Voltage: 2.5 to 5.5 Vdc, Output Continuous Rating: 2.5A, Output Current Limit:2.5A	IEC 60950-1: 2005 (2nd Edition); Am 1:2009 + Am2: 2013	CB by UL, UL
(Alternate)	TEXAS INSTRUMENTS INCORPORATE D	TPS2546,maybe followed by Q, may be followed by RTE, may be followed by R or T, may be followed by Q1	Input Voltage: 4.5 to 5.5 Vdc Output Continuous Rating: 2.5 A Output Current Limit: 3.1A	IEC 62368-1:2014	CB by UL, UL
(Alternate)	ALPHA & OMEGA SEMICONDUCT OR INC	AOZ1358LI-01	Input Voltage: 3.8 - 5.5 Vdc Output Continuous Rating: 0.12 - 3.0 A Output Current Limit: 0.21 - 3.531 A Ambient: -40 to 85°C	IEC 62368-1: 2014 (2nd) UL 62368-1, CAN/CSA C22.2 No. 62368-1-14	CB by UL, UL
(Alternate)	DIODES INC	PI5USB2546ZHE X, PI5USB2546ZH DEX	Input Voltage: 4.5-5.5 Vdc Continuous Rating: 30 mA to 2.5 A Current Limit: 100 mA to 3.18 A	UL 2367 (Ed1), IEC 62368-1:2014 (2nd)	CB by UL, UL
(Alternate)	JOULWATT TECHNOLOGY CO LIMITED	JW7115S-2.5SOTA#TRPBF	Vin: 2.7Vdc-5.5Vdc, Vout:2.7Vdc-5.5Vdc,Iout:2.6-3.1A	IEC 62368-1:2014	CB by UL, UL
(Alternate)	GLOBAL MIXED-MODE TECHNOLOGY INC	G3712X1X2X3X4 GD712X1X2X3X4 (X1=A, B, C, D or null; X2=B6; X3= 1 or 2; X4=U or D)	Input voltage: 4.0 Vdc - 5.5 Vdc Output current limit: 1.0-4.0 A	IEC 62368-1: 2014, UL 2367	CB by TUV, UL
(Altrenate)	FORTUNE ADVANCED TECHNOLOGY CO	FA7623AEA5R	Input Voltage: VIN= 3.0 ~~5~~.5 Vdc	IEC 62368-1:2018	CB by UL, UL

	LTD		Output Continuous Rating: VOUT= 2.5 A Current Limit Rating: VOUT= 5.0 A Ambient: -40 to 85°C		
(Alternate)	DIODES INC	AP22804AW5-7	Input Voltage: 2.7 - 5.5Vdc Output Continuous Rating: 2.5A Output Current Limit: 3.3A	IEC 62368-1:2014	CB by UL, UL
(Alternate)	Global Mixed- mode Technology Inc..	G*509**X1X2X3X 4X5 (*=Nil or one of alphabet from A to Z.; **=H,L,S,N; X1=02, 05,10,1S,20,2S,25 ,30,3S,3A;X2=D,N,R,L; X3=T1,T7,TB,TO, TP, TR,P8; X4=1,2,3; X5=U,D,G,C)	DC 2.7V 5.5V, 3A Max.	IEC 62368-1:2018	CB by TUV, UL
Power distribution switch (for HDMI port)	Global Mixedmode Technology Inc.	G5250Q1T73U	Input Voltage: 2.7 to 5.5 Vdc, Output Continuous Rating: 0.2A Output Current Limit: 0.5A	IEC 60950-1: 2005+A1+A2 UL 2367	CB by TUV, UL
Polyswitch (for HDMI port) (optional)	CYG WAYON CIRCUIT PROTECTION CO LTD	LP-ISML150* (* May be followed by H or F.(where "H" is Halogen free "F" is Lead And free)	8Vdc, Ih=1.5A, It=3.0A, CA3	IEC 62319-1-1:2005 EN 62319-1-1:2005 UL1434 (First Edition)	CB by TUV, UL
Speakers (Two provided)	Interchangeable	Interchangeable	Each rated 4 +15% ohm, 2.5W max.	Applicable parts of IEC 62368-1:2018	Tested in appliance
SSD (optional)	Interchangeable	Interchangeable	3.3Vdc or 5Vdc, optional.	IEC 609501:2005+A1 +A2, CAN/CSA C22.2 No. 60950-1, UL 60950-1	CB by NCB, cUL, UL
PCB	Interchangeable	Interchangeable	V-1 min., 105 degree C min	UL 796 (Eleventh Edition)	UL
Metal Enclosure (Bottom case)	Interchangeable	Interchangeable	Metal , 0.6 mm thickness min	--	--
- Internal plastic enclosure	Interchangeable	Interchangeable	Min. V-2	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL
Plastic Enclosure (Bottom case) (Alternate)	LG CHEM LTD	LUPOY ER2253F	V-0, min. thickness 0.8 mm, 80°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	GXV-35(cc)U(#) (cc) – 10 through 30. (#) Suffix optional	V-0, min. thickness 0.75 mm, 80°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL
Bezel	LG CHEM LTD	LUPOY GN5101RF(#) (#) May be followed by optional suffix letter from A-Z incl., except F, and except Grades HT700B, LI912A, LI912W, AF303G, AF303S, XR404T,	V-0, min. thickness 0.75 mm, 60°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL

		XR407D, XR407E, HF380X, XR404E, XR404-G, XR404- P and LUMILOY GN2108FI.			
(Alternate)	TEIJIN LIMITED RESIN AND PLASTIC	TN-3733B(#)	V-0, min. thickness 1.0 mm, 60°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL
(Alternate)	Interchangeable	Interchangeable	Min. V-1	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL
Plastic Enclosure (for top cover enclosure)	LG CHEM LTD	LUPOY GN5151RFA, LUPOY GN5151RFL	V-0, min. thickness 1.0 mm, 60°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-3725B(#) (#) – Suffix optional	V-0, min. thickness 1.0 mm, 100°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-7000(v) (v) – May be suffixed with any one or two letters except F and T	V-0, min. thickness 1.5 mm, 85°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL
(Alternate)	LG CHEM LTD	LUPOY ER5001RFD	V-0, min. thickness 1.5 mm, 80°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL
Internal plastic frame Rear side (Near hinge)	LG CHEM LTD	LUPOY GN5151RFA, LUPOY GN5151RFL	V-0, min. thickness 1.0 mm, 60°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL
(Alternate)	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	TN-3725B(#) (#) – Suffix optional	V-0, min. thickness 1.0 mm, 100°C	UL 94 (Sixth Edition), UL 746C (Seventh Edition)	UL
IR Camera (optional)	Chicony	CKFNE5421004330LH	SELV, Class III	--	--
IR Camera (Optional) (Alternate)	Luxvisions	ABG505N3	SELV, Class III	--	--
IR Camera (Optional) (Alternate)	Rayprus	HN2522	SELV, Class III	--	--
IR Camera (Optional)	TFC	YHWG	SELV, Class III	--	--
Mylar sheet under Keyboard	Interchangeable	Interchangeable	Rated min. V-0 or VTM-0	UL 94	UL
Mesh on rear openings	SICHUAN DONGFANG INSULATING MATERIAL CO LTD	DFR700, DFR700F, DFR700-83, DFR700-83A, DFR700-83B	VTM-0, min. 0.05mm thickness, 80°C	UL 94	UL
Adhesive for Mesh	Jiangsu SIDIKE New Materials Science & Technology Co Ltd	DS-5	--	--	Tested in appliance
(Alternate)	Jiangsu SIDIKE New Materials Science & Technology Co Ltd	DS-10	--	--	Tested in appliance
Sponge near heatink	Century Creation International Co., Ltd.	CR-2030B	min. V-0	UL 94	UL
Adhesive for Sponge used	Sony	T4000	--	--	Tested in appliance

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MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

OFÍCIO Nº 284.2025.CPL.1679395.2025.001317

Manaus, *na data da assinatura.*

Ao Senhor

CARLOS ALEXANDRE DOS SANTOS NOGUEIRA

Chefe do Setor de Infraestrutura e Telecomunicação

Assunto: Análise de Propostas de Preços referente ao **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ SRP**.

Senhor Chefe,

Cumprimentando-o com o presente, informamos que tramita nesta Comissão Permanente de Licitação o Processo SEI n.º 2025.001317, referente ao **PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP,** cujo objeto é o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses*.

Isto posto, encaminho os autos em epígrafe a esse **Setor de Infraestrutura e Telecomunicação - SIET,** para **análise e manifestação** quanto aos documentos apresentados pela licitante abaixo elencada:

1. **TORINO INFORMÁTICA LTDA.** , CNPJ (MF) n.º 03.619.767/0005-15, para o **Item 3** (doc's. 1679393).

Atenciosamente,

Maurício Araújo Medeiros

Pregoeiro - PORTARIA 606/2025/SUBADM

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 23/07/2025, às 10:43, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1679395** e o código CRC **CDBAE1F4**.

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - CEP 69000-000 - Manaus - AM - www.mpam.mp.br

PARECER Nº 26.2025.SIET.1679784.2025.001317

PROCESSO DE COMPRA: 2025.001317 Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ SRP Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317
OBJETO: Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.

1. **Relatório**

Trata-se de pedido de compatibilização da proposta da empresa **TORINO INFORMÁTICA LTDA.** , com documentos enviados para o **ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"** , na fase de disputas do Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ, documento 1679393, recebido no dia 23/7/2025.

2. **Da Análise**

2.1 Produto ofertado

Item	Descrição	Quantidade	Produto Ofertado
1	**ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"** **Marca/Modelo de Referência:** Lenovo ThinkPad T14 GEN 5, Dell Latitude 5450.	300	**ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"** NOTEBOOK HP 640 G11 PROC INTEL ULTRA 5 135U - VPRO MEMÓRIA 16GB(2X8) DDR5 5600 HD SSD 256GB NVME WEBCAM 5MP WIFI6 + BT AX211 TELA 14 FHD BATERIA 56WHR WINDOWS 11 PROFESSIONAL SOFTWARE ABSOLUTE GARANTIA 5 ANOS ACOMPANHA: MOUSE USB 1000 DPI HP E MOCHILA PARA NOTEBOOK.

2.2 Análise comparativa

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. PLACA PRINCIPAL (PLACA MÃE)		
1. A placa mãe deve ser construída pelo próprio fabricante do microcomputador ou produzida sob a especificação do mesmo, não sendo aceito placas de livre comercialização no mercado, nem em regime de OEM;	□	
2. Deve possuir, no mínimo, 1 (um) slot para memória RAM, "do tipo DDR-5 SODIMM", permitindo a instalação de até 40 (quarenta) Gigabytes, 8 (oito) soldadas diretamente na placa e até 32 (trinta e dois) instaladas no slot. Admite-se 2 slots com 1 módulo de memória cada, como configuração superior, em substituição aos módulos soldados na placa principal;	□	
3. Deve suportar tecnologia Dual Channel de utilização de memória RAM;	□	
4. Deve possuir 1 (um) Socket M.2 para SSD SATA ou NVMe;	□	
5. Deve possuir 1 (um) Socket M.2 Para Cartões Wi-Fi/Bluetooth;	□	
6. Deve possuir recursos DASH 1.0 (Desktop and mobile Architecture for System Hardware), ou tecnologia minimamente equivalente;	□	
7. Deve ser compatível com Energy Star 7.0/7.1, ou tecnologias superiores;	□	

DESCRIÇÃO	PARECER	OBSERVAÇÕES
8. Deve possuir capacidade de desligamento do vídeo e do disco rígido após tempo determinado pelo usuário, religamento por acionamento de teclado ou mouse, bem como função de economia de energia para monitor, placa mãe e unidades de armazenamento internas;		
9. Deve possuir chip TPM (Trusted Platform Module), versão 2.0, ou superior, soldado à placa principal, e destinado ao armazenamento de senhas, certificados digitais e chaves criptográficas em conformidade com as especificações do Trusted Computing Group;		
10. Deve possuir suporte a virtualização por hardware;		
11. Deve possuir suporte a implementação de extensões de virtualização de I/O por hardware;		
12. Deve possuir suporte a aceleração de segurança AES no hardware;		
13. Deve possuir suporte à tecnologia de acesso remoto out-of-band embutida no hardware;		
14. Deve possuir controle da velocidade de rotação do cooler do processador de forma automática, de acordo com a variação de temperatura da CPU;		
15. Deve suportar boot por pendrive ou disco conectado a uma porta USB 3.1 ou 3.2;		
16. Deve suportar a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/https boot.		
2. BIOS		
1. O BIOS deve ser desenvolvido pelo mesmo fabricante do equipamento ou customizado por ele;		
2. O fabricante do equipamento, deverá ser totalmente responsável pelo BIOS fornecido juntamente com a placa mãe e pela atualização do mesmo, devendo promover as alterações que se façam necessárias e corrigir problemas ou danos causados ao equipamento em razão desse BIOS ou de procedimentos de atualização deste, (que poderão ser acompanhados pela empresa caso haja necessidade), durante o período de garantia do equipamento;		
3. BIOS em português ou inglês, desenvolvido em conformidade com a especificação UEFI 2.5 ou superior (http://www.uefi.org) e capturáveis pela aplicação de inventário SCCM (System Center Configuration Manager);		
4. O fabricante deverá comprovar a compatibilidade com o padrão UEFI através do site http:// www.uefi.org/members, na categoria membros;		
5. Deve ser do tipo flash EPROM, atualizável por software, compatível com o padrão plug-and-play;		
6. Deve ser lançado a partir de 2016 e entregue na versão mais atual disponibilizada pelo fabricante;		
7. Deve ter suporte a ACPI, ou tecnologia superior;		
8. Deve ser desenvolvido de acordo com o padrão de segurança NIST 800-147 ou ISO/IEC 19678:2015, para garantir a integridade do BIOS;		
9. Deve possuir recursos de controle de permissão através de senhas, sendo uma para inicializar o computador e outra para acesso e alterações das configurações do BIOS;		
10. Deve possuir software embarcado no BIOS com funções de diagnóstico de problemas, e gerenciamento com as seguintes características: 1. Permitir o teste do equipamento, com independência do sistema operacional instalado, o software de diagnóstico deve ser capaz de ser executado (inicializado) a partir da UEFI (Unified /Extensible Firmware Interface) ou do Firmware do equipamento através do acionamento de tecla função (F1...F12); 2. O software de diagnóstico deverá ser capaz de informar, através de tela gráfica: O fabricante e modelo do equipamento, processador, memória RAM, firmware, e capacidade do disco rígido;		
11. Deve possuir ferramenta que possibilite realizar a formatação definitiva dos dispositivos de armazenamento conectados ao equipamento, desenvolvida em acordo com o padrão de segurança NIST 800-88 ou ISO/IEC 27040:2015. Caso esta ferramenta não seja nativa do BIOS, deverá ser oficialmente homologada pelo fabricante do equipamento;		
12. Deve possuir opção para exportar/importar configurações. No caso de ferramenta externa fornecida para atender esse item, a mesma deve ser disponibilizada no web site de suporte do fabricante, em conjunto com outras ferramentas relacionadas e homologadas para o modelo do equipamento;		
13. Deve oferecer a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela **CONTRATANTE**;		
14. Deve possuir campo não editável com o número de série do equipamento gravado em memória não volátil e campo editável que permita inserir identificação customizada (identidade patrimonial com pelo menos 10 caracteres). Serão aceitos BIOS com reprogramação via software desde que estes estejam devidamente licenciados para o equipamento e disponibilizados para download no web site de suporte do fabricante;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
15. Deverá permitir o gerenciamento remoto do microcomputador mesmo desligado, desde que energizado pela rede elétrica e conectado localmente à rede de dados, permitindo ligar e desligar o microcomputador remotamente, com controle de acesso, e com possibilidade de definir horários programados; 1. Deve permitir acesso remoto através da rede ao POST (procedimento de inicialização) e BIOS para leitura e gravação, mesmo com o equipamento desligado; 2. Deverá permitir acesso remoto ao sistema operacional e processo de inicialização do microcomputador através de interface gráfica, com controle remoto do mouse e teclado (KVM remoto), independente do suporte de aplicações locais ou estado do sistema operacional; 3. Possuir a capacidade de inventário remoto de Hardware mesmo com o equipamento desligado.		
3. PROCESSADOR		
1. Deverá possuir, 2 (dois) núcleos, no mínimo, e 12 (doze) threads de processamento com frequência de operação interna básica de, no mínimo, 1.6 GHz;		
2. Em caso de processadores com arquitetura de computação heterogênea (big.LITTLE), só serão contabilizados os cores voltados para performance, na contagem mínima de núcleos e ciclos de clock base (MHz);		
3. Memória cache total de, no mínimo, 12MB;		
4. O processador ofertado deverá ser Intel Core Ultra 5, "de 1ª geração", ou AMD Ryzen 5 PRO, "serie 8000", admitindo-se famílias ou gerações mais novas;		
5. O processador deverá ser da última geração disponível utilizada pelo fabricante do equipamento, **com desempenho mínimo de 17.000 (dezessete mil) pontos**, considerando o uso pleno de todos os núcleos e sem a aplicação de configurações específicas para aumento ou modificação de desempenho, como "overclock", "undervoltage", "overvoltage" ou quaisquer outras que não estejam em conformidade com os padrões definidos pelo fabricante; 1. O desempenho será comprovado por intermédio de resultados de BenchMark, disponíveis em: http://www.cpubenchmark.net/cpu_list.php. 2. Será admitida uma margem de tolerância de 2% (dois por cento) do desempenho mínimo exigido.		
6. Deve possuir tecnologia de controle dinâmico de frequência do processador para núcleos individuais e ou múltiplos núcleos, podendo atingir até 4.4 GHz, no mínimo;		
7. Deve possuir controlador com suporte à memória RAM do tipo DDR5-5600 MT/s, ou superior;		
8. Deverá possuir tecnologia de fabricação de 7 nm (sete nanômetros) ou inferior;		
9. TDP(Thermal Design Power) mínimo de 12W, e máximo de 58W, declarado pelo fabricante;		
10. Deve possuir instruções do padrão AVX 2.0, ou superior;		
11. Deve possuir instruções do padrão SSE4.1/4.2, ou superior;		
12. Deve possuir instruções que implementem extensões de virtualização de hardware;		
13. Deve possuir instruções AES-NI embutidas;		
14. O proponente deverá declarar em sua proposta comercial o modelo do processador ofertado.		
4. MEMÓRIA RAM		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. Deverá possuir, no mínimo, 16 (dezesseis) Gb de memória RAM instalados, com capacidade de expansão mínima de 40 (quarenta) Gb;		
2. Deverá ser do tipo DDR-5/LPDDR-5 SODIMM ou superior e possuir no mínimo, 5600 MT/s de velocidade de comunicação com o barramento principal;		
3. A implementação do total de memória RAM deve utilizar 1 (um) módulo, de 8 (oito) GB, e mais 8 (oito) GB soldada diretamente à placa principal, utilizando tecnologia dual channel; 1. Admite-se que ambos os módulos sejam do tipo SODIMM, e sejam removíveis como configuração superior a mencionada acima;		
4. O(s) módulo(s) removível(eis) deve(m) ser instalado(s) durante o processo de manufatura do computador, e homologado(s) como parte do equipamento, inclusive estando coberto(s) pela garantia e suporte como descrito no Termo de Referência.		
5. UNIDADE DE ARMAZENAMENTO		
1. Deve possuir, no mínimo, 1 (uma) unidade padrão tipo Solid State Drive (SSD) interna instalada do tipo M.2, na capacidade mínima de 256 GB e velocidade mínima de gravação de 1.200MB/s;		O proponente descreveu em sua proposta: "*HD SSD 256GB NVME*" No **QuickSpecs**, seção **Storage and Drives**, encontramos os seguintes discos de 256Gb: • 256GB PCIe 2280 NVMe Self Encrypted OPAL2 Value Solid State Drive, com Maximum Sequential Write de 900 MB/s ±20%; • SSD 256GB 2280 PCIe NVMe Value, com Maximum Sequential Write de 900 MB/s ±20%. Pelo exposto, nenhum dos dois discos atendem à velocidade mínima de gravação de 1.200 Mb/s.
2. Deve utilizar interface tipo M.2 PCIe 4.0, com o protocolo NVMe, ou superior;		
3. Deve ser instalada durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência.		
6. CONECTIVIDADE		
1. Deverá possuir no mínimo 4 (quatro) portas USB; 1. Do total de portas, no mínimo 2 (duas) devem ser do tipo USB 3.2 tipo A; 2. No mínimo 1 (uma) deve ser do tipo USB 3.2 Tipo C ou Thunderbolt;		
2. Possuir, no mínimo, 1 (uma) porta de vídeo adicional, suportando a utilização de 1 (um) monitor auxiliar simultânea e independentemente da tela integrada;		
3. O tipo da porta auxiliar de vídeo supracitada deve ser HDMI 2.0 ou DisplayPort 1.2. Em caso de versões miniaturizadas destas, adaptadores revertendo para elas devem ser fornecidos sem custo adicional.		
7. INTERFACES DE REDE		
1. Deve possuir, no mínimo, 1 (uma) interface de rede RJ45 compatível com os padrões 10, 100 e 1000 Mbps, autosense, full-duplex e plug-and-play, configurável totalmente por software e com função Wake On Lan instalada e em funcionamento;		
2. A controladora ethernet, deverá ser do tipo "onboard", e suportar recurso WOL (Wake On LAN);		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
3. Deve possuir, no mínimo, 1 (uma) interface de rede sem fios no padrão Wi-Fi 6 (802.11 B/G/N/AX), com velocidade de até 1.73Gbps, Tecnologia MU-MIMO, banda dupla em 2.4Ghz e 5Ghz, e suporte a Bluetooth 5.3 ou superior;		
4. As controladoras Wi-Fi e Bluetooth, deverão estar em um único cartão M.2, conectado em slot específico na placa mãe, que deve ser instalado durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência;		
5. A interface Wireless ofertada deve possuir, na data da entrega da proposta, homologação junto à **ANATEL** com certificado disponível publicamente no endereço eletrônico desta agência, conforme a Resolução n.º 242 de 30 de novembro de 2000.		
8. CONTROLADORA DE VÍDEO		
1. Deve possuir controlador 3D/2D com suporte a DirectX 12, ou superior;		
2. Deve suportar Pixel Shader 3.0, ou superior;		
3. Deve suportar OpenGL 4.5, ou superior;		
4. Deve suportar HDCP ou HDR;		
5. Deve suportar a resolução mínima de 1920 X 1080 @ 60 Hz;		
6. Deve possuir tecnologia de controle dinâmico de frequência, podendo atingir, no mínimo, 1.35GHz;		
7. Deve suportar, no mínimo, o uso de 3 (três) monitores simultânea e independentemente.		
9. CONTROLADORA DE SOM E MULTIMÍDIA		
1. O equipamento deve possuir uma controladora de som integrada, do tipo "onboard";		
2. Deve possuir, no mínimo, uma interface de som com 1 (um) conector combinado para fone de ouvido e microfone, de 3,5 mm;		
3. Deve possuir, no mínimo, 2 alto-falantes internos, com 2 Watt RMS de potência cada, compatíveis com a controladora de som;		
4. Deve incorporar microfone(s), com cancelamento de ruído, voltados para captar o som do usuário em frente ao computador.		
10. TECLADO		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. Deve ser integrado e retroiluminado no idioma padrão, português (Brasil), ABNT-II;	⚠	Não foi possível verificar qual das configurações de teclados disponíveis atende ao requisito de retroiluminação. *"Keyboard HP Standard Keyboard, spill-resistant, backlit, Durakey keyboard. 23* *HP Standard Keyboard, spill-resistant, Privacy, backlit, Durakey keyboard. 23* *HP Standard Keyboard, spill-resistant keyboard*." **Providências** - Declarar na proposta, inclusive o atendimento do requisito do idioma padrão português (Brasil), ABNT-II.
2. Deve possuir teclas multimídia, com no mínimo, aumentar e diminuir volume, além do mute; 1. Admite-se a utilização de teclas de função (F1...F12), para tais ações.	□	
11. DISPOSITIVOS APONTADORES		
1. Deve possuir um touchpad integrado, com dois botões, e área útil de 4 (quatro) pol², no mínimo; 1. Admite-se que os botões sejam integrados, como cliques diretos na parte inferior do touchpad;	□	
2. Deve suportar gestos de rolagem, ou possuir teclas, área ou dispositivo dedicado;	□	
3. Deve acompanhar um mouse adicional, da mesma cor e do mesmo fabricante do equipamento ofertado; 1. Deve ser óptico, com conexão USB, com 3 (três) botões e sistema de rolagem de página, com formato ergonômico e com design ambidestro, devendo possuir resolução mínima por hardware de 800 dpi.	□	
12. TELA INTEGRADA		
1. Deve ser de tecnologia IPS (In-Plane Switching) ou VA (Vertical Alignment);	□	
2. Tamanho de 14 polegadas widescreen, no mínimo;	□	
3. Deve suportar, no mínimo, 16 milhões de cores;	□	
4. Resolução mínima de 1920x1080@60Hz;	□	
5. Ângulo de visão mínimo de 85° horizontal e vertical;	□	
6. Deve possuir brilho mínimo de 300 cd/m².	□	
13. WEBCAM		
1. O equipamento deve possuir uma webcam integrada, de 1.3 megapixels, com resolução de vídeo FHD, no mínimo, não sendo aceita solução externa;	□	
2. Deve possuir mecanismo de bloqueio por tampa, ou desativação mecânica, como solução de privacidade, também integrada ao equipamento.	□	
14. FORMATO DE MANUFATURA E FONTE DE ALIMENTAÇÃO		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. O equipamento deve ser produzido no formato laptop.		
2. O peso total do equipamento sem a fonte, não deve exceder os 1.6 Kg (um quilo e seiscentos gramas);		
3. A dobradiça do equipamento, deve ser construída em metal, e com articulação de 180º;		
4. O material do gabinete deve ser de estrutura livre de BFR e outros materiais tóxicos e/ou antiecológicos;		
5. Deve possuir botão de liga/desliga e luz de indicação de computador ligado (power-on) em local visível e acessível do computador, quando ele estiver aberto;		
6. Deve possuir leitor biométrico integrado, em área acessível, quando o notebook estiver aberto;		
7. Deve oferecer a possibilidade de, se demandado, aplicar logo oficial da CONTRATANTE, com área de impressão mínima de 3,00 x 2,72 cm, através de sistema de gravação direta como aplicação em laser, não sendo admitido o uso de adesivagem, serigrafias ou adaptações semelhantes. A gravação deverá ser feita apenas na parte inferior do laptop, visando medidas de segurança;	⚠	Na declaração do fabricante, ele diz: "*Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará as solicitações de customização à HP de modo a atender plenamente as exigências edilícias.* ***Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas***;" **Providências:** - Declarar na proposta.
8. O computador deverá possuir fenda de encaixe padrão "Kensington" ou “Noble Wedge” para utilização de cabo de aço do mesmo tipo;		
9. Deve ser fornecido com fonte de carregamento/alimentação do mesmo fabricante e compatível com o equipamento, com potência suficiente para suportar todos os dispositivos internos em suas configurações máximas permitidas, além de possibilitar o pleno carregamento da bateria do equipamento;		
10. A fonte de alimentação deve possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);		
11. A fonte deve possuir tensão de entrada 110 e 220 Volts de forma automática;		
12. A fonte deve fornecer uma alimentação mínima de 65W para o equipamento;		
13. Os plugues de conexão à rede elétrica devem seguir o padrão NBR 14136:2002.		
15. BATERIA		
1. Deve ser integrada ao corpo do equipamento, (não destacável);		
2. Potência mínima de 39 wh;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
3. Deve possuir no mínimo 3 (três) células de carregamento; 1. Deve ser capaz de manter o equipamento funcionando ininterruptamente por no mínimo 11 (onze) horas, conforme o padrão de teste do aplicativo MobileMark 2018.		
16. SISTEMA OPERACIONAL E SOFTWARES COMPLEMENTARES		
1. Deve acompanhar o equipamento licença OEM do sistema operacional Microsoft Windows 11 Professional de 64 bits, ou versão mais recente, no idioma Português Brasil;		
2. O equipamento deve ser entregue com o Windows 11 Professional 64 bits, ou versão mais recente instalado;		
3. Cada equipamento deve incluir uma licença específica de software dedicado para: • Controle: Funções de bloqueio e desbloqueio remoto. • Inventário: Gestão detalhada de hardware e software do equipamento. • Rastreabilidade: Recursos de geolocalização integrados.		
4. O software de controle e monitoramento deve possuir a funcionalidade de persistência, garantindo a preservação do cliente do software e de suas funcionalidades, mesmo após a perda total de dados ou formatação do disco rígido, utilizando tecnologia de residência em firmware;		
5. A interface de controle e monitoramento dos equipamentos deve ser baseada em nuvem, sem a necessidade de licenças adicionais além daquelas atribuídas a cada equipamento;		
6. A licença do software dedicado deve ter cobertura mínima equivalente ao período de garantia do equipamento, de 60 (sessenta) meses, e deve estar plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;		
7. Os equipamentos poderão ser entregues com imagem de instalação do sistema operacional e softwares customizada e previamente fornecida pela CONTRATANTE, conforme especificado no Termo de Referência.	⚠	Não foi possível constatar na documentação apresentada, a possíbilidae de entrega dos equipamentos com a imagem de instalação do sistema operacional e softwares customizados. **Providências:** - Declarar na proposta.
17. COMPATIBILIDADE		
1. Deve ser apresentado o certificado de compatibilidade dos equipamentos com o sistema operacional Windows 11 x64 obtido junto à Microsoft. Deverá constar no Microsoft Hardware Compatibility List (HCL) para o sistema operacional exigido e ofertado. 1. A comprovação da compatibilidade será efetuada pela apresentação do documento Hardware Compatibility Test Report emitido especificamente para o modelo no sistema operacional ofertado, ou pela indicação no site da Microsoft;		
2. O equipamento deverá possuir certificado de homologação comprovando a compatibilidade do mesmo com, pelo menos, uma distribuição de Linux. A comprovação da compatibilidade será efetuada pela apresentação de documento emitido especificamente para o modelo ofertado;		
3. O equipamento, na configuração ofertada, deve possuir certificado de conformidade contra incidentes elétricos e de combustão dos materiais (IEC/EN 60950) e de imunidade eletromagnética (IEC/EN 61000), comprovado através de certificados ou do relatório de avaliação de conformidade nos moldes da portaria 170/2012 vigente do INMETRO, ou similar Internacional.		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
18. OUTROS REQUISITOS		
1. Todas as partes do computador devem ter coloração neutra em gradações de preto ou prata, mantendo o padrão e cor;		
2. Deverá acompanhar maleta, pasta, mochila ou similar, para transporte com segurança, de tamanho suficiente para acondicionar o equipamento e seus acessórios (fonte de alimentação e cabos), confeccionada em material resistente e impermeável;		
3. Equipamento deverá ser novo, partes e peças, de primeiro uso, que deverão ser acondicionados em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;		
4. Informar marca e modelo dos componentes utilizados na solução e apresentar prospecto com as características técnicas do equipamento e da placa mãe, processador, memórias, interfaces de rede, fonte de alimentação e unidade de armazenamento, incluindo especificação de marca, modelo, e outros elementos que de forma inequívoca identifiquem e constatem as configurações, possíveis expansões e upgrades, comprovando-os através de certificados, manuais técnicos, folders e demais literaturas técnicas editadas pelos fabricantes;		
5. Todos os equipamentos deverão ser entregues idênticos, ou seja, todos os componentes externos e internos deverão ter os mesmos modelo e marca;		
6. O equipamento proposto deverá estar em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;		
7. Não serão aceitos produtos descontinuados por seus fabricantes, não devendo constar em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não poderão ter previsão de descontinuidade de fornecimento, suporte ou vida;		
8. O equipamento em pleno funcionamento deve atender à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que deverá acompanhar a proposta;		
9. Deverá ter compatibilidade eletromagnética e de radiofrequência IEC 61000 comprovado através de certificado ou relatório de avaliação de conformidade emitido por órgão credenciado pelo INMETRO ou internacional equivalente;		
10. Deverá ter compatibilidade com o padrão DMI 2.0 (Desktop Management Interface) ou mais recente da DMTF (Desktop Management Task Force), comprovado através de documentação expedida pelo fabricante do equipamento ou comprovação de que o fabricante do equipamento é membro do consórcio DMTF listado em uma das categorias BOARD ou LEADERSHIP;		
11. Deverá ter compatibilidade com a norma TPM Specification Version 2.0 especificadas pelo TCG (Trsted Computing Group), devendo o fabricante ser membro de uma das categorias listadas no site http://www.trustedcomputinggroup.org/about_tcg/tcg_members;		
12. Deverá ter compatibilidade com EPEAT na nova categoria Bronze, comprovada através de atestados ou certidões que mostrem que o equipamento é aderente ao padrão de eficiência energética EPEAT, emitido por instituto credenciado junto ao INMETRO ou equivalente internacional. 1. Será admitida como comprovação também, a indicação que o equipamento consta no site www.epeat.net na nova categoria Bronze;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
13. Não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS (Restriction of Certain Hazardous Substances);	□	
14. Os equipamentos deverão pertencer à linha corporativa, não sendo aceitos equipamentos destinados ao uso da linha doméstica. 1. A comprovação deverá ser apresentada junto com a proposta;	□	
15. Não serão aceitos equipamentos que contenham lacres de violação de garantia por abertura, que inviabilizem a inspeção dos componentes a qualquer momento;	□	
16. **Garantia de 60 (sessenta) meses on-site**, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo. **Para as baterias, será admitido garantia mínima de 36 (trinta e seis) meses**. Nos meses que restarem para completar o prazo total de garantia, a **FORNECEDORA** se obriga a dispor de bateria para venda em caso de eventual necessidade, e a realizar o suporte e assistências técnica sem ônus para a **CONTRATANTE**.	□	Na declaração do fabricante temos: "*A assistência técnica "on-site" será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;* *• Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa,* ***salvo quando o defeito for provocado por uso inadequado dos equipamentos;***".

3. Conclusão

Após análise da documentação apresentada pela licitante **TORINO INFORMÁTICA LTDA.**, referente ao **Item 3 – MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"**, foram observados alguns pontos inconclusivos, marcados como ⚠**. Os pontos marcados com** □, são exigências que não foi possível comprovar sua aderência com a documentação enviada.

3.1 Unidade de armazenamento com velocidade de gravação inferior ao mínimo de 1.200 MB/s

O proponente descreveu em sua proposta: "*HD SSD 256GB NVME*". Ao buscar no caderno de especificações, denominado **QuickSpecs**, na seção **Storage and Drives**, encontramos os seguintes discos de 256Gb:

- 256GB PCIe 2280 NVMe Self Encrypted OPAL2 Value Solid State Drive, com Maximum Sequential Write de 900 MB/s ±20%;
- SSD 256GB 2280 PCIe NVMe Value, com Maximum Sequential Write de 900 MB/s ±20%.

Pelo exposto, nenhum dos dois discos atendem à velocidade mínima de gravação de 1.200 Mb/s.

3.2 Teclado retroiluminado no idioma padrão, português (Brasil), ABNT-II

Não foi possível verificar qual das configurações de teclados disponíveis atende ao requisito de retroiluminação. No caderno **QuickSpecs** temos:

- *"Keyboard HP Standard Keyboard, spill-resistant, backlit, Durakey keyboard. 23*
- *HP Standard Keyboard, spill-resistant, Privacy, backlit, Durakey keyboard. 23*
- *HP Standard Keyboard, spill-resistant keyboard.*"

Providências

- Declarar na proposta, inclusive o atendimento do requisito de teclado retroiluminado, no idioma padrão português (Brasil), ABNT-II.

3.3 Customizações

No que diz respeito às exigências de customização com aplicação da logo oficial da **CONTRATANTE**, na declaração do fabricante, esta declara:

> "*Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará as solicitações de customização à HP de modo a atender plenamente as exigências edilícias.* ***Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas***;" (g.n.)

Providências

- A proponente deverá declarar na proposta a oferta deste item.

3.4 Entrega dos equipamentos com imagem de instalação do sistema operacional customizada e fornecida pela CONTRATANTE

Não foi possível constatar na documentação apresentada, a possíbilidae de entrega dos equipamentos com a

imagem de instalação do sistema operacional e softwares customizados.

Providências

- Considerando a cláusula de customizações já transcrita, a proponente deverá declarar na proposta a oferta deste item.

3.5 Da garantia

Na declaração do fabricante temos a seguinte cláusula:

> "*A assistência técnica "on-site" será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;*
> *• Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa,* ***salvo quando o defeito for provocado por uso inadequado dos equipamentos;***"

Ocorre que nesta contratação as condições de prestação de garantia e assistência técnica são:

> *8.2.1 Os equipamentos objeto desta licitação, deverão contar com garantia e assistência técnica do fabricante ou pela assistência técnica autorizada do mesmo, na modalidade* ***"****on-site****", pelo período de 60 (sessenta) meses,*** *contados a partir da emissão d o* ***TERMO DE RECEBIMENTO DEFINITIVO*** *do objeto, devendo atender aos chamados de assistência técnica, conforme estabelecido neste Termo e Anexos.*
>
> *8.2.1.1 A garantia deverá abranger acidentes, inclusive danos não intencionais, tais como QUEDA, TELA QUEBRADA, DERRAMAMENTO DE LÍQUIDOS, OSCILAÇÃO DE ENERGIA, não se limitando às ocorrências supracitadas, sendo o rol apresentado uma lista não exaustiva.*

Note-se, portanto, que foi solicitado **garantia do fabricante ou pela assistência técnica autorizada do mesmo**, e que o fabricante declarou não prestar garantia para defeitos provocados por uso inadequado dos equipamentos, situações essas típicas dos danos não intencionais descritas no termo de referência.

É o parecer.

Manaus, 24 de julho de 2025.

FRANCISCO ELVISLÂNIO PEREIRA
Agente de apoio - Manutenção/Informática

WALESKA GRACIEME ANDRADE MARQUES DE OLIVEIRA
Agente Técnico - Analista de Banco de Dados

Documento assinado eletronicamente por **Francisco Elvislânio Pereira**, **Agente de Apoio - Administrativo**, em 24/07/2025, às 10:19, conforme art. 1º, III, "b", da Lei 11.419/2006.

Documento assinado eletronicamente por **Waleska Gracieme Andrade Marques de Oliveira**, **Agente Técnico - Analista de Banco de Dados**, em 24/07/2025, às 10:19, conforme art. 1º, III, "b", da Lei 11.419/2006.

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Torino Informática Ltda.
CNPJ 03.619.767/0005-15
I.E. 083.327.90-8
tanabe@grupotorino.com.br

Serra, 17 de Julho de 2025

À
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS

EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP
ABERTURA: 29/06/2025 ÀS 10H00MIN.

PROPOSTA DE PREÇO

PREZADOS SENHORES:

TENDO EXAMINADO MINUCIOSAMENTE AS NORMAS ESPECÍFICAS DO PROCESSO LICITATÓRIO ACIMA TENDO COMO OBJETO A *AQUISIÇÃO DE EQUIPAMENTOS DE INFORMATICA* E APÓS TERMOS TOMADO CONHECIMENTO DE TODAS AS CONDIÇÕES LÁ ESTABELECIDAS, PASSAMOS A FORMULAR A SEGUINTE PROPOSTA:

1. PROPOSMOS FORNECER, SOB NOSSA INTEGRAL RESPONSABILIDADE, OS EQUIPAMENTOS, OBJETO DO REFERIDO CERTAME, CONFORME A TABELA ABAIXO:

ITEM	ESPECIFICAÇÃO	QUANT	MARCA	VALOR UNITÁRIO	VALOR TOTAL
Lote 03	COMPUTADOR TIPO 3 - "NOTEBOOK DE 14" NOTEBOOK HP 640 G11 PROC INTEL ULTRA 5 135U - VPRO MEMÓRIA 16GB(2X8) DDR5 5600 HD SSD 256GB NVME – DISCO PM9B1 WEBCAM 5MP WIFI6 + BT AX211 TELA 14 FHD BATERIA 56WHR WINDOWS 11 PROFESSIONAL SOFTWARE ABSOLUTE GARANTIA 5 ANOS ONSITE de acordo com o solicitado no 8.2.1 E 8.2.1.1, em virtude da Torino ser Assistência técnica autorizada do fabricante HP. ACOMPANHA: MOUSE USB 1000 DPI HP E MOCHILA PARA NOTEBOOK. Teclado: Keyboard HP Standard Keyboard, spill-resistant,backlit, Durakey keyboard. Notebook nacional com teclado (Brasil) ABNT-II e retroiluminado. Serviço de aplicação da logo em laser nos equipamentos.	300	HP 640 G11	**R$ 8.250,00** (OITO MIL E DUZENTOS E CINQUENTA REAIS)	**R$ 2.475.000,00** (DOIS MILHOES E QUATROCENTOS E SETENTA E CINCO MIL REAIS)

	Serviço de customização de imagem de instalação do sistema operacional e softwares customizada previamente fornecida pela CONTRATANTE e replicação nos equipamentos.				
				TOTAL DA PROPOSTA	**R$ 2.475.000,00** (DOIS MILHOES E QUATROCENTOS E SETENTA E CINCO MIL REAIS)

2. ***O VALOR TOTAL DA PROPOSTA É R$ 2.475.000,00 (DOIS MILHOES E QUATROCENTOS E SETENTA E CINCO MIL REAIS)***
3. NOS PREÇOS INDICADOS ACIMA ESTÃO INCLUÍDOS, ALÉM DO FORNECIMENTO DO PRODUTO, TODOS OS DEMAIS CUSTOS COM SALÁRIOS, BENEFÍCIOS, ENCARGOS, TRIBUTOS, FRETE, GARANTIA E DEMAIS CONTRIBUIÇÕES PERTINENTES.
4. DECLARAMOS QUE CONHECEMOS A LEGISLAÇÃO DE REGÊNCIA DESTA LICITAÇÃO E QUE OS SERVIÇOS SERÃO PRESTADOS DE ACORDO COM AS CONDIÇÕES ESTABELECIDAS NESTE EDITAL, O QUE CONHECEMOS E ACEITAMOS EM TODOS OS SEUS TERMOS, INCLUSIVE QUANTO AO PAGAMENTO E OUTROS.
5. DECLARAMOS, TAMBÉM, QUE NENHUM DIREITO A INDENIZAÇÃO OU REEMBOLSO DE QUAISQUER DESPESAS NOS SERÁ DEVIDO, CASO A NOSSA PROPOSTA NÃO SEJA ACEITA PELA **MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS** SEJA QUAL FOR O MOTIVO.
6. A PRESENTE PROPOSTA É VALIDA POR **90 (NOVENTA) DIAS**, A CONTAR DA DATA ESTABELECIDA PARA A SUA ABERTURA.
7. OS PAGAMENTOS SERÃO REALIZADOS EM ATÉ **20 (VINTE)** DIAS E CREDITADOS A **CONTA CORRENTE Nº 7105-6**, **AGÊNCIA Nº 2414-7** NO **BANCO DO BRASIL S/A, CÓDIGO 001.**
8. O PROCURADO DA EMPRESA, CUJO CNPJ É 03.619.767/0005-15, QUE ASSINARÁ A ATA DE REGISTRO DE PREÇO OU CONTRATO, É O **SR. RODRIGO DO AMARAL RISSIO** PORTADOR DO **CPF 220.807.218-95** E **RG 27.954.969-6 SSP/SP;**
9. GARANTIA: **60 (SESSENTA) MESES** ONSITE PARA O EQUIPAMENTO**,** CONFORME EDITAL;
10. VALORES EXPRESSOS EM REAIS
11. PRAZO DE ENTREGA: CONFORME EDITAL ATÉ **90 (NOVENTA) DIAS,** APÓS A DATA DE ASSINATURA DO CONTRATO E/OU RECEBIMENTO DO EMPENHO;
12. ENVIO DO MATERIAL VIA TERRESTRE/RODOVIÁRIO;
13.

DADOS DOS SOCIOS:

RODRIGO DO AMARAL RISSIO
RG 27.954.969-6 SSP/SP
CPF 220.807.218-95
DENISE DO AMARAL RISSIO
RG 6.438.259 SSP/SP
CPF 246.137.578-00

DADOS DA LICITANTE / CONTRATAÇÃO:

TORINO INFORMATICA LTDA
CNPJ 03.619.767/0005-15
IE: 083.327.90-8
IM: 4675890
AV. 600, SN – QUADRA 15 – MODULO 10 – SETOR INDUSTRIAL – TIMS
SERRA – ES – CEP 29.161-419

DADOS PARA CONTATO / INFORMAÇÕES:

TORINO INFORMATICA LTDA
CNPJ: 03.619.767/0001-91
IE: 669.369.347-110
IM: 114.058
RUA RITA DE CARVALHO MONTEIRO, 120 – RETIRO SÃO JOÃO
SOROCABA – SP – CEP 18085-750
CONTATO: MARCELLO TANABE
TEL/FAX: (15) 3238-9520 OU 99148-9313
EMAIL: tanabe@grupotorino.com.br

DATASHEET EQUIPAMENTO / DRIVERS:

https://support.hp.com/br-pt/drivers/hp-elitebook-640-14-inch-g11-notebook-pc/2102139861
https://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c08915793

DADOS PARA SUPORTE TÉCNICO:

https://chamados.grupotorino.com.br
suporte@grupotorino.com.br
0800-201-5666

Rodrigo do Amaral Rissio
RG: 27.954.969-6 SSP/SP
Sócio / Procurador

TORINO INFORMÁTICA LTDA
CNPJ: 03.619.767/0005-15
RODRIGO DO AMARAL RISSIO
RG: 27.954.969-6 SSP/SP
CPF: 220.807.218-95

SAMSUNG

Rev. 1.0, Mar. 2022

MZVL4128HCHQ-00BH1
MZVL4256HBJD-00BH1
MZVL4512HBLU-00BH1
MZVL41T0HBLB-00BH1

SAMSUNG SSD PM9B1

Specification (PCIe® NVMe™ M.2)

Datasheet *For HPI*

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CONFIDENTIAL

Anexo I - ITEM 3 - PM9B1 M.2 SSD Datasheet_v1.0_ for HPI (1683324) SEI 2025.001317 / pg. 458

Revision History

Revision No.	History	Draft Date	Remark	Edited by	Reviewed by
1.0	1. Initial release	Mar, 15. 2022	Final	Semi Lee	Yongsuk Yun

PM9B1 M.2 Series

PART NUMBER	CAPACITY[1]	LBA COUNT [2]
MZVL4128HCHQ-00BH1	128GB	250,069,680
MZVL4256HBJD-00BH1	256GB	500,118,192
MZVL4512HBLU-00BH1	512GB	1,000,215,216
MZVL41T0HBLB-00BH1	1024GB	2,000,409,264

FEATURES

- PCIe Gen.4 16Gb/s Interface, up to 4 Lanes
- Compliant with PCI Express® M.2 Specification Rev. 1.1
- Compliant with NVM Express™ specification Rev. 1.4 (Mandatory Only)
- Power Saving Modes:
  - Supporting APST
  - Supporting L1.2 Mode
- Support Admin & NVM Command Set
- RoHS Compliant

DRIVE CONFIGURATION

· Capacity	128/256/512/1024GB
· From Factor	M.2
· Interface	PCI Express® Gen.4 x4
· Bytes per Sector	512 Bytes

PERFORMANCE SPECIFICATIONS [3]

· Data Transfer Rate (128KB)	
· Sequential Read	(128/256GB) Up to 3,300 MB/s
	(512GB) Up to 3,500 MB/s
	(1024GB) Up to 3,600 MB/s
· Sequential Write	(128/256GB) Up to 1,200 MB/s
	(512GB) Up to 2,500 MB/s
	(1024GB) Up to 3,000 MB/s
· Data I/O Speed (4KB)	
· Random Read	(128/256GB) Up to 210K IOPS
	(512GB) Up to 400K IOPS
	(1024GB) Up to 450K IOPS
· Random Write	(128/256GB) Up to 280K IOPS
	(512GB) Up to 400K IOPS
	(1024GB) Up to 430K IOPS

RELIABILITY SPECIFICATIONS

· Uncorrectable Bit Error Rate	< 1 sector per 10^{15} bits read
· MTBF	1.5 Million Hours

ENVIRONMENTAL SPECIFICATIONS

· Temperature	
- Operating[4]	0°C to 70°C
- Non-operating	-40°C to 85°C
· Humidity (non-condensing)	
- Non-operating	5 ~ 95%
· Linear Shock (0.5ms duration with 1/2 sine wave, 3axis)	
- Non-operating	1,500 Gpeak
· Vibration (20Hz ~ 2,000Hz, Sinusoidal)	
- Non-operating	20 Gpeak

POWER SPECIFICATIONS

· Supply Voltage / Tolerance	3.3V± 5%
· Voltage Ripple/Noise (max.)	100mV p-p
· Active[5] (Typ., RMS)	
- Read (3.3V)	4.1 W
- Write (3.3V)	4.2 W
· Idle[6] (Typ.)	40 mW
· Sleep[6] (Typ.)	3.5 mW

PHYSICAL DIMENSION

· Width	22.00 ± 0.15 mm
· Length	80.00 ± 0.15 mm
· Height	Max. 2.38 mm
· Weight	Max. 4.0 g

NOTE: Specifications are subject to change without notice.

1) 1MB = 1,000,000 Bytes, 1GB = 1,000,000,000 Bytes, unformatted Capacity.
   User accessible capacity may vary depending on operating environment and formatting.
2) 1 Sector = 512Bytes, Max. LBA represents the total user addressable sectors
   in LBA mode and calculated by IDEMA rule.
3) Actual performance may vary depending on use conditions and environment.
   Performance measurements based on TurboWrite technology.
4) Temperature is measured by SMART Temperature.
   Proper airflow recommended to prevent the thermal throttling if over 70°C
5) Active power is measured on sequential write and read.
6) Actual measurements result may vary depending on use conditions and environment.

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1.0 INTRODUCTION

1.1 General Description

This document describes the specification of PM9B1 SSD which uses PCIe interface.
The PM9B1 is fully consist of semiconductor device and using NAND Flash Memory which has a high reliability and a high technology in a small form factor for using a SSD and supporting Peripheral Component Interconnect Express (PCIe) 4.0 interface standard up to 4 lanes shows much faster performance than previous SATA SSDs.

The PM9B1 provides 128GB, 256GB, 512GB and 1024GB capacities. It's sequential performance is up to 3,600MB/s for read operation and 3,000MB/s for write operation by 4 lanes. It's random performance is up to 450k IOPS for read and 430k IOPS for write operation by 4 lanes. It could also provide rugged features with an extreme environment with a high MTBF.

1.2 Product List

[Table 1] Product Line-up

Type	Capacity	Part Number
M.2	128GB	MZVL4128HCHQ-00BH1
	256GB	MZVL4256HBJD-00BH1
	512GB	MZVL4512HBLU-00BH1
	1024GB	MZVL41T0HBLB-00BH1

1.3 Ordering Information

M	Z	X	X	X	X	X	X	X	X	X	X	-	X	X	X	X	X
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

1. Memory (M)

2. Module Configuration
Z: SSD

3. Interface / FormFactor
V: PCIe M.2 (22x80, PCIex4)

4. Line-Up
L: VNAND 3bit MLC

5. SSD CTRL
4: Silverstar,Marvell

6~8. SSD Capacity
128: 128GB
256: 256GB
512: 512GB
1T0: 1TB

9. NAND Package
H: BGA (LF,HF)

10. Generation
B: 3rd Generation
C: 4th Generation

11~12. NAND Density
HQ: 1T QDP 4CE
JD: 2T QDP 4CE
LU: 4T ODP 4CE
LB: 8T HDP 4CE

13. "-"

14. PCB Type
0: None

15. HW revision
0: No revision

16. Packing Type
Production site
A: the product is assembled(ES/CS) and manufactured in Korea (MP)
B: the product is assembled(ES/CS) in Korea and manufactured in Korea or China (MP).

17~18. Customer
H1: HPI NonSED

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2.0 PRODUCT SPECIFICATION

2.1 Capacity

[Table 2] User Addressable Sectors

Capacity[1)]	Max. LBA Count[2)]
128GB	250,069,680
256GB	500,118,192
512GB	1,000,215,216
1024GB	2,000,409,264

NOTE:
1) Gigabyte (GB) = 1,000,000,000 Bytes, 1 Sector = 512Bytes
2) Max. LBA shown in Table 1 represents the total user addressable sectors in LBA mode and calculated by IDEMA rule.

2.2 Performance[1)]

[Table 3] Drive Performance (Gen.4)

Parameter	Unit	Queue Depth	128GB	256GB	512GB	1024GB
Sequential Read[2)] (Up to)	MB/s	QD = 32	3,300	3,300	3,500	3,600
Sequential Write[2)4)] (Up to)	MB/s	QD = 32	1,200	1,200	2,500	3,000
Random Read[3)] (Up to)	IOPS	QD = 32	210K	210K	400K	450K
Random Write[3)4)] (Up to)	IOPS	QD = 32	280K	280K	400K	430K

[Table 4] Drive Performance (Gen.3)

Parameter	Unit	Queue Depth	128GB	256GB	512GB	1024GB
Sequential Read[2)] (Up to)	MB/s	QD = 32	3,300	3,300	3,500	3,600
Sequential Write[2)4)] (Up to)	MB/s	QD = 32	1,200	1,200	2,500	3,000
Random Read[3)] (Up to)	IOPS	QD = 32	210K	210K	400K	450K
Random Write[3)4)] (Up to)	IOPS	QD = 32	280K	280K	400K	430K

NOTE:
1) Performance measured using IOMeter 1.1.0 / CDM 5.1.2 on Windows 10 64bit. Actual performance may vary depending on use conditions and environment
2) Sequential performance measured using 128KB data size. (QD=32 by Thread=1)
3) Random performance measured using 4KB data size. (QD=32 by Thread 4, QD=1 by Thread 1)
4) Performance measurements based on TurboWrite technology

2.3 Power

[Table 5] Maximum Ratings

Parameter		Allowable noise/ripple
Supply Voltage	Allowable voltage	3.3V ± 5%
	Allowable noise/ripple	100mV p-p or less

[Table 6] Power Consumption for M.2 (3.3V Supply)

Parameter			Specifications
Power Consumption	Active[1] (Typ., RMS)	Read	4.1 W
		Write	4.2 W
	Idle[2)3)] (Typ.)		40 mW
	Sleep[2)3)] (Typ.)		3.5 mW

NOTE:
1) Active power is measured on sequential write and read.
2) Idle Power is measured on PS3 (L1.2 Enable) and Sleep Power is measured on PS4 (L1.2 Enable).
3) Actual measurements result may vary depending on use conditions and environment.

[Table 7] Power Rail Current

parameter	RMS Current	Max. Current (RMS current for 10us duration)
3.3V	1.3A	1.9A

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2.4 Reliability

This chapter provides the information for the reliability features of the SSD.

2.4.1 MTBF

MTBF is Mean Time Between Failure, and is the predicted elapsed time between inherent failures of a system during operation. As same word, AFR (annual failure ratio) is 0.58%. MTBF can be calculated as the arithmetic average time between failures of a system.

[Table 8] MTBF Specifications

Capacity	MTBF
128GB	1,500,000 Hours
256GB	
512GB	
1024GB	

2.4.2 UBER

UBER is Uncorrectable Bit Error Rate.

[Table 9] UBER Specifications

Parameter	Specification
UBER	< 1 sector per 10^{15} bits read

2.4.3 TBW

[Table 10] TBW Specification

Parameter	Unit	128GB	256GB	512GB	1024GB
TBW	TB	100	200	300	400

2.5 Environmental Specification

[Table 11] Temperature, Humidity, Shock, Vibration

Parameter	Mode	Specification
Temperature	Operating[1)]	0°C to 70°C
	Non-operating	-40°C to 85°C
Humidity[2)]	Non-operating	5% to 95%
Shock[3)]	Non-operating	1500G, 0.5ms with half sine wave, 3 axis
Vibration[4)]	Non-operating	20G, 20Hz to 2000Hz

NOTE:
1) Temperature is measured by SMART Temperature. Proper airflow recommended to prevent the thermal throttling if over 70°C.
2) Humidity is measured in non-condensing.

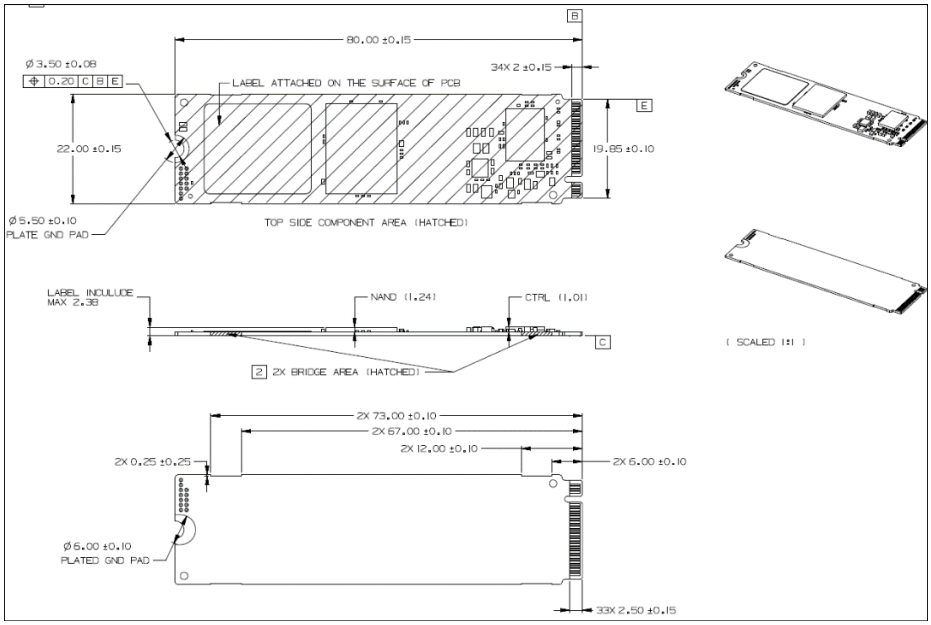
3.0 MECHANICAL SPECIFICATION

3.1 Physical dimensions and Weight

[Table 12] Physical dimensions and Weight

Parameter	Value
Width	22.00 ± 0.15 mm
Length	80.00 ± 0.15 mm
Thickness	Max. 2.38 mm
Weight	Max 4.0g

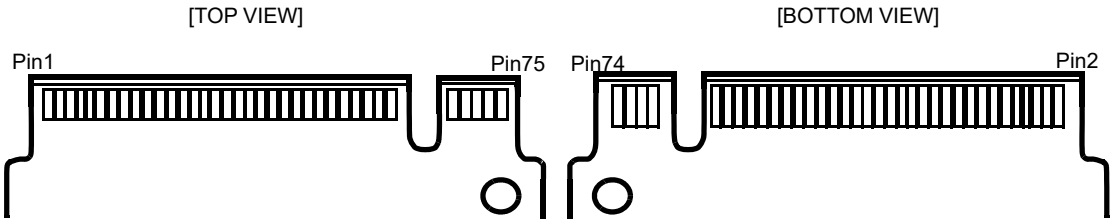
3.2 Form Factor



[Figure 1] M.2 22x80

4.0 INTERFACE SPECIFACION

4.1 Connector Dimension and Pin Location



[Figure 2] M.2 Signal and Power pins

4.2 Pin Assignments and Definition

[Table 13] Signal Assignments

Pin#	Assignment	Description	Pin#	Assignment	Description
1	GND	GND	2	3.3V	3.3V
3	GND	GND	4	3.3V	3.3V
5	PETn3	PCIe® TX3_N	6	PWRDIS (I)	N/C
7	PETp3	PCIe® TX3_P	8	PLN#	PLN(Power Loss Notice)
9	GND	GND	10	LED1#	LED
11	PERn3	PCIe®Rx3_N	12	3.3V	3.3V
13	PERp3	PCIe® Rx3_P	14	3.3V	3.3V
15	GND	GND	16	3.3V	3.3V
17	PETn2	PCIe® TX2_N	18	3.3V	3.3V
19	PETp2	PCIe® TX2_P	20	N/C	N/C
21	GND	GND	22	N/C	N/C
23	PERn2	PCIe® Rx2_N	24	N/C	N/C
25	PERp2	PCIe® Rx2_P	26	N/C	N/C
27	GND	GND	28	N/C	N/C
29	PETn1	PCIe® TX1_N	30	PLA_S3#	N/C
31	PETp1	PCIe® TX1_P	32	N/C	N/C
33	GND	GND	34	N/C	N/C
35	PERn1	PCIe® Rx1_N	36	N/C	N/C
37	PERp1	PCIe® Rx1_P	38	N/C	N/C
39	GND	GND	40	SMB_CLK (I/O)	SMBUS Clock
41	PETn0	PCIe® TX0_N	42	SMB_DATA (I/O)	SMBUS Data
43	PETp0	PCIe® TX0_P	44	ALERT#(O)	SMBUS Alert (Not Support)
45	GND	GND	46	N/C	N/C
47	PERn0	PCIe® Rx0_N	48	N/C	N/C
49	PERp0	PCIe® Rx0_P	50	PERST#	PCIe®Reset
51	GND	GND	52	CLKREQ#	PCIe® Device Clock Request
53	REFCLKN	REFCLK_N	54	PEWake#	N/C
55	REFCLKP	REFCLK_P	56	Reserved for MFG_Data	N/C
57	GND	GND	58	Reserved for MFG_CLOCK	N/C
67	N/C	N/C	68	SUSCLK	N/C
69	PEDET	N/C	70	3.3V	3.3V
71	GND	GND	72	3.3V	3.3V

73	GND	GND	74	3.3V	3.3V
75	GND	GND			

[Table 14] Simple Indicator Protocol for SSD LED States (Optional)

ASPM[1)]		LED Status
Active State (Host send CMD to SSD)		Blinking
Idle	Low Power standby	OFF
State	Deep Sleep Power savings	OFF

NOTE:
1) ASPM (Active State Power Management)

5.0 PCI and NVM EXPRESS REGISTERS

5.1 PCI Express® Registers

5.1.1 PCI Express® Register Summary

[Table 15] PCI Express® Register Summary

Start Address	End Address	Name	Type
00h	3Fh	PCI Header	PCI Configuration Header Space
40h	47h	PCI Power Management Capability	PCI Capability
50h	67h	MSI Capability	PCI Capability
70h	A3h	PCI Express Capability	PCI Capability
B0h	BBh	MSI-X Capability	PCI Capability
100h	12Bh	Advanced Error Reporting Capability	PCI Extended Capability
168h	16Fh	Alternative Routing-ID Capability	PCI Extended Capability
178h	18Bh	Secondary PCI Express Capability	PCI Extended Capability
198h	1BBh	Physical Layer 16.0 GT/s Capability	PCI Extended Capability
1BCh	1D3h	Margining Extended Capability	PCI Extended Capability
224h	22Bh	Latency Tolerance Reporting Capability	PCI Extended Capability
22Ch	23Bh	L1 Substates Capability	PCI Extended Capability
3ACh	3B7h	Data Link Feature Extended Capability	PCI Extended Capability

5.1.2 PCI Configuration Header Space Registers Detail

5.1.2.1 PCI Configuration Header Space Registers

[Table 16] PCI Header Register Summary

Start Address	End Address	Symbol	Description
00h	03h	IDTF	Identifiers
04h	07h	CMD	Command Register
		STS	Status Register
08h	0Bh	REVID	Revision ID
		CC	Class Codes
0Ch	0Fh	CLS	Cache Line Size
		MLT	Master Latency Timer
		HTYPE	Header Type
		BIST	Built in Self Test
10h	13h	MLBAR (BAR0)	Memory Register Base Address (lower 32-bit)
14h	17h	MUBAR (BAR1)	Memory Register Base Address (upper 32-bit)
18h	1Bh	IDBAR (BAR2)	Reserved
1Ch	1Fh	BAR3	Reserved
20h	23h	BAR4	Reserved
24h	27h	BAR5	Reserved
28h	2Bh	CCPTR	CardBus CIS Pointer
2Ch	2Fh	SS	Subsystem Identifiers
30h	33h	EXPROM	Expansion ROM Base Address
34h	3Bh	CAP	Capabilities Pointer
3Ch	3Dh	INTR	Interrupt Information

IF THERE IS ANY OTHER OPERATION TO IMPLEMENT IN ADDITION TO SPECIFICATION IN THE DATASHEET OR JEDEC STANDARD, PLEASE CONTACT EACH BRANCH OFFICE OR HEADQUARTERS OF SAMSUNG ELECTRONICS.

[Table 17] Identifier Register

Bits	Type	Default Value	Description
31:16	RO	A80Bh	Device ID
0:15	RO	144Dh	Vendor ID

[Table 18] Command Register

Bits	Type	Default Value	Description
15:11	RO	0h	Reserved
10	RW	0	Interrupt Disable
9	RO	0	Fast Back-to-Back Enable (N/A)
8	RW	0	SERR# Enable
7	RO	0	IDSEL Stepping/Wait Cycle Control (N/A)
6	RW	0	Parity Error Response Enable
5	RO	0	VGA Palette Snooping Enable (N/A)
4	RO	0	Memory Write and Invalidate Enable (N/A)
3	RO	0	Special Cycle Enable (N/A)
2	RW	0	Bus Master Enable
1	RW	0	Memory Space Enable
0	RW	0	I/O Space Enable

[Table 19] Status Register

Bits	Type	Default Value	Description
15	RW1C	0	Detected Parity Error
14	RW1C	0	Signaled System Error
13	RW1C	0	Received Master Abort
12	RW1C	0	Received Target Abort
11	RW1C	0	Signaled Target Abort (N/A)
10:9	RO	0h	DEVSEL Timing (N/A)
8	RW1C	0	Master Data Parity Error Detected
7	RO	0	Fast Back-to-Back Transaction Capable (N/A)
6	RO	0	Reserved
5	RO	0	66MHz Capable (N/A)
4	RO	1	Capabilities List
3	RO	0	Interrupt Status
2:1	RO	0h	Reserved
0	RO	0	Reserved

[Table 20] Revision ID Register

Bits	Type	Default Value	Description
7:0	RO	2h	Controller Hardware Revision ID

[Table 21] Class Code Register

Bits	Type	Default Value	Description
23:16	RO	01h	Base Class Code
15:8	RO	08h	Sub Class Code
7:0	RO	02h	Programming Interface

[Table 22] Cache Line Size Register

Bits	Type	Default Value	Description
7:0	RW	0h	Cache Line Size (N/A)

[Table 23] Master Latency Timer Register

Bits	Type	Default Value	Description
7:0	R	00h	Latency Timer.

[Table 24] Header Type Register

Bits	Type	Default Value	Description
7	RO	0	Multi-Function Device (N/A)
6:0	RO	0h	Reserved

[Table 25] Built In Self Test Register

Bits	Type	Default Value	Description
7:0	RO	0h	Built In Self Test (N/A)

[Table 26] Memory Register Base Address Lower 32-bits (BAR0) Register

Bits	Type	Default Value	Description
31:14	RW	0h	Base Address
13:4	RO	0h	Reserved
3	RO	0	Pre-Fetchable
2:1	RO	2h	Address Type (64-bit)
0	RO	0	Memory Space Indicator (MEMSI)

[Table 27] Memory Register Base Address Upper 32-bits (BAR1)

Bits	Type	Default Value	Description
31:0	RW	0h	Base Address

[Table 28] Index/Data Pair Register Base Address (BAR2) Register

Bits	Type	Default Value	Description
31:0	RO	0h	N/A

[Table 29] BAR3 Register

Bits	Type	Default Value	Description
31:0	RO	0h	N/A

[Table 30] Vendor Specific BAR4 Register

Bits	Type	Default Value	Description
31:0	RO	0h	N/A

[Table 31] Vendor Specific BAR5 Register

Bits	Type	Default Value	Description
31:0	RO	0h	N/A

[Table 32] Cardbus CIS Pointer Register

Bits	Type	Default Value	Description
31:0	RO	0h	N/A

[Table 33] Subsystem Identifier Register

Bits	Type	Default Value	Description
31:16	RO	A80Bh	Subsystem ID
15:0	RO	144Dh	Subsystem Vendor ID

[Table 34] Expansion ROM Register

Bits	Type	Default Value	Description
31:11	RW	000000h	Expansion ROM Base Address
10:1	R	000h	Reserved
0	RW	0	Expansion ROM Enable/Disable

[Table 35] Capabilities Pointer Register

Bits	Type	Default Value	Description
7:0	RO	40h	Capability Pointer

[Table 36] Interrupt Information Register

Bits	Type	Default Value	Description
15:8	RO	01h	Interrupt Pin
7:0	RW	FFh	Interrupt Line

IF THERE IS ANY OTHER OPERATION TO IMPLEMENT IN ADDITION TO SPECIFICATION IN THE DATASHEET OR JEDEC STANDARD, PLEASE CONTACT EACH BRANCH OFFICE OR HEADQUARTERS OF SAMSUNG ELECTRONICS.

5.1.3 PCI Capability Registers Detail

5.1.3.1 PCI Power Management Capability

[Table 37] PCI Power Management Capability Summary

Start Address	End Address	Symbol	Description
40h	43h	PCIPM_ID	PCI Power Management Capability ID
		NEXTCAP	Next Capability Pointer
		PCIPM_CAP	PCI Power Management Capabilities
44h	47h	PCIPM_CS	PCI Power Management Control and Status
		PCIPM_CSR_BSE	PMCSR_BSE Bridge Extensions
		PCIEPM_DATA	Data

[Table 38] PCI Power Management Capability ID Register

Bits	Type	Default Value	Description
15:8	RW	50h	Next Capability Pointer.
7:0	R	01h	Power Management Capability ID.

[Table 39] PCI Power Management Capability Register

Bits	Type	Default Value	Description
15:11	RO	9h	PME Support (N/A)
10	RO	0	D2 Support (N/A)
9	RO	0	D1 Support (N/A)
8:6	RO	0h	AUX Current (N/A)
5	RO	0	Device Specific Initialization
4	RsvdP	0	Reserved
3	RO	0	PME Clock (N/A)
2:0	RO	3h	Version (Support for PCI Bus Power Management Interface Spec R1.2)

[Table 40] PCI Power Management Control and Status Register

Bits	Type	Default Value	Description
31:24	R	00h	Power Data Information Register.
23	R	0h	Bus Power/Clock Control Enable.
22	R	0h	B2B3 Support for D3hot.
21:16	R	00h	Reserved.
15	R/W	0h	PME Status.
14:13	R	0h	Data Scaling Factor.
12:9	R	0h	Data Select.
8	R/W	0h	PME Enable.
7:4	R	0h	Reserved.
3	R/W	1h	No soft Reset.
2	R	0h	Reserved.
1:0	R/W	0h	Power State.

5.1.4 Message Signaled Interrupt (MSI) Registers

[Table 41] Message Signaled Interrupt Capability Register Summary

Start Address	End Address	Symbol	Description
50h	53h	MSI_ID	Message Signaled Interrupt Capability ID
		MSI_MC	Message Signaled Interrupt Message Control
54h	57h	MSI_MA	Message Signaled Interrupt Message Address
58h	5Bh	MSI_MUA	Message Signaled Interrupt Upper Address
5Ch	5Dh	MSI_MDATA	Message Signaled Interrupt Message Data
60h	63h	MSI_MMASK	Message Signaled Interrupt Mask Bits
64h	67h	MSI_MPEND	Message Signaled Interrupt Pending Bits

[Table 42] Message Signaled Interrupt Capability ID Register

Bits	Type	Default Value	Description
15:8	RO	0h	MSI Capability Next Pointer.
7:0	RO	05h	MSI Capability ID.

[Table 43] Message Signaled Interrupt Control Register

Bits	Type	Default Value	Description
15:11	RsvdP	0h	Reserved
10	RO	0h	Extended Message Data Enable
9	RO	0h	Extended Message Data Capable
8	RO	1h	Per Vector Masking Capable (N/A)
7	RO	0h	64-bit Address Capable
6:4	RW	0h	Multiple Message Enable
3:1	RO	0h	Multiple Message Capable
0	RW	0h	MSI Enable

[Table 44] Message Signaled Interrupt Address Register

Bits	Type	Default Value	Description
31:2	RW	00000000h	MSI Message Lower Address Field.
1:0	R	0h	Reserved

[Table 45] Message Signaled Interrupt Upper Address Register

Bits	Type	Default Value	Description
31:0	RW	0h	Upper Address

[Table 46] Message Signaled Interrupt Message Data Register

Bits	Type	Default Value	Description
15:0	RW	0000h	Data

[Table 47] Message Signaled Interrupt Mask Bits Register

Bits	Type	Default Value	Description
31:0	RW	00000000h	Used for MSI when the Per Vector Masking Capable bit (PCI_MSI_CAP_ID_NEXT_CTRL_REG.PCI_PVM_SUPPORT) is set.

[Table 48] Message Signaled Interrupt Pending Bits Register

Bits	Type	Default Value	Description
31:0	RO	0h	Pending Bits

5.1.4.1 PCI Express® Capability

[Table 49] PCI Express® Capability Register Summary

Start Address	End Address	Symbol	Description
70h	73h	PCIE_ID	PCI Express Capability ID
		PCIE_CAP	PCI Express Capabilities
74h	77h	PCIE_DCAP	PCI Express Device Capabilities
78h	7Bh	PCIE_DC	PCI Express Device Control
		PCIE_DS	PCI Express Device Status
7Ch	7Fh	PCIE_LCAP	PCI Express Link Capabilities
80h	83h	PCIE_LC	PCI Express Link Control
		PCIE_LS	PCI Express Link Status
94h	97h	PCIE_DCAP2	PCI Express Device Capabilities 2
98h	9Bh	PCIE_DC2	PCI Express Device Control 2
		PCIE_DS2	PCI Express Device Status 2
9Ch	9Fh	PCIE_LCAP2	PCI Express Link Capabilities 2
A0h	A3h	PCIE_LC2	PCI Express Link Control 2
		PCIE_LS2	PCI Express Link Status 2

[Table 50] PCI Express® Capability ID Register0

Bits	Type	Default Value	Description
15:8	RW	Bh	PCIE Next Capability Pointer.
7:0	R	10h	PCIE Capability ID.

[Table 51] PCI Express® Capabilities Register

Bits	Type	Default Value	Description
31:30	R	0h	Reserved.
29:25	R/W	00h	PCIE Interrupt Message Number.
24	R/W	0h	PCIe Slot Implemented Valid.
23:20	R	0h	PCIE Device/PortType.
19:16	R	2h	PCIE Capability Version Number.

[Table 52] PCI Express® Device Capabilities Register

Bits	Type	Default Value	Description
31:29	R	0h	Reserved.
28	R/W	1h	Function Level Reset Capability (endpoints only).
27:26	R	0h	Captured Slot Power Limit Scale.
25:18	R	00h	Captured Slot Power Limit Value.
17:16	RO	0	Reserved.
15	R/W	1h	Role-based Error Reporting Implemented.
14:12	R	0h	Reserved.
11:9	R/W	7h	Applies to endpoints only L1 acceptable latency.
8:6	R/W	7h	Applies to endpoints only L0s acceptable latency.
5	R/W	0h	Extended Tag Field Supported.
4:3	R/W	0h	Phantom Functions Supported.
2:0	R/W	2h	Max Payload Size Supported.

IF THERE IS ANY OTHER OPERATION TO IMPLEMENT IN ADDITION TO SPECIFICATION IN THE DATASHEET OR JEDEC STANDARD, PLEASE CONTACT EACH BRANCH OFFICE OR HEADQUARTERS OF SAMSUNG ELECTRONICS.

[Table 53] PCI Express® Device Control Register

Bits	Type	Default Value	Description
15	R/W	0h	Initiate Function Level Reset (for endpoints).
14:12	R/W	2h	Max Read Request Size.
11	R	0h	Enable No Snoop.
10	R/W	0h	Aux Power PM Enable.
9	R	0h	Phantom Functions Enable.
8	R	0h	Extended Tag Field Enable.
7:5	R/W	0h	Max Payload Size.
4	R/W	1h	Enable Relaxed Ordering.
3	R/W	0h	Unsupported Request Reporting Enable.
2	R/W	0h	Fatal Error Reporting Enable.
1	R/W	0h	Non-fatal Error Reporting Enable.
0	R/W	0h	Correctable Error Reporting Enable.

[Table 54] PCI Express® Device Status Register

Bits	Type	Default Value	Description
15:7	RsvdZ	0h	Reserved
6	RO	0h	Emergency Power Reduction Detected (N/A)
5	RO	0h	Transactions Pending
4	RO	0h	Aux Power Detected
3	RW1C	0h	Unsupported Request Detected
2	RW1C	0h	Fatal Error Detected
1	RW1C	0h	Non-Fatal Error Detected
0	RW1C	0h	Correctable Error Detected

[Table 55] PCI Express® Link Capabilities Register

Bits	Type	Default Value	Description
31:24	R/W	00h	Port Number.
23	R	0h	Reserved.
22	R/W	1h	ASPM Optionality Compliance.
21	R	0h	Link Bandwidth Notification Capable.
20	R	0h	Data Link Layer Link Active Reporting Capable.
19	R	0h	Surprise Down Error Reporting Capable.
18	R/W	0h	Clock Power Management.
17:15	R/W	6h	L1 Exit Latency.
14:12	R/W	7h	LOs Exit Latency.
11:10	R/W	2h	Level of ASPM (Active State Power Management) Support.
9:4	R/W	04h	Maximum Link Width.
3:0	R/W	4h	Maximum Link Speed.

IF THERE IS ANY OTHER OPERATION TO IMPLEMENT IN ADDITION TO SPECIFICATION
IN THE DATASHEET OR JEDEC STANDARD, PLEASE CONTACT EACH BRANCH OFFICE OR
HEADQUARTERS OF SAMSUNG ELECTRONICS.

[Table 56] PCI Express® Link Control Register

Bits	Type	Default Value	Description
15:14	R	0h	DRS Signaling Control.
13:12	R	0h	Reserved.
11	R/W	0h	Link Autonomous Bandwidth Management Interrupt Enable.
10	R/W	0h	Link Bandwidth Management Interrupt Enable.
9	R/W	0h	Hardware Autonomous Width Disable.
8	R/W	0h	Enable Clock Power Management.
7	R/W	0h	Extended Synch.
6	R/W	0h	Common Clock Configuration.
5	R/W	0h	Initiate Link Retrain.
4	R/W	0h	Initiate Link Disable.
3	R/W	0h	Read Completion Boundary (RCB).
2	R	0h	Reserved.
1:0	R/W	0h	Active State Power Management (ASPM) Control.

[Table 57] PCI Express® Link Status Register

Bits	Type	Default Value	Description
15	RW1C	0h	Link Autonomous Bandwidth Status (N/A)
14	RW1C	0	Link Bandwidth Management Status (N/A)
13	RO	0	Data Link Layer Link Active
12	HwInit	1	Slot Clock Configuration
11	RO	0	Link Training (N/A)
10	RO	0	Reserved
9:4	RO	1h	Negotiated Link Width
3:0	RO	1h	Current Link Speed

[Table 58] PCI Express® Device Capabilities 2 Register

Bits	Type	Default Value	Description
31	R/W	1h	FRS Supported.
30:20	R	000h	Reserved.
19:18	R	0h	(OBFF) Optimized Buffer Flush/fill Supported.
17	R	0h	10-Bit Tag Requester Supported.
16	R	1h	10-Bit Tag Completer Supported.
15:14	R	0h	LN System CLS.
13	R	0h	TPH Completer Supported Bit 1.
12	R	0h	TPH Completer Supported Bit 0.
11	R	1h	LTR Mechanism Supported.
10	R	0h	No Relaxed Ordering Enabled PR-PR Passing.
9	R	0h	128 Bit CAS Completer Supported.
8	R	0h	64 Bit AtomicOp Completer Supported.
7	R	0h	32 Bit AtomicOp Completer Supported.
6	R	0h	Atomic Operation Routing Supported.
5	R	0h	ARI Forwarding Supported.
4	R	1h	Completion Timeout Disable Supported.
3:0	R	Fh	Completion Timeout Ranges Supported.

IF THERE IS ANY OTHER OPERATION TO IMPLEMENT IN ADDITION TO SPECIFICATION IN THE DATASHEET OR JEDEC STANDARD, PLEASE CONTACT EACH BRANCH OFFICE OR HEADQUARTERS OF SAMSUNG ELECTRONICS.

[Table 59] PCI Express® Device Control 2 Register

Bits	Type	Default Value	Description
15	RsvdP	0	End-to-end TLP Prefix Blocking (N/A)
14:13	RW/RsvdP	0h	OBFF Enable (N/A)
12	RW	0h	10-Bit Tag Requester Enable
11	RO	0	Emergency Power Reduction Request (N/A)
10	RW	0	Latency Tolerance Reporting Mechanism Enable
9	RW	0	IDO Completion Enable (N/A)
8	RW	0	IDO Request Enable (N/A)
7	RW	0	AtomicOp Egress Blocking (N/A)
6	RW	0	AtomicOp Requester Enable (N/A)
5	RW	0	ARI Forwarding Enable (N/A)
4	RW	0	Completion Timeout Disable
3:0	RW	0h	Completion Timeout Value

[Table 60] PCI Express® Device Status 2 Register

Bits	Type	Default Value	Description
15:0	RsvdZ	0h	Reserved

[Table 61] PCI Express® Link Capabilities 2 Register

Bits	Type	Default Value	Description
31	R/W	1h	DRS Supported.
30:25	R	00h	Reserved.
24	R/W	1h	Two Retimers Presence Detect Supported.
23	R/W	1h	Retimer Presence Detect Supported.
22:9	R	0000h	Reserved.
8	R	0h	Cross Link Supported.
7:1	R	0Fh	Supported Link Speeds Vector.
0	R	0h	Reserved.

[Table 62] PCI Express® Link Control 2 Register

Bits	Type	Default Value	Description
15:12	R/W	0h	Sets Compliance Preset/De-emphasis for 5 GT/s and 8 GT/s.
11	R/W	0h	Sets Compliance Skip Ordered Sets transmission.
10	R/W	0h	Enter Modified Compliance.
9:7	R/W	0h	Controls Transmit Margin for Debug or Compliance.
6	R	0h	Controls Selectable De-emphasis for 5 GT/s.
5	R/W	0h	Hardware Autonomous Speed Disable.
4	R/W	0h	Enter Compliance Mode.
3:0	R/W	4h	Target Link Speed.

IF THERE IS ANY OTHER OPERATION TO IMPLEMENT IN ADDITION TO SPECIFICATION
IN THE DATASHEET OR JEDEC STANDARD, PLEASE CONTACT EACH BRANCH OFFICE OR
HEADQUARTERS OF SAMSUNG ELECTRONICS.

[Table 63] PCI Express® Link Status 2 Register

Bits	Type	Default Value	Description
15	R	0h	DRS Message Received.
14:12	R	0h	Downstream Component Presence.
27:24	R	0h	Reserved.
7	R	0h	Two Retimers Presence Detected.
6	R	0h	Retimer Presence Detected.
5	R/W	0h	Link Equalization Request 8.0GT/s.
4	R	0h	Equalization 8.0GT/s Phase 3 Successful.
3	R	0h	Equalization 8.0GT/s Phase 2 Successful.
2	R	0h	Equalization 8.0GT/s Phase 1 Successful.
1	R	0h	Equalization 8.0GT/s Complete.
0	R	1h	Current De-emphasis Level.

5.1.5 MSI-X Capability

[Table 64] MSI-X Capability Register Summary

Start Address	End Address	Symbol	Description
B0h	B3h	MSIX_ID	MSI-X Capability ID
		MSIX_CAP	MSI-X Message Control
B4h	B7h	MSIX_TBL	MSI-X Table Offset and Table BIR
B8h	BBh	MSIX_PBA	MSI-X PBA Offset and PBA BIR

[Table 65] MSI-X Identifier Register

Bits	Type	Default Value	Description
15:8	RW	D0h	MSI-X Next Capability Pointer.
7:0	R	11h	MSI-X Capability ID.

[Table 66] MSI-X Control Register

Bits	Type	Default Value	Description
15	RW	1h	MSI-X Enable
14	RW	0h	Function Mask
13:11	R	0h	Reserved
10:00	RW	42h	MSI-X Table Size

[Table 67] MSI-X Table Offset Register

Bits	Type	Default Value	Description
31:3	RW	00000800h	MSI-X Table Offset.
2:0	RW	0h	MSI-X Table Bar Indicator Register Field.

[Table 68] MSI-X Pending Bit Array Offset Register

Bits	Type	Default Value	Description
31:3	RW	00000C00h	MSI-X PBA Offset.
2:0	RW	0h	MSI-X PBA BIR.

5.1.6 PCI Extended Capability Details

5.1.6.1 Advanced Error Reporting Registers

[Table 69] Advanced Error Reporting Capability Register Summary

Start Address	End Address	Symbol	Description
100h	103h	AER_ID	AER Capability ID
104h	107h	AER_UCES	AER Uncorrectable Error Status
108h	10Bh	AER_UCEM	AER Uncorrectable Error Mask
10Ch	10Fh	AER_UCESEV	AER Uncorrectable Error Severity
110h	113h	AER_CES	AER Correctable Error Status
114h	117h	AER_CEM	AER Correctable Error Mask
118h	11Bh	AER_CC	AER Advanced Error Capabilities and Control
11Ch	12Bh	AER_HL	AER Header Log

[Table 70] AER Capability ID Register

Bits	Type	Default Value	Description
31:20	RW	148h	Next Capability Offset.
19:16	RW	2h	Capability Version
15:0	RW	0001h	AER Extended Capability ID.

[Table 71] AER Uncorrectable Error Status Register

Bits	Type	Default Value	Description
31:23	R	000h	Reserved.
22	RW	0h	Uncorrectable Internal Error Status.
21	R	0h	Reserved.
20	RW	0h	Unsupported Request Error Status.
19	RW	0h	ECRC Error Status.
18	R/W	0h	Malformed TLP Status.
17	R/W	0h	Receiver Overflow Status.
16	R/W	0h	Unexpected Completion Status.
15	R/W	0h	Completer Abort Status.
14	R/W	0h	Completion Timeout Status.
13	R/W	0h	Flow Control Protocol Error Status.
12	R/W	0h	Poisoned TLP Status.
11:6	R	00h	Reserved.
5	R/W	0h	Surprise Down Error Status (Optional).
4	R/W	0h	Data Link Protocol Error Status.
3:0	R	0h	Reserved.

[Table 72] AER Uncorrectable Error Mask Register

Bits	Type	Default Value	Description
31:25	R	00h	Reserved.
24	R	0h	AtomicOp Egress Block Mask (Optional).
23	R	0h	Reserved.
22	R/W	1h	Uncorrectable Internal Error Mask (Optional).
21	R	0h	Reserved.
20	R/W	0h	Unsupported Request Error Mask.
19	R/W	0h	ECRC Error Mask (Optional).
18	R/W	0h	Malformed TLP Mask.
17	R/W	0h	Receiver Overflow Mask (Optional).
16	R/W	0h	Unexpected Completion Mask.
15	R/W	0h	Completer Abort Error Mask (Optional).
14	R/W	0h	Completion Timeout Error Mask.
13	R/W	0h	Flow Control Protocol Error Mask.
12	R/W	0h	Poisoned TLP Error Mask.
11:6	R	00h	Reserved.
5	R	0h	Surprise Down Error Mask.
4	R/W	0h	Data Link Protocol Error Mask.
3:0	R	0h	Reserved.

[Table 73] AER Uncorrectable Error Severity Register

Bits	Type	Default Value	Description
31:25	R	00h	Reserved.
24	R	0h	AtomicOp Egress Blocked Severity (Optional).
23	R	0h	Reserved.
22	R/W	1h	Uncorrectable Internal Error Severity (Optional).
21	R	0h	Reserved.
20	R/W	0h	Unsupported Request Error Severity.
19	R/W	0h	ECRC Error Severity (Optional).
18	R/W	1h	Malformed TLP Severity.
17	R/W	1h	Receiver Overflow Error Severity (Optional).
16	R/W	0h	Unexpected Completion Error Severity.
15	R/W	0h	Completer Abort Error Severity (Optional).
14	R/W	0h	Completion Timeout Error Severity.
13	R/W	1h	Flow Control Protocol Error Severity (Optional).
12	R/W	0h	Poisoned TLP Severity.
11:6	R	00h	Reserved.
5	R	1h	Surprise Down Error Severity (Optional).
4	R/W	1h	Data Link Protocol Error Severity.
3:0	R	0h	Reserved.

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[Table 74] AER Correctable Error Status Register

Bits	Type	Default Value	Description
31:16	R	0000h	Reserved.
15	R/W	0h	Header Log Overflow Error Status (Optional).
14	R/W	0h	Corrected Internal Error Status (Optional).
13	R/W	0h	Advisory Non-Fatal Error Status.
12	R/W	0h	Replay Timer Timeout Status.
11:9	R	0h	Reserved.
8	R/W	0h	REPLAY_NUM Rollover Status.
7	R/W	0h	Bad DLLP Status.
6	R/W	0h	Bad TLP Status.
5:1	R	00h	Reserved.
0	R/W	0h	Receiver Error Status (Optional).

[Table 75] AER Correctable Error Mask Register

Bits	Type	Default Value	Description
31:16	R	0000h	Reserved.
15	R/W	1h	Header Log Overflow Error Mask (Optional).
14	R/W	1h	Corrected Internal Error Mask (Optional).
13	R/W	1h	Advisory Non-Fatal Error Mask.
12	R/W	0h	Replay Timer Timeout Mask.
11:9	R	0h	Reserved.
8	R/W	0h	REPLAY_NUM Rollover Mask.
7	R/W	0h	Bad DLLP Mask.
6	R/W	0h	Bad TLP Mask.
5:1	R	00h	Reserved.
0	R/W	0h	Receiver Error Mask (Optional).

[Table 76] AER Capabilities and Control Register

Bits	Type	Default Value	Description
31:11	R	000000h	Reserved.
10	R	0h	Multiple Header Recording Enable.
9	R	0h	Multiple Header Recording Capable.
8	R/W	1h	ECRC Check Enable.
7	R	1h	ECRC Check Capable.
6	R/W	1h	ECRC Generation Enable.
5	R	1h	ECRC Generation Capable.
4:0	R	00h	First Error Pointer.

IF THERE IS ANY OTHER OPERATION TO IMPLEMENT IN ADDITION TO SPECIFICATION IN THE DATASHEET OR JEDEC STANDARD, PLEASE CONTACT EACH BRANCH OFFICE OR HEADQUARTERS OF SAMSUNG ELECTRONICS.

[Table 77] AER Header Log Register

Bits	Type	Default Value	Description
31:24 (11Ch)	R	00h	Byte 3 of Header log register of First 32 bit Data Word.
23:16 (11Ch)	R	00h	Byte 2 of Header log register of First 32 bit Data Word.
15:8 (11Ch)	R	00h	Byte 1 of Header log register of First 32 bit Data Word.
7:0 (11Ch)	R	00h	Byte 0 of Header log register of First 32 bit Data Word.
31:24 (120h)	R	00h	Byte 3 of Header log register of Second 32 bit Data Word.
23:16 (120h)	R	00h	Byte 2 of Header log register of Second 32 bit Data Word.
15:8 (120h)	R	00h	Byte 1 of Header log register of Second 32 bit Data Word.
7:0 (120h)	R	00h	Byte 0 of Header log register of Second 32 bit Data Word.
31:24 (124h)	R	00h	Byte 3 of Header log register of Third 32 bit Data Word.
23:16 (124h)	R	00h	Byte 2 of Header log register of Third 32 bit Data Word.
15:8 (124h)	R	00h	Byte 1 of Header log register of Third 32 bit Data Word.
7:0 (124h)	R	00h	Byte 0 of Header log register of Third 32 bit Data Word.
31:24 (128h)	R	00h	Byte 3 of Header log register of Fourth 32 bit Data Word.
23:16 (128h)	R	00h	Byte 2 of Header log register of Fourth 32 bit Data Word.
15:8 (128h)	R	00h	Byte 1 of Header log register of Fourth 32 bit Data Word.
7:0 (128h)	R	00h	Byte 0 of Header log register of Fourth 32 bit Data Word.

5.1.6.2 Alternative Routing-ID(ARI) Capability

[Table 78] Alternative Routing-ID(ARI) Capability Summary

Start Address	End Address	Symbol	Description
168h	16Bh	ARI_ID	Alternative Routing-ID(ARI) Capability Header
16Ch	16Fh	ARI_CAP	ARI Capability Register
		ARI_CON	ARI Control Register

[Table 79] Alternative Routing-ID(ARI) Capability Header

Bits	Type	Default Value	Description
31:20	R/W	178h	Next Capability Offset.
19:16	R/W	1h	Capability Version.
15:0	R/W	000Eh	ARI Extended Capability ID.

[Table 80] Alternative Routing-ID(ARI) Capability Register

Bits	Type	Default Value	Description
15:8	R	00h	Next Function Number.
7:2	R	00h	Reserved.
1	R	0h	ACS Function Groups Capability.
0	R	0h	Multi Functional Virtual Channel (MFVC) Function Groups Capability.

[Table 81] Alternative Routing-ID(ARI) Control Register

Bits	Type	Default Value	Description
31:23	R	000h	Reserved.
22:20	R	0h	Function Group.
19:18	R	0h	Reserved.
17	R	0h	ACS Function Groups Enable.
16	R	0h	MFVC Function Groups Enable.

5.1.6.3 Secondary PCI Express® Capability

[Table 82] Secondary PCI Express® Capability Summary

Start Address	End Address	Symbol	Description
178h	17Bh	SPE_ID	Secondary PCI Express Capability
17Ch	17Fh	PCIE_LC3	PCI Express Link Control 3
180h	183h	PCIE_LE	PCI Express Lane Error Status
184h	187h	PCIE_L0EC	PCI Express Lane 0 Equalization Control
		PCIE_L1EC	PCI Express Lane 1 Equalization Control
188h	189h	PCIE_L2EC	PCI Express Lane 2 Equalization Control
18Ah	18Bh	PCIE_L3EC	PCI Express Lane 3 Equalization Control

[Table 83] Secondary PCI Express® Capability ID Register

Bits	Type	Default Value	Description
31:20	RW	198h	Next Capability Offset.
19:16	RW	1h	Capability Version
15:0	RW	0019h	Secondary PCI Express® Extended Capability ID.

[Table 84] PCI Express® Link Control 3 Register

Bits	Type	Default Value	Description
31:2	R	00000000h	Reserved.
1	R	0h	Link Equalization Request Interrupt Enable.
0	R	0h	Perform Equalization.

[Table 85] PCI Express® Lane Error Status Register

Bits	Type	Default Value	Description
31:4	R	0000000h	Reserved
3:0	RW	0h	Lane Error Status Bits per Lane.

[Table 86] Lane 0 Equalization Control Register

Bits	Type	Default Value	Description
15	R	0h	Reserved
14:12	R	3h	Upstream Port 8.0 GT/s Receiver Preset Hint 0.
11:8	R	7h	Upstream Port 8.0 GT/s Transmitter Preset 0.
7	R	0h	Reserved
6:4	R	0h	Downstream Port 8.0 GT/s Receiver Preset Hint 0.
3:0	R	0h	Downstream Port 8.0 GT/s Transmitter Preset 0.

[Table 87] Lane 1 Equalization Control Register

Bits	Type	Default Value	Description
15	R	0h	Reserved
14:12	R	3h	Upstream Port 8.0 GT/s Receiver Preset Hint 1.
11:8	R	7h	Upstream Port 8.0 GT/s Transmitter Preset 1.
7	R	0h	Reserved
6:4	R	0h	Downstream Port 8.0 GT/s Receiver Preset Hint 1.
3:0	R	0h	Downstream Port 8.0 GT/s Transmitter Preset 1.

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[Table 88] Lane 2 Equalization Control Register

Bits	Type	Default Value	Description
15	R	0h	Reserved
14:12	R	3h	Upstream Port 8.0 GT/s Receiver Preset Hint 2.
11:8	R	7h	Upstream Port 8.0 GT/s Transmitter Preset 2.
7	R	0h	Reserved
6:4	R	0h	Downstream Port 8.0 GT/s Receiver Preset Hint 2.
3:0	R	0h	Downstream Port 8.0 GT/s Transmitter Preset 2.

[Table 89] Lane 3 Equalization Control Register

Bits	Type	Default Value	Description
15	R	0h	Reserved
14:12	R	3h	Upstream Port 8.0 GT/s Receiver Preset Hint 3.
11:8	R	7h	Upstream Port 8.0 GT/s Transmitter Preset 3.
7	R	0h	Reserved
6:4	R	0h	Downstream Port 8.0 GT/s Receiver Preset Hint 3.
3:0	R	0h	Downstream Port 8.0 GT/s Transmitter Preset 3.

5.1.6.4 Physical Layer 16.0 GT/s Capability

[Table 90] Physical Layer 16.0 GT/s Capability Summary

Start Address	End Address	Symbol	Description
198h	1A3h	PL16_ID	Physical Layer 16.0 GT/s Extended Capability Header
		PL16_CAP	16.0 GT/s Capabilities Register
		PL16_CON	16.0 GT/s Control Register
1A4h	1A7h	PL16_STA	16.0 GT/s Status Register
1A8h	1ABh	PL16_LDP	16.0 GT/s Local Data Parity Mismatch Status Register
1ACh	1AFh	PL16_FRDP	16.0 GT/s First Retimer Data Parity Mismatch Status Register
1B0h	1B3h	PL16_SRDP	16.0 GT/s Second Retimer Data Parity Mismatch Status Register
1B4h	1B7h	-	Reserved
1B8h	1BBh	PL16_CON_0_3	16.0 GT/s Control Register for Lane 0-3

[Table 91] Physical Layer 16.0 GT/s Extended Capability ID Register

Bits	Type	Default Value	Description
31:20	RW	1BCh	Next Capability Offset.
19:16	RW	1h	Capability Version
15:0	RW	0026h	PCI Express Extended Capability ID.

[Table 92] 16.0 GT/s Capabilities Register

Bits	Type	Default Value	Description
31:0	RsvdP	0	Reserved

[Table 93] 16.0 GT/s Control Register

Bits	Type	Default Value	Description
31:0	RsvdP	0	Reserved

[Table 94] 16.0 GT/s Status Register

Bits	Type	Default Value	Description
31:5	R	0000000h	Reserved.
4	R/W	0h	Link Equalization Request 16.0GT/s.
3	R	0h	Equalization 16.0GT/s Phase 3 Successful.
2	R	0h	Equalization 16.0GT/s Phase 2 Successful.
1	R	0h	Equalization 16.0GT/s Phase 1 Successful.
0	R	0h	Equalization 16.0GT/s Complete.

[Table 95] 16.0 GT/s Local Data Parity Mismatch Status Register

Bits	Type	Default Value	Description
31:4	R	0000000h	Reserved
3:0	R/W	0h	Local Data Parity Mismatch Status

[Table 96] 16.0 GT/s First Retimer Data Parity Mismatch Status Register

Bits	Type	Default Value	Description
31:4	R	0000000h	Reserved
3:0	R/W	0h	First Retimer Data Parity Mismatch Status

[Table 97] 16.0 GT/s Second Retimer Data Parity Mismatch Status Register

Bits	Type	Default Value	Description
31:4	R	0000000h	Reserved
3:0	R/W	0h	Second Retimer Data Parity Mismatch Status

[Table 98] Reserved

Bits	Type	Default Value	Description
31:0	RsvdP	0	Reserved

[Table 99] 16.0 GT/s Control Register for Lane 0-3

Bits	Type	Default Value	Description
31:28	R	0h	Upstream Port 16.0 GT/s Transmitter Preset3.
27:24	R	0h	Downstream Port 16.0 GT/s Transmitter Preset3.
23:20	R	0h	Upstream Port 16.0 GT/s Transmitter Preset2.
19:16	R	0h	Downstream Port 16.0 GT/s Transmitter Preset2.
15:12	R	0h	Upstream Port 16.0 GT/s Transmitter Preset1.
11:8	R	0h	Downstream Port 16.0 GT/s Transmitter Preset1.
7:4	R	0h	Upstream Port 16.0 GT/s Transmitter Preset0.
3:0	R	0h	Downstream Port 16.0 GT/s Transmitter Preset0.

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5.1.6.5 Margining Extended Capability

[Table 100] Margining Extended Capability Summary

Start Address	End Address	Symbol	Description
1BCh	1BFh	MAR_ID	Margining Extended Capability Header
1C0h	1C3h	MAR_CAP	Margining Port Capabilities Register
		MAR_STA	Margining Port Status Register
1C4h	1C5h	MAR_LANE0_CON	Margining Lane Control Register (Lane 0)
1C6h	1C7h	MAR_LANE0_STA	Margining Lane Status Register (Lane 0)
1C8h	1C9h	MAR_LANE1_CON	Margining Lane Control Register (Lane 1)
1CAh	1CBh	MAR_LANE1_STA	Margining Lane Status Register (Lane 1)
1CCh	1CDh	MAR_LANE2_CON	Margining Lane Control Register (Lane 2)
1CEh	1CFh	MAR_LANE2_STA	Margining Lane Status Register (Lane 2)
1D0h	1D1h	MAR_LANE3_CON	Margining Lane Control Register (Lane 3)
1D2h	1D3h	MAR_LANE3_STA	Margining Lane Status Register (Lane 3)

[Table 101] Margining Extended Capability ID Register

Bits	Type	Default Value	Description
31:20	R/W	224h	Next Capability Offset.
19:16	R/W	1h	Capability Version.
15:0	R/W	0027h	PCI Express Extended Capability ID.

[Table 102] Margining Port Capabilities Register

Bits	Type	Default Value	Description
15:1	R	0000h	Reserved.
0	RW	0h	Margining uses Driver Software.

[Table 103] Margining Port Status Register

Bits	Type	Default Value	Description
15:2	R	0000h	Reserved.
1	R	0h	Margining Software Ready.
0	R	1h	Margining Ready.

[Table 104] Margining Lane Control Register Lane 0

Bits	Type	Default Value	Description
15:8	R/W	9Ch	Margin Payload for Lane 0.
7	R	0h	Reserved.
6	R/W	0h	Usage Model for Lane 0.
5:3	R/W	7h	Margin Type for Lane 0.
2:0	R/W	0h	Receiver Number for Lane 0.

[Table 105] Margining Lane Status Register Lane 0

Bits	Type	Default Value	Description
31:24	R	00h	Margin Payload(Status) for Lane 0.
23	R	0h	Reserved.
22	R	0h	Usage Model(Status) for Lane 0.
21:19	R	0h	Margin Type(Status) for Lane 0.
18:16	R	0h	Receiver Number(Status) for Lane 0.

[Table 106] Margining Lane Control Register Lane 1

Bits	Type	Default Value	Description
15:8	R/W	9Ch	Margin Payload for Lane 1.
7	R	0h	Reserved.
6	R/W	0h	Usage Model for Lane 1.
5:3	R/W	7h	Margin Type for Lane 1.
2:0	R/W	0h	Receiver Number for Lane 1.

[Table 107] Margining Lane Status Register Lane 1

Bits	Type	Default Value	Description
31:24	R	00h	Margin Payload(Status) for Lane 1.
23	R	0h	Reserved.
22	R	0h	Usage Model(Status) for Lane 1.
21:19	R	0h	Margin Type(Status) for Lane 1.
18:16	R	0h	Receiver Number(Status) for Lane 1.

[Table 108] Margining Lane Control Register Lane 2

Bits	Type	Default Value	Description
15:8	R/W	9Ch	Margin Payload for Lane 2.
7	R	0h	Reserved.
6	R/W	0h	Usage Model for Lane 2.
5:3	R/W	7h	Margin Type for Lane 2.
2:0	R/W	0h	Receiver Number for Lane 2.

[Table 109] Margining Lane Status Register Lane 2

Bits	Type	Default Value	Description
31:24	R	00h	Margin Payload(Status) for Lane 2.
23	R	0h	Reserved.
22	R	0h	Usage Model(Status) for Lane 2.
21:19	R	0h	Margin Type(Status) for Lane 2.
18:16	R	0h	Receiver Number(Status) for Lane 2.

[Table 110] Margining Lane Control Register Lane 3

Bits	Type	Default Value	Description
15:8	R/W	9Ch	Margin Payload for Lane 3.
7	R	0h	Reserved.
6	R/W	0h	Usage Model for Lane 3.
5:3	R/W	7h	Margin Type for Lane 3.
2:0	R/W	0h	Receiver Number for Lane 3.

[Table 111] Margining Lane Status Register Lane 3

Bits	Type	Default Value	Description
31:24	R	00h	Margin Payload(Status) for Lane 3.
23	R	0h	Reserved.
22	R	0h	Usage Model(Status) for Lane 3.
21:19	R	0h	Margin Type(Status) for Lane 3.
18:16	R	0h	Receiver Number(Status) for Lane 3.

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5.1.6.6 Latency Tolerance Reporting Capability Registers

[Table 112] Latency Tolerance Reporting Capability Register Summary

Start Address	End Address	Symbol7	Description
224h	227h	LTR_ID	Latency Tolerance Reporting(LTR) Capability ID
228h	22Bh	LTR_SLR	LTR Max Snoop Latency Register
		LTR_NSLR	LTR Max No-Snoop Latency Register

[Table 113] LTR Extended Capability Header

Bits	Type	Default Value	Description
31:20	RW	22Ch	Next Capability Offset.
19:16	RW	1h	Capability Version.
15:0	RW	0018h	LTR Extended Capacity ID.

[Table 114] LTR Max Snoop latency Register

Bits	Type	Default Value	Description
15:13	R	0h	Reserved
12:10	RW	0h	Max Snoop latency Scale
9:0	RW	000h	Max Snoop latency Value

[Table 115] LTR Max No Snoop latency Register

Bits	Type	Default Value	Description
31:29	R	0h	Reserved
28:26	RW	0h	Max No-Snoop Latency Scale
25:16	RW	000h	Max No-Snoop Latency Value

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IN THE DATASHEET OR JEDEC STANDARD, PLEASE CONTACT EACH BRANCH OFFICE OR
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5.1.6.7 L1 Substates Capability Registers

[Table 116] L1 Substate Capability Register Summary

Start Address	End Address	Symbol	Description
22Ch	22Fh	L1S_CID	L1 Substate Capability ID
230h	233h	L1S_CR	L1 Substate Capability Register
234h	237h	L1S_C1R	L1 Substate Control 1 Register
238h	23Bh	L1S_C2R	L1 Substate Control 2 Register

[Table 117] L1 Substates Extended Capability Header

Bits	Type	Default Value	Description
31:20	R/W	0h	Next Capability Offset.
19:16	R/W	1h	Capability Version.
15:0	R/W	001Eh	L1SUB Extended Capability ID.

[Table 118] L1 Substate Capability Register

Bits	Type	Default Value	Description
31:24	R	00h	Reserved.
23:19	R/W	05h	Port T Power On Value.
18	R	0h	Reserved.
17:16	R/W	0h	Port T Power On Scale.
15:8	R/W	0Ah	Port Common Mode Restore Time.
7:5	R	0h	Reserved.
4	R/W	1h	L1 PM Substates ECN Supported.
3	R/W	1h	ASPM L11 Supported.
2	R/W	1h	ASPM L12 Supported.
1	R/W	1h	PCI-PM L11 Supported.
0	R/W	1h	PCI-PM L12 Supported.

[Table 119] L1 Substate Control 1 Register

Bits	Type	Default Value	Description
31:29	R/W	0h	LTR L12 Threshold Scale.
28:26	R	0h	Reserved.
25:16	R/W	000h	LTR L12 Threshold Value.
15:8	R	00h	Common Mode Restore Time.
7:4	R	0h	Reserved.
3	R/W	0h	ASPM L11 Enable.
2	R/W	0h	ASPM L12 Enable.
1	R/W	0h	PCI-PM L11 Enable.
0	R/W	0h	PCI-PM L12 Enable.

[Table 120] L1 Substate Control 2 Register

Bits	Type	Default Value	Description
31:8	R	000000h	Reserved.
7:3	R/W	05h	T Power On Value.
2	R	0h	Reserved.
1:0	R/W	0h	T Power On Scale.

5.1.6.8 Data Link Feature Extended Capability

[Table 121] Data Link Feature Extended Capability Summary

Start Address	End Address	Symbol	Description
3ACh	3AFh	DL_EXT_CAP	Data Link Feature Extended Capability Header
3B0h	3B3h	DL_FEA_CAP	Data Link Feature Capabilities Register
3B4h	3B7h	DL_FEA_STA	Data Link Feature Status Register

[Table 122] Data Link Feature Extended Capability Header

Bits	Type	Default Value	Description
31:20	R/W	000h	Next Capability Offset.
19:16	R/W	1h	Capability Version.
15:0	R/W	0025h	Capability ID.

[Table 123] Data Link Feature Capabilities Register

Bits	Type	Default Value	Description
31	R/W	1h	Data Link Feature Exchange Enable.
30:23	R	00h	Reserved.
22:1	R/W	000000h	Local Future Data Link Feature Supported.
0	R/W	1h	Local Scaled Flow Control Supported.

[Table 124] Data Link Feature Status Register

Bits	Type	Default Value	Description
31	R	0h	Remote Data Link Feature Supported Valid.
30:23	R	00h	Reserved.
22:0	R	000000h	Features Currently defined are: Bit 0 - Remote Scaled Flow Control Supported.
0	RO	0h	Remote Scaled Flow Control Supported

5.2 NVM Express™ Registers

5.2.1 Register Summary

[Table 125] Register Summary

Start Address	End Address	Symbol	Description
00h	07h	CAP	Controller Capabilities
08h	0Bh	VS	Version
0Ch	0Fh	INTMS	Interrupt Mask Set
10h	13h	INTMC	Interrupt Mask Clear
14h	17h	CC	Controller Configuration
18h	1Bh	Reserved	Reserved
1Ch	1Fh	CSTS	Controller Status
20h	23h	NSSR	NVM Subsystem Reset
24h	27h	AQA	Admin Queue Attributes
28h	2Fh	ASQ	Admin Submission Queue Base Address
30h	37h	ACQ	Admin Completion Queue Base Address
38h	3Bh	CMBLOC	Controller Memory Buffer Location (Optional)
3Ch	3Fh	CMBSZ	Controller Memory Buffer Size (Optional)
40h	EFFh	Reserved	Reserved
F00h	FFFh	Reserved	Command Set Specific
1000h	1003h	SQ0TCBL	Submission Queue 0 Tail Doorbell (Admin)
1000h + (1 * (4 << CAP.DSTRD))	1003h + (1 * (4 << CAP.DSTRD))	CQ0HDBL	Completion Queue 0 Head Doorbell (Admin)
…			
1000h+ (2y * (4 << CAP.DSTRD))	1003h + (2y * (4 << CAP.DSTRD))	SQyTDVL	Submission Queue y Tail Doorbell
1000h + ((2y + 1) * (4 << CAP.DSTRD))	1003h + ((2y + 1) * (4 << CAP.DSTRD))	CQYHDBL	Completion Queue y Head Doorbell

5.2.2 Controller Registers

[Table 126] Controller Capabilities

Bits	Type	Name	Default Value	Description
63:56	RO	-	0h	Reserved
55:52	RO	MPSMAX	0h	Memory Page Size Maximum (Maximum is 4KB)
51:48	RO	MPSMIN	0	Memory Page Size Minimum (Minimum is 4KB)
47:45	RO	-	0	Reserved
44:37	RO	CSS	1h	Command Sets Supported 1h: NVM command set
36	RO	NSSRS	1h	NVM Subsystem Reset Supported
35:32	RO	DSTRD	0	Doorbell Stride 0: Stride of 4 bytes
31:24	RO	TO	3Ch	Timeout 3Ch : 30 seconds
23:19	RO	-	0	Reserved
18:17	RO	AMS	1	Arbitration Mechanism Supported (Weighted Round Robin with Urgent supported)
16	RO	CQR	1	Contiguous Queues Required
15:00	RO	MQES	1FFh	Maximum Queue Entries Supported (512 entries supported)

[Table 127] Version

Bits	Type	Name	Default Value	Description
31:16	RO	MJR	1h	Major Version Number
15:08	RO	MNR	4h	Minor Version Number
7:00	RO	Reserved	0	Reserved

NOTE:
The PM9B1 supports NVM Express™ version 1.4(Mandatory Only)

[Table 128] Interrupt Mask Set

Bits	Type	Name	Default Value	Description
31:00	RW1S	IVMS	0	Interrupt Vector Mask Set

[Table 129] Interrupt Mask Clear

Bits	Type	Name	Default Value	Description
31:00	RW1C	IVMC	0	Interrupt Vector Mask Clear

[Table 130] Controller Configuration

Bits	Type	Name	Default Value	Description
31:24	RO	-	0	Reserved
23:20	RW	IOCQES	0	I/O Completion Queue Entry Size (Configured as a power of 2) (Should be set to 4 for a 16 byte entry size)
19:16	RW	IOSQES	0	I/O Submission Queue Entry Size (Configured as a power of 2) (Should be set to 6 for a 64 byte entry size)
15:14	RW	SHN	0	Shutdown Notification 0h: No notification 1h: Normal shutdown notification 2h: Abrupt shutdown notification 3h: Reserved CSTS.SHST indicates shutdown status.
13:11	RW	AMS	0	Arbitration Mechanism Selected 0h: Round Robin No other values supported.
10:7	RW	MPS	0	Memory Page Size MPS is 2^(12+MPS) Shall be within CAP.MPSMAX and CAP.MPSMIN ranges.
6:4	RW	CSS	0	Command Set Selected 0h: NVM Command Set No other values supported
3:1	RO	-	0	Reserved
0	RW	EN	0	Enable When set to 1, controller shall process commands. When cleared to 0, controller shall not process commands. This field is subject to CSTS.RDY and CAP.TO restrictions.

IF THERE IS ANY OTHER OPERATION TO IMPLEMENT IN ADDITION TO SPECIFICATION
IN THE DATASHEET OR JEDEC STANDARD, PLEASE CONTACT EACH BRANCH OFFICE OR
HEADQUARTERS OF SAMSUNG ELECTRONICS.

[Table 131] Controller Status

Bits	Type	Name	Default Value	Description
31:6	RO	-	0	Reserved
5	RW	PP	0	Processing Paused
4	RW1C	NSSRO	0	NVM Subsystem Reset Occurred
3:2	RO	SHST	0	Shutdown Status 0h: Normal operation, no shutdown requested 1h: Shutdown processing occurring 2h: Shutdown processing complete 3h: Reserved
1	RO	CFS	0	Controller Fatal Status
0	RO	RDY	0	1h: Controller ready to process commands 0h: Controller shall not process commands.

[Table 132] NVM Subsystem Reset

Bits	Type	Name	Default Value	Description
31:0	RW	NSSRC	0	NVM Subsystem Reset Control

[Table 133] Admin Queue Attributes

Bits	Type	Name	Default Value	Description
31:28	RO	-	0	Reserved
27:16	RW	ACQS	0	Admin Completion Queue Size Max: 4096 (Value of 4095h - 0's based value)
15:12	RO	-	0	Reserved
11:0	RW	ASQS	0	Admin Submission Queue Size Max: 4096 (Value of 4095h - 0's based value)

[Table 134] Admin Submission Queue Base Address

Bits	Type	Name	Default Value	Description
63:12	RW	ASQB	0	Admin Submission Queue Base Address
11:0	RO	-	0	Reserved

[Table 135] Admin Completion Queue Base Address

Bits	Type	Name	Default Value	Description
63:12	RW	ACQB	0	Admin Completion Queue Base Address
11:0	RO	-	0	Reserved

[Table 136] Controller Memory Buffer Location

Bits	Type	Name	Default Value	Description
31:12	RO	OFST	0	Offset
11:3	RO		0	Reserved
2:0	RO	BIR	0	Base Indicator Register

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[Table 137] Controller Memory Buffer Size

Bits	Type	Name	Default Value	Description
31:12	RO	SZ	0	Size
11:8	RO	SZU	0	Size Units
7:5	RO	-	0	Reserved
4	RO	WDS	0	Write Data Support
3	RO	RDS	0	Read Data Support
2	RO	LISTS	0	PRP SGL List Support
1	RO	CQS	0	Completion Queue Support
0	RO	SQS	0	Submission Queue Support

[Table 138] Submission Queue Tail y Doorbell

Bits	Type	Name	Default Value	Description
31:16	RO	-	0	Reserved
15:0	RW	SQT	0	Submission Queue Tail

[Table 139] Completion Queue Head y Doorbell

Bits	Type	Name	Default Value	Description
31:16	RO	-	0	Reserved
15:0	RW	CQH	0	Completion Queue Head

IF THERE IS ANY OTHER OPERATION TO IMPLEMENT IN ADDITION TO SPECIFICATION IN THE DATASHEET OR JEDEC STANDARD, PLEASE CONTACT EACH BRANCH OFFICE OR HEADQUARTERS OF SAMSUNG ELECTRONICS.

6.0 SUPPORTED COMMAND SET

The Admin command sets and NVM I/O command sets of Samsung SSD PM9B1 are defined in compliant with NVM Express™ specification revision 1.4.

6.1 Admin Command Set

The Admin command set is the commands that are submitted to the Admin Submission Queues. The detailed specifications are described in NVM Express specification document.

[Table 140] Opcode for Admin Commands

Opcode (Hex)	Command Name
00h	Delete I/O Submission Queue
01h	Create I/O Submission Queue
02h	Get Log Page
04h	Delete I/O Completion Queue
05h	Create I/O Completion Queue
06h	Identify
08h	Abort
09h	Set Feature
0Ah	Get Feature
0Ch	Asynchronous Event Request
10h	Firmware Commit
11h	Firmware Image Download
14h	Device Self-test
80h – BFh	I/O Command Set Specific
C0h – FFh	Vendor Specific

6.1.1 Identify Command

The Identify Command returns the data described below.

[Table 141] Identify Controller Data Structure

Bytes	O/M	Default Value	Description
1:0	M	144Dh	PCI Vendor ID
3:2	M	144Dh	PCI Subsystem Vendor ID
23:4	M	S###N#########	Serial Number(ASCII), # :Variables
63:24	M	128GB: SAMSUNG MZVL4128HCHQ-00BH1 256GB: SAMSUNG MZVL4256HBJD-00BH1 512GB: SAMSUNG MZVL4512HBLU-00BH1 1024GB: SAMSUNG MZVL41T0HBLB-00BH1	Model Number (ASCII)
71:64	M	HPS#NHAV	Firmware Revision, #:Variables
72	M	2h	Recommended Arbitration Burst
75:73	M	002538h	IEEE OUI
76	O	0	Controller Multi-Path I/O and Namespace Sharing Capabilities Bit 2: 1h - Controller is associated with an SR-IOV Virtual Function 0h - Controller is associated with a PCI Function. Bit 1: 1h - Device has Two or More controller 0h - Device has One Controller Bit 0: 1h - Device has Two or More physical PCI Express ports 0h - Device has One PCI Express port
77	M	5h	Maximum Data Transfer Size 5h : 128KB
79:78	M	7h	Controller ID (CNTLID)
83:80	M	00010400h	Version
87:84	M	0007A120h	RTD3 Resume Latency (RTD3R)
91:88	M	7A1200h	RTD3 Entry Latency
92:95	O	200h	Optional Asynchronous Events Supported (OAES) Bit 31:15 : Reserved Bit 14 : 0h - Not supports the Endurance Group Event Aggregate Log Page Change Notices event Bit 13 : 0h - Not LBA Status Information Notices event Bit 12 : 0h - Not Predictable Latency Event Aggregate Log Change Notices event Bit 11 : 0h - Not Support sending Asymmetric Namespace Access Change Notices Bit 10 : reserved Bit 9 : 1h - Support Firmware Activation Notices event Bit 8 : 0h - Not Support Namespace Attribute Notices event and the associated Changed Namespace List log page Bit 7:0 : Reserved
99:96	O	10h	Controller Attributes (CTRATT) Bit 31:10 : Reserved Bit 9 : 0h - Not Support reporting of a UUID List Bit 8 : 0h - Not Support SQ Associations Bit 7 : 0h - Not Support reporting of Namespace Granularity Bit 6 : 0h - Not Support restarting the Keep Alive Timer if an Admin command or an I/O command is processed during the Keep Alive Timeout Interval Bit 5 : 0h - Not Support Predictable Latency Mode Bit 4 : 1h - Support Endurance Groups Bit 3 : 0h - Not Support Read Recovery Levels Bit 2 : 0h - Not Support NVM Sets Bit 1 : 0h - Support Non-operational power state permissive mode Bit 0 : 0h - Not Support 128-bit Host Identifier
101:100		0h	Read Recovery Levels Supported
110:102	-	-	Reserved
111	M	1h	Controller Type
127:112	O	0h	FRU Globally Unique Identifier
129:128	O	0h	Command Retry Delay Time 1
131:130	O	0h	Command Retry Delay Time 2

133:132	O	0h	Command Retry Delay Time 3
239:134	-	-	Reserved
255:240	O	0h	Refer to NVM-MI Spec
257:256	M	17h	Optional Admin Command Support Bits 15:5 - Reserved Bit 4: 1h - Device Self-Test Bit 3: 0h - Namespace Management Attachment Not Supported Bit 2: 1h – Firmware Activate/Download Supported Bit 1: 1h Format NVM Supported Bit 0: 1h Security Send and Security Receive Supported
258	M	7h	Abort Command Limit (Maximum number of concurrently outstanding Abort commands) (0's based value)
259	M	3h	Asynchronous Event Request Limit (Maximum number of concurrently outstanding Asynchronous Event Request commands) (0's based value)
260	M	16h	Firmware Updates Bits 7:5 – Reserved Bit 4 - 1h Support firmware activation without a reset Bits 3:1 – Number of firmware slots Bit 0 – 0h, "1" indicates Slot 1 is read only
261	M	Fh	Log Page Attributes Bits 7:5 : Reserved Bit 4 : 0h Supports the Persistent Event Log Bit 3 : 1h - Support the Telemetry Host-Initiated and Telemetry Controller-Initiated log pages and sending Telemetry Log Notices Bit 2 : 1h - Support extended data for the Get Log Page command Bit 1 : 1h - Support the command effects log page Bit 0 : 1h - SMART data is global for all namespaces
262	M	3Fh	Error Log Page Entries (Number of Error Information log entries stored by controller) (0's based value)
263	M	4h	Number of Power States Support (0's based value)
264	M	1h	Admin Vendor Specific Command Configuration Bits 7:1 – reserved Bit 0 – Indicates Admin Vendor Specific Commands use the format defined in NVM Express 1.0c Figure 8.
265	O	1h	Autonomous Power State Transition Attributes (APSTA)
267:266	M	164h	Warning Composite Temperature Threshold
269:268	M	166h	Critical Composite Temperature Threshold
271:270	O	0h	Maximum Time for Firmware Activation
275:272	O	00004000h	Host Memory Buffer Preferred Size
279:276	O	00001000h	Host Memory Buffer Minimum Size
295:280	O	1024GB: EE77A56000h 512GB: 773C256000h 256GB: 3B9E656000h 128GB: 1DCF856000h	Total NVM Capacity
311:296	O	0h	Unallocated NVM Capacity
315:312	O	0h	Replay Protected Memory Block Support
317:316	O	00000023h	Extended Device Self-Test Time
318	O	1h	Device Self-Test Options
319	L0	4h	Firmware Update Granularity (FWUG):
321:320	L0	0x0	Keep Alive Support (KAS):
323:322	O	0x1	Host Controlled Thermal Management Attributes (HCTMA):
325:324	O	13Eh	Minimum Thermal Management Temperature (MNTMT):
327:326	O	164h	Maximum Thermal Management Temperature (MXTMT):
331:328	O	0x60000002	Sanitize Capabilities (SANICAP):

335:332	O	10h	Host Memory Min Descriptor Entry Size (HMMINDS)
337:336	O	400h	Host Memory Max Descriptor Entries (HMMAXD)
339:338	O	0h	NVM Set Identifier Maximum (NSETIDMAX)
341:340	O	1h	Endurance Group Identifier Maximum (ENDGIDMAX)
342	O	0h	ANA Transition Time (ANATT)
343	O	0h	Asymmetric Namespace Access Capability (ANACAP)
347:344	O	0h	ANA Group Identifier Maximum (ANAGRPMAX)
351:348	O	0h	Number of ANA Group Identifiers (NANAGRPID)
355:352	O	0h	Persistent Event Log Size (PELS)
511:356		-	Reserved
512	M	66h	Submission Queue Entry Size Bits 7:4 – 6h Max SQES (64 bytes) Bits 3:0 – 6h Required SQES (64 bytes)
513	M	44h	Completion Queue Entry Size Bits 7:4 – 4h Max CQES (16 bytes) Bits 3:0 – 4h Required CQES (16 bytes)
515:514		0	Reserved
519:516	M	1h	Number of Namespaces
521:520	M	5Eh	Optional NVM Command Support Bits 15:6 – Reserved Bit 5 – 1h Reservations Supported 0h Not support Reservations Bit 4 – 1h Save field in Set Feature & Select field in Get Feature Supported 0h Not support Save field in Set Feature & Select field in Get Feature Bit 3 – 1h Write Zeros Supported 0h Not support Write Zeros Bit 2 – 1h Dataset Management Supported 0h Not support Dataset Management Bit 1 – 1h Write Uncorrectable Supported 0h Not support Write Uncorrectable Bit 0 – 1h Compare Supported 0h Not support Compare
523:522	M	0h	Fused Operation Support Bits 15:1 – Reserved Bit 0 – 0h Compare/Write Fused Operation Not Supported
524	M	0h	Format NVM Attributes Bits 7:3 – Reserved Bit 2 – 1h Cryptographic Erase is supprted 0h Cryptographic Erase is not supprted Bit 1 – 0h Cryptographic erase and user data erase Per Namespace Bit 0 – 0h Format Per Namespace
525	M	5h	Volatile Write Cache Bits 7:1 - Reserved Bit 0 -1h Volatile write cache is present 0h No Volatile Write Cache present
527:526	M	3FFh	Atomic Write Unit Normal (0's based value)
529:528	M	0h	Atomic Write Unit Power Fail (0's based value)
530	M	1h	NVM Vendor Specific Command Configuration Bits 7:1 – reserved Bit 0 – Indicates NVM Vendor Specific Commands use the format defined in NVM Express
531	M	0h	Reserved
533:532	O	0h	ACWU
534:533	M	0h	Reserved
539:536	O	0h	No SGL support
543:540	O	0h	Max Number of Allowed Namespaces
767:544	-	-	Reserved

1023:768	M	nqn.1994-11.com.sam-sung:nvme:PM9B1:M.2:SN	NVM Subsystem NVMe Qualified Name
I/O Command Set Attributes			
1791:1024	-	-	Reserved
2047:1024	-	-	Refer to the NVMe over Fabrics Specification
Power State Descriptors			
2079:2048	M	refer to 'Identify Power State Descriptor Data Structure'	Power State 0 Descriptor
2111:2080	O	refer to 'Identify Power State Descriptor Data Structure'	Power State1 Descriptor
2143:2112	O	refer to 'Identify Power State Descriptor Data Structure'	Power State 2 Descriptor
2175:2144	O	refer to 'Identify Power State Descriptor Data Structure'	Power State 3 Descriptor
2207:2176	O	refer to 'Identify Power State Descriptor Data Structure'	Power State 4 Descriptor
3039:2208	-	0h	(N/A)
3071:3040	O	0h	Power State 31 Descriptor (N/A)
Vendor Specific			
3278:3072	-	Samsung Specific	Samsung Reserved

[Table 142] Identify Power State Descriptor Data Structure

Bytes	Description	Power State 0	Power State 1	Power State 2	Power State 3	Power State 4
255:184	Reserved	-	-	-	-	-
183:182	Active Power Scale(APS)	0	0	0	0	0
181:179	Reserved	-	-	-	-	-
178:176	Active Power Workload(APW)	0	0	0	0	0
175:160	Active Power(ACTP)	0	0	0	0	0
159:152	Reserved	-	-	-	-	-
151:150	Idle Power Scale(IPS)	0	0	0	0	0
149:144	Reserved	-	-	-	-	-
143:128	Idle Power(IDLP)	0	0	0	0	0
127:125	Reserved	-	-	-	-	-
124:120	Relative Write Latency	0	0x1	0x2	0x3	0x4
119:117	Reserved	0	-	-	-	-
116:112	Relative Write Throughput	0	0x1	0x2	0x3	0x4
111:109	Reserved	-	-	-	-	-
108:104	Relative Read Latency	0	0x1	0x2	0x3	0x4
103:101	Reserved	-	-	-	-	-
100:96	Relative Read Throughput	0	0x1	0x2	0x3	0x4
95:64	Exit Latency	0	0	0	2800	19000
63:32	Entry Latency	0	0	0	200	4000
31:26	Reserved	-	-	-	-	-
25	Non-Operational State	0	0	0	1	1
24	Max Power Scale	0 (0.01W)	0 (0.01W)	0 (0.01W)	1 (0.0001W)	1 (0.0001W)
23:16	Reserved	-	-	-	-	
15:00	Maximum Power	594	529	286	600	50

[Table 143] Identify Namespace Data Structure

Bytes	O/M	Default Value		Description
7:0	M	1024GB	733BD2B0h	Namespace Size
		512GB	3B9E12B0h	
		256GB	1DCF32B0h	
		128GB	EE7C2B0h	
15:8	M	1024GB	733BD2B0h	Namespace Capacity
		512GB	3B9E12B0h	
		256GB	1DCF32B0h	
		128GB	EE7C2B0h	
23:16	M	1024GB	733BD2B0h	Namespace Utilization
		512GB	3B9E12B0h	
		256GB	1DCF32B0h	
		128GB	EE7C2B0h	
24	M	0h		Namespace Features Bits 7:5 Reserved Bit 4 : 0h - Support NPWG, NPWA, NPDG, NPDA, and NOWS Bit 3 : 0h - Non-zero NGUID / Non-zero EUI64 field reuse or not Bit 2 : 0h - Support deallocated or unwritten logical block error Bit 1 : 0h - Use NAWUN, NAWUPF, NACWU Field Bit 0: 0h Thin provisioning not supported
25	M	1h		Number of LBA Formats
26	M	0h		Formatted LBA Size Bits 7:5 – Reserved Bit 4: Metadata interleaved or separate (based on LBA format) Bit 3:0 – Indicates LBA format
27	M	0h		Metadata Capabilities Bits 7:2 – Reserved Bit 1 – Supports Metadata as separate buffer Bit 0 – Supports Metadata as extended LBA
28	M	0h		End-to-end Data Protection Capabilities Bits 7:5 – Reserved Bit 4 – Supports protection information as last 8 bytes of Metadata Bit 3 – Supports protection information as first 8 bytes of metadata Bit 2 – Supports Type 3 protection information Bit 1 – Supports Type 2 protection information Bit 0 – Supports Type 1 protection information
29	M	0h		End-to-End Data Protection Type Settings Bits 7:4 – Reserved Bit 3 – 1: Protection information transferred as first 8 bytes of metadata Bit 3 – 0: Protection information transferred as last 8 bytes of metadata Bit 2:0 – 000b: Protection information disabled Bit 2:0 – 1h: Protection type 1 enabled Bit 2:0 – 2h: Protection type 2 enabled Bit 2:0 – 3h: Protection type 3 enabled
30	O	0h		Namespace Multi-path I/O and Namespace sharing Capabilities (NMIC) Bits 7:1 - Reserved Bit 0 - 1 : Accessible by two or more controllers Bit 0 - 0 : Private namespace

31	O	0h		Reservation Capabilities (RESCAP) Bits 7 - Reserved Bits 6 - 1: Namespace supports the Exclusive Access (All Registrants reservation type) Bit 5 - 1 : Namespace supports the Write Exclusive (All Registrants reservation type) Bit 4 - 1 : Namespace supports the Exclusive Access (Registrants only reservation type) Bit 3 - 1 : Namespace supports the Write Exclusive (Registrants only reservation type) Bit 2 - 1 : Namespace supports the Exclusive Access Reservation type Bit 1 - 1 : Namespace supports the Write Exclusive Reservation type Bit 0 - 1 : Namespace supports the Persist Through Power Loss capability
32	O	80h		Bit 7 - 1 :Format Progress Indicator
33	O	1h		Deallocate Logical Block Feature
35:34	O	0h		Namespace Atomic Write Unit Normal
37:36	O	0h		Namespace Atomic Write Unit Power Fail
39:38	O	0h		Namespzce Atomic Compare & Write Unit
41:40	O	0h		Namespace Atomic Boundary Size Normal
43:42	O	0h		Namespace Atomic Boundary Offset
45:44	O	0h		Namespace Atomic Boundary Size Power Fail
47:46	-	-		Reserved
63:48	O	1024GB	EE77A56000h	NVM Capacity
		512GB	773C256000h	
		256GB	3B9E656000h	
		128GB	1DCF856000h	
65:64	O	0h		Namespace Preferred Write Granularity
66:67	O	0h		Namespace Preferred Write Alignment
69:68	O	0h		Namespace Preferred Deallocate Granularity
71:70	O	0h		Namespace Preferred Deallocate Alignment
73:72	O	0h		Namespace Optimal Write Size
91:74	-	-		reserved
95:92	O	0h		ANA Group Identifier
98:96	-	-		reserved
99	O	0h		Namespace Attributes
101:100	O	0h		NVM Set Identifier
103:102	O	1h		Endurance Group Identifer
119:104	O	0h		Namespace Globally Unique Identifier (NGUID) #:Variables *NGUID specifies data in a big endian format.
127:120	O	002538##########h		IEEE Extended Unique Identifier(EUI64) #:Variables *EUI64 specifies data in a big endian format.
131:128	M	refer to 'LBA Format 0 Data Structure'		LBA Format 0 Support
135:132	O	refer to 'LBA Format 1 Data Structure'		LBA Format 1 Support
139:136	O	0h		LBA Format 2 Support
143:140	O	0h		LBA Format 3 Support
147:144	O	0h		LBA Format 4 Support (N/A)
…				
191:188	O	0h		LBA Format 15 Support (N/A)
383:192	-	0h		Reserved
Vendor Specific				
4095:384	-	0h		Samsung Reserved

[Table 144] LBA Format 0 Data Structure

Bits	Name	Default Value	Description
31:26	-	0	Reserved
25:24	RP	0	Relative Performance
23:16	LBADS	9h	LBA Data Size
15:00	MS	0	Meta data Size

6.2 NVM Express™ I/O Command Set

[Table 145] Opcode for NVM Express™ I/O Commands

Opcode (Hex)	Command Name
00h	Flush
01h	Write
02h	Read
04h	Write Uncorrectable
05h	Compare
08h	Write Zeroes
09h	Dataset Management

NOTE:
1) Deallocate feature in Dataset Management command is only supported in the Samsung SSD PM9B1.

6.3 SMART/Health Information

[Table 146] SMART/Health Information Log

Bytes	Default Value	Attribute Description
0	0	Critical Warning Bit 7:5 – Reserved Bit 4 – 1h: the volatile memory backup device has failed. (only valid if the controller has a volatile memory backup solution) Bit 3 – 1h: the media has been placed in read only mode Bit 2 – 1h: the NVM subsystem reliability has been degraded due to significant media related errors or any internal error that degrades NVM subsystem reliability Bit 1 – 1h: a temperature is above an over temperature threshold or below an under temperature threshold Bit 0 – 1h: the available spare space has fallen below the threshold
2:1	current temp.	Temperature
3	100	Available Spare
4	10	Available Spare Threshold
5	0	Percentage Used
31:6	-	Reserved
47:32	0	Data Units Read
63:48	0	Data Units Written
79:64	0	Host Read Commands
95:80	0	Host Write Commands
111:96	0	Controller Busy Time
127:112	0	Power Cycles
143:128	0	Power On Hours
159:144	0	Unsafe Shutdowns
175:160	0	Media and Data Integrity Errors
191:176	0	Number of Error Information Log Entries
195:192	0	Warning Composite Temperature Time
199:196	0	Critical Composite Temperature Time
201:200	current temp.	Temperature Sensor 1
203:202	current temp.	Temperature Sensor 2
205:204	0	Temperature Sensor 3
207:206	0	Temperature Sensor 4
209:208	0	Temperature Sensor 5
211:210	0	Temperature Sensor 6
213:212	0	Temperature Sensor 7
215:213	0	Temperature Sensor 8
511:216	-	Reserved

IF THERE IS ANY OTHER OPERATION TO IMPLEMENT IN ADDITION TO SPECIFICATION
IN THE DATASHEET OR JEDEC STANDARD, PLEASE CONTACT EACH BRANCH OFFICE OR
HEADQUARTERS OF SAMSUNG ELECTRONICS.

7.0 PRODUCT REGULATORY COMPLIANCE

7.1 Product regulatory compliance and Certifications

Samsung SSD products comply with the following:

[Table 147] Regulations covered by region

Category	Certifications	Region or Country
EMC	CE	E.U. (Europe)
	UKCA	UK (without NI)
	FCC	U.S.
	IC	CANADA
	RCM	Australia & New Zealand
	Morocco	Morocco
	KC	Korea
	VCCI	Japan
	BSMI	Taiwan
Safety	c-UL-us	America(U.S., CANADA)
	CE	E.U. (Europe)
	UKCA	UK (without NI)
	TUV-GS	-
	CB	-

The three existing compliance marks (C-Tick, A-Tick and RCM) are consolidated into a single compliance mark - the RCM.

For more details are available at the following internet address:
www.samsung.com/semiconductor

MANUFACTURER'S DECLARATION FOR CE CERTIFICATION

Hereby, Samsung Electronics declares that the product above is in compliance with Directive 2014/30/EU, 2011/65/EU, 2014/35/EU.

EU Compliance Contact information
Samsung Electronics (UK) Ltd, Euro QA Lab, Yateley, GU46 6GG. UK

UK Conformity Assessed (UKCA)

FEDERAL COMMUNICATION COMMISSION (FCC)

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Unique Identifier : Check the label on the product
Responsible Party : Samsung Electronics America QA Lab
19 Chapin Rd. Building D Pine Brook NJ 07058
Tel : 1-973-808-6362, Fax : 1-973-808-6361

Innovation, Science and Economic Development Canada ICES-003 Compliance Label
CAN ICES-3 (B)/NMB-3(B)

Taiwan RoHS (Restriction of Hazardous Substances Directive)

設備名稱：固態硬碟， 型號（型式）：請參考外箱標籤						
單元Unit	限用物質及其化學符號					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr^{+6})	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
電子零組件	○	○	○	○	○	○
電路板	○	○	○	○	○	○
銲料	○	○	○	○	○	○
主動及被動零組件	-	○	○	○	○	○
次要零組件	○	○	○	○	○	○
備考1. "○" 係指該項限用物質之百分比含量未超出百分比含量基準值。						
備考2. "－" 係指該項限用物質為排除項目。						



Waste Electrical and Electronic Equipment
This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service, or the shop where you purchased the product.

8.0 REFERENCES

[Table 148] Standards References

Item	Website
PCI Express® Base Specification Revision 3.0	http://www.pcisig.com/specifications/pciexpress/base3/
PCI Express® M.2 Specification Revision 1.1	http://pcisig.com/specifications
NVM Express™ Specification Rev. 1.3	http://www.nvmexpress.org/
Solid-State Drive Requirements and Endurance Test Method(JESD218A)	https://www.jedec.org/document_search?search_api_views_fulltext=JESD218A
Solid-State Drive Requirements and Endurance Test Method(JESD219A)	https://www.jedec.org/document_search?search_api_views_fulltext=JESD219A

HP Brasil Indústria e Comércio de Equipamentos Eletrônicos Ltda.
Alameda Xingu, n.º 350, 8º andar
Alphaville Industrial, Barueri/SP
CEP: 06455-030
Brasil

declaração

Barueri, 17 de julho de 2025

Ao/À
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS

Assunto:
PREGÃO ELETRONICO 94010/2025-CPL/MP/PGJ SRP

BDI 22631

A empresa **Torino Informática Ltda**, inscrita no CNPJ **03.619.767/0001-91** sediada na RUA RITA DE CARVALHO MONTEIRO, 120, RETIRO SÃO JOÃO, SOROCABA, SP - CEP 18085-750 com filial inscrita no CNPJ **03.619.767/0005-15** situada a Avenida 600, s/n, Quadra 15, Módulo 10, Setor Industrial, TIMS, Serra, ES, CEP 29161-419, é um **PARCEIRO AUTORIZADO HP, PARA COMPRA DIRETA DE PRODUTOS DA HP**, estando apto a comercializar as linhas de produtos HP de nossa fabricação descritas abaixo.

Declaramos ainda que a TORINO INFORMÁTICA LTDA. é o parceiro de serviços do programa AMPLIFY, autorizado a prestar serviço de assistência técnica dos produtos que comercializa no telefone 0800 201-5666.

Produtos:

B20A5LS#AK4 – HP Elite Mini 800 G9 – Garantia padrão do fabricante
67V68AV#TMP – Z2 Tower G9 – Garantia padrão do fabricante
9Z0P1AV#TMP – EliteBook 640 G11 – Garantia padrão do fabricante
9A816AV#TMP – ZBook Power 16 inch G11 – Garantia padrão do fabricante

Declaramos ainda que, o produto **B20A5LS#AK4** – HP Elite Mini 800 G9:

- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;
- Informações técnicas básicas como modelo do processador, capacidade de memória instalada, capacidade e tipo do dispositivo de armazenamento, versão do sistema operacional e garantia padrão de fábrica estarão descritas na proposta comercial emitida pela CONTRADA;
- Modelo de equipamento ofertado é a mais recente geração disponibilizada pela HP com comercialização no Brasil;
- A HP disponibiliza a ferramenta HP Support Assistant que permite a verificação e instalação das últimas atualizações de todas as ferramentas e drivers disponibilizadas pela HP para o equipamento. Sendo capaz de monitorar o sistema, realizar diagnósticos, emitir alertas e ajudar a reparar erros do sistema, ajudando assim a manter a saúde e segurança do sistema. Permite verificar o status da garantia pela ferramenta;

JCAJ

- Possui BIOS da HP, desenvolvida pela HP, em conformidade com a especificação minima UEFI 2.7 (http://www.uefi.org/) e capturáveis pela aplicação de inventário como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com descrição do modelo, número de série e campo de registro de número de patrimônio com extensão mínima de 15 dígitos, todos gravados em memória não volátil e sendo estas capturáveis por aplicações de inventario como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com interface gráfica com navegação utilizando mouse ou teclado, disponível em mais de 3 idiomas (por exemplo: português, espanhol, inglês etc.);
- Possui BIOS atualizável com opção de recuperação de falha, a partir de arquivo de recuperação no disco rígido ou USB externa;
- Possui BIOS com suporte à verificação de integridade, através do recurso HP Sure Start;
- As atualizações da BIOS, quando necessárias, são disponibilizadas no site da HP Inc.;
- Possui BIOS implementada em “flash ROM” atualizável diretamente pelo microcomputador, utilizando memória não volátil e reprogramável, Plug and Play, entregue na versão mais atual disponibilizada pela HP. Podendo ser atualizada por software de gerenciamento remoto;
- Possui BIOS com capacidade de habilitar / desabilitar portas USB;
- Possui BIOS com possibilidade de configuração de senhas para Power On, Administrador e unidade de armazenamento;
- Possui BIOS com suporte à tecnologia de previsão/contingenciamento de falhas de disco rígido S.M.A.R.T habilitada;
- Possui BIOS com suporte a boot por pendrive ou unidade de armazenamento externo, conectado a uma porta USB 2.0 ou superior;
- Possui BIOS compatível com o padrão mínimo ACPI 6.0. E também compatível com os padrões: DMI, SNMP, WMI, SMBIOS;
- Possui BIOS em conformidade com a normativa NIST 800-147 e NIST 800-193 (HP Sure Start);
- Possui a ferramenta HP Secure Erase integrada na BIOS, que possibilita apagar de forma definitiva e irrecuperável todos os dados da unidade de armazenamento, permitindo o descarte seguro de seus equipamentos (NIST 800-88);
- Possui BIOS com ferramenta de diagnóstico UEFI de componentes internos de hardware (processador, memória, unidade de armazenamento, áudio, teclado, rede, placa mãe, portas USB e vídeo). Acessível via BIOS ou teclas de atalho (F1...F12). A mensagem de erro é suficiente para abertura de chamado em garantia;
- Possui sistema de monitoramento de temperatura controlada pela BIOS, adequado ao processador, fonte e demais componentes internos ao gabinete;
- Possui recurso para realizar downgrade de BIOS e replicação de configurações de BIOS em escala utilizando um arquivo referência ou via Powershell;
- Possui placa mãe fabricada e desenvolvida pela HP, exclusiva para o modelo, com o nome da HP identificado na mesma;
- Possui placa mãe com capacidade de desligamento do vídeo e da unidade de armazenamento após tempo determinado pelo usuário e reiniciar por acionamento de teclado ou pela movimentação do mouse e possui função de economia de energia;
- Possui chip TPM integrado, acompanhado de drivers e a ferramenta nativa do Windows (tpm.msc) para utilização do chip e possibilitando a utilização de todos os recursos de segurança e criptografia (A ferramenta tpm.msc é fornecida com os equipamentos adquiridos com o Sistema Operacional Windows 10 / 11 Pro);
- O chipset é do mesmo fabricante do processador, com tecnologia que permite que o sistema retome rapidamente do estado de hibernação tanto para unidades de armazenamento do tipo SATA e do tipo PCIe;
- Sempre que o equipamento for inicializado, será mostrado no monitor de vídeo o nome da HP;
- Possuem os mesmos padrões de cores, sendo o preto ou cinza escuro a cor predominante e com o logotipo da HP impresso;
- Possui acabamento interno composto de superfícies não cortantes;
- O gabinete possui tratamento anticorrosivo;

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- O gabinete possui base/superfície antiderrapante;
- Possui gabinete feito em liga metálica e front bezel de ABS
- O equipamento pode funcionar na posição horizontal ou vertical.
- Possui afixado no gabinete do equipamento, o Selo Certificado de Autenticidade (COA – Certificate of Authenticity) do software Windows na versão instalada e com serial de ativação do sistema operacional gravado no BIOS, quando adquirido com o sistema operacional Windows 11 conforme descrito na proposta comercial;
- O fluxo do ar interno segue as orientações do fabricante do microprocessador;
- Possui tecnologia implementada que controle o nível de desempenho do processador automaticamente, ajustando dinamicamente a frequência e a voltagem a cada a necessidade requerida pela atividade do momento para que seja otimizada a autonomia de bateria do equipamento;
- Possui suporte a implementação de tecnologia dual-channel para a memória RAM;
- As unidades de armazenamento disponíveis para fabricação do modelo, possuem suporte à tecnologia de segurança SMART e NCQ;
- Todos os conectores das portas de entrada/saída são identificados por cores ou símbolos, de acordo com o padrão PC'99 System Design Guide;
- Possui controladora de áudio onboard, com entrada e saída de áudio estéreo (combo jack), capaz de reproduzir os sons gerados pelo sistema (como músicas e beeps de alerta de diagnósticos), e está conectado diretamente a placa mãe sem uso de adaptadores, com suporte a 16bits;
- O sistema de áudio onboard possui a possibilidade de desativação por software ou automaticamente quando houver conexão com a caixa de som ou fone de ouvido;
- Possui controladora de vídeo integrada, com suporte a múltiplos monitores (mínimo de 2) onde para maiores quantidades estará descrito na proposta comercial emitida pela CONTRATADA. Os monitores podem operar simultaneamente, de forma estendida ou espelhada
- Possui controladora de vídeo integrada com capacidade de alocar no mínimo 1.5GB de memória de vídeo, compartilhada de forma dinâmica com a memória RAM. Possui suporte para DirectX 12 e Open GL 4.5 e compatibilidade do driver com o padrão WDDM (Windows Display Driver Model);
- Possui controladora de rede Gigabit Ethernet 10/100/1000 Mbps com reconhecimento automático da velocidade da rede, com capacidade de operar no modo full-duplex, autosense, plug and play, com suporte ao protocolo SNMP, totalmente configurável por software, com suporte a VLAN, com suporte a PXE 2.1 e com função Wake-On-Lan instalada e em funcionamento. Com conector RJ-45 com LEDs de diagnostico;
- Possui interface de comunicação wireless integrada desde que a CONTRATADA incluía este item na proposta comercial. Esta placa wireless tem suporte aos padrões 802.11ax, 802.11ac, 802.11a, 802.11b, 802.11g e 802.11n, com suporte aos protocolos 802.11i (WLAN security, TKIP e AES), WPA, WPA2, WEP 64 e 128, IEEE 802.11 (Wired Equivalent Privacy), IEEE 802.1x. Com certificado de homologação válido da ANATEL, e no Wi-fi Certified Aliance. O ajuste da potência é de acordo com a recepção do sinal, de forma a proporcionar economia de bateria;
- Possui teclado da HP, desde que a CONTRATADA inclua este item na proposta comercial. Teclado HP com com todos os caracteres da língua portuguesa incluindo Ç, com teclado numérico embutido, com teclas Windows Logo (acesso ao menu iniciar), com LEDs indicativos de “caps lock” e “num lock”. A impressão sobre as teclas é do tipo permanente, não apresentando desgaste por abrasão ou uso prolongado. Possui sistema de proteção contra derramamento acidental de pequenas quantidades de líquidos. Possui sistema para ajuste de inclinação e cabo USB de no mínimo 1.5m. Não possui teclas dedicadas de funções multimedia, desligar, hibernar ou standby.
- Possui mouse óptico da HP, desde que a CONTRATADA incluía este item na proposta comercial. Mouse HP com conector USB, cabo com comprimento mínimo de 1.8m, com resolução de 1000dpi, com 03 botões (esquerdo, direito e central próprio para rolagem (scrol)), formato ergonômico e de conformação ambidestra;
- Fonte externo com ajuste automático 100~240v / 50-60Hz (bivolt), suficiente para suportar todas as configurações do equipamento conforme as especificações técnicas contidas no catálogo técnico do mesmo, permitindo o funcionamento por no mínimo 10 horas por dia e 5 dias por semana;
- Possui cabo de energia para a fonte de alimentação de acordo com o novo padrão ABNT (NBR 14136), com comprimento minimo de 1,5m (total fonte mais cabo de energia);

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- Todos os componentes do produto são novos (sem uso, reforma ou recondicionamento) e estão em linha de fabricação;
- Pertence a linha corporativa da HP;
- A HP possui programas de Logística Reversa (https://www.hp.com/br-pt/hp-information/sustainable-impact/planet-product-recycling.html);
- São bens constituídos em parte, por material reciclado, atóxico, biodegradável e atendem a diretiva RoHS;
- Todos os itens e seus acessórios são novos, não recondicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, frisagens, furações, fitas adesivas, marcas, falhas de fabricação ou qualquer outro procedimento ou emprego de materiais inadequados que adaptem forçadamente o equipamento ou suas partes que sejam fisicamente ou logicamente incompatíveis;
- As unidades dos equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, utilizando sempre que possível de materiais recicláveis, de forma a garantir a máxima proteção durante o transporte e a armazenagem;
- Cada equipamento possui um número de série único, afixado em local visível em etiqueta de difícil remoção ou impresso a laser, constando a marca, o modelo e o número de série do equipamento e também na embalagem;
- A HP possui pagina na Internet no qual pelo número de série é possível verificar o início e fim do período de garantia do equipamento;
- Os drivers, softwares e sistema operacional fornecido com o equipamento da HP estão disponíveis para download no site da HP, permitindo a instalação e recuperação do sistema operacional ao padrão de fábrica.
- A HP disponibiliza a ferramenta HP Cloud Recovery que permite realizar o download dos Drivers e do Sistema Operacional de forma automatizada para gerar pendrive de reinstalação;
- É disponibilizada documentação técnica necessária à instalação e operação do equipamento em português;
- A HP Disponibiliza “Central de atendimento telefônico” com número de telefone 0800 ou Whatsapp para abertura de chamado, em dias úteis, (segunda-feira a sexta-feira), em horário comercial (das 8h às18h) e “Central de atendimento via sistema web” para abertura de chamado 24x07, (domingo a domingo), a qualquer horário (das 00:00h às 23:59h);
- A HP Mantém os registros dos chamados que foram abertos, mantendo as informações que foram registradas sobre o mesmo;
- A ferramenta Web de abertura de chamados da HP permite que o cliente a visualize e acompanhe os chamados abertos anteriormente;
- Possui garantia padrão de fábrica de 01 ano para reposição de peças, mão de obra, com atendimento "on-site", conforme descrito na proposta comercial emitida pela CONTRATADA;
- Permite a extensão de garantia para 03, 04 ou 05 anos para reposição de peças, mão de obra, para o monitor, com atendimento do tipo "on-site" através de aquisição da CONTRADA de carepack de extensão de garantia, devendo descrever em sua proposta comercial a descrição da extensão da garantia (HP Carepack);
- A assistência técnica “on-site” será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;
- Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa, salvo quando o defeito for provocado por uso inadequado dos equipamentos;
- Certificado de Garantia é válido em todo o território nacional;
- Abertura do equipamento para limpeza, adição de memória ou SSD pela CONTRATANTE não implicará em perca da garantia desde que não cause mau uso. A garantia da HP não cobrirá o suporte destas peças.

Declaramos ainda que, o produto **67V68AV#TMP** – Z2 Tower G9:

JCAJ

- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará

as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;

- Informações técnicas básicas como modelo do processador, capacidade de memória instalada, capacidade e tipo do dispositivo de armazenamento, versão do sistema operacional e garantia padrão de fábrica estarão descritas na proposta comercial emitida pela CONTRADA;
- Modelo de equipamento ofertado é a mais recente geração disponibilizada pela HP com comercialização no Brasil;
- A HP disponibiliza a ferramenta HP Support Assistant que permite a verificação e instalação das últimas atualizações de todas as ferramentas e drivers disponibilizadas pela HP para o equipamento. Sendo capaz de monitorar o sistema, realizar diagnósticos, emitir alertas e ajudar a reparar erros do sistema, ajudando assim a manter a saúde e segurança do sistema. Permite verificar o status da garantia pela ferramenta;
- Possui BIOS da HP, desenvolvida pela HP, em conformidade com a especificação minima UEFI 2.7 (http://www.uefi.org/) e capturáveis pela aplicação de inventário como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com descrição do modelo, número de série e função de registro de número de patrimônio com extensão mínima de 15 dígitos, todos gravados em memória não volátil e sendo estas capturáveis por aplicações de inventario como por exemplo SCCM, Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com interface gráfica com navegação utilizando mouse ou teclado, disponível em mais de 3 idiomas (por exemplo: portugues, espanhol, inglês etc.);
- Possui BIOS atualizável com opção de recuperação de falha, a partir de arquivo de recuperação no disco rígido ou USB externa;
- Possui BIOS com suporte à verificação de integridade, através do recurso HP Sure Start;
- As atualizações da BIOS, quando necessárias, são disponibilizadas no site da HP Inc., com atualização via download na internet diretamente na interface de configuração da BIOS também;
- Possui BIOS implementada em “flash ROM” atualizável diretamente pelo microcomputador, utilizando memória não volátil e reprogramável, Plug and Play, entregue na versão mais atual disponibilizada pela HP. Podendo ser atualizada por software de gerenciamento remoto;
- Possui BIOS com capacidade de habilitar / desabilitar portas USB;
- Possui BIOS com possibilidade de configuração de senhas para Power On, Administrador e unidade de armazenamento;
- Possui BIOS com suporte à tecnologia de previsão/contingenciamento de falhas de disco rígido S.M.A.R.T habilitada;
- Possui BIOS com suporte a boot por pendrive ou unidade de armazenamento externo, conectado a uma porta USB 2.0 ou superior;
- Possui BIOS compatível com o padrão minimo ACPI 6.0, E também compatível com os padrões: DMI, SNMP, WMI e SMBIOS;
- Possui BIOS em conformidade com a normativa NIST 800-147 e NIST 800-193 (HP Sure Start);
- Possui a ferramenta HP Secure Erase integrada na BIOS, que possibilita apagar de forma definitiva e irrecuperável todos os dados da unidade de armazenamento, permitindo o descarte seguro de seus equipamentos (NIST 800-88);
- Possui BIOS com ferramenta de diagnóstico UEFI de componentes internos de hardware (processador, memória, unidade de armazenamento, áudio, teclado, rede, placa mãe, portas USB e vídeo). Acessível via BIOS ou teclas de atalho (F1...F12). A mensagem de erro é suficiente para abertura de chamado em garantia;
- Possui sistema de monitoramento de temperatura controlada pela BIOS, adequado ao processador, fonte e demais componentes internos ao gabinete;
- Possui recurso para realizar downgrade de BIOS e replicação de configurações de BIOS em escala utilizando um arquivo referência ou via Powershell;
- Possui placa mãe fabricada e desenvolvida pela HP, exclusiva para o modelo, com o nome da HP identificado na mesma;

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- Possui placa mãe com capacidade de desligamento do vídeo e da unidade de armazenamento após tempo determinado pelo usuário e reiniciar por acionamento de teclado ou pela movimentação do mouse e possui função de economia de energia;
- Possui chip TPM integrado, acompanhado de drivers e a ferramenta nativa do Windows (tpm.msc) para utilização do chip e possibilitando a utilização de todos os recursos de segurança e criptografia (A ferramenta tpm.msc é fornecida com os equipamentos adquiridos com o Sistema Operacional Windows 10 / 11 Pro);
- O chipset é do mesmo fabricante do processador, com tecnologia que permite que o sistema retome rapidamente do estado de hibernação tanto para unidades de armazenamento do tipo SATA e do tipo PCIe;
- Sempre que o equipamento for inicializado, será mostrado no monitor de vídeo o nome da HP;
- Possuem os mesmos padrões de cores, sendo o preto ou cinza escuro a cor predominante e com o logotipo da HP impresso;
- Possui acabamento interno composto de superfícies não cortantes;
- O gabinete possui tratamento anticorrosivo;
- O gabinete possui base/superfície antiderrapante;
- Possui gabinete feito em liga metálica e front bezel de ABS
- O equipamento pode funcionar na posição horizontal ou vertical.
- Possui afixado no gabinete do equipamento, o Selo Certificado de Autenticidade (COA – Certificate of Authenticity) do software Windows na versão instalada e com serial de ativação do sistema operacional gravado no BIOS, quando adquirido com o sistema operacional Windows 11 conforme descrito na proposta comercial;
- O fluxo do ar interno segue as orientações do fabricante do microprocessador;
- Possui processador da geração mais recente fabricada pela HP no Brasil para este modelo de desktop de uso corporativo;
- Possui tecnologia implementada que controle o nível de desempenho do processador automaticamente, ajustando dinamicamente a frequência e a voltagem a cada a necessidade requerida pela atividade do momento para que seja otimizada a autonomia de bateria do equipamento;
- Possui suporte a implementação de tecnologia dual-channel para a memória RAM;
- As unidades de armazenamento disponíveis para fabricação do modelo, possuem suporte à tecnologia de segurança SMART e NCQ;
- Todos os conectores das portas de entrada/saída são identificados por cores ou símbolos, de acordo com o padrão PC'99 System Design Guide;
- Possui controladora de áudio onboard, com entrada e saída de áudio estéreo (combo jack), capaz de reproduzir os sons gerados pelo sistema (como músicas e beeps de alerta de diagnósticos), e está conectado diretamente a placa mãe sem uso de adaptadores, com suporte a 16bits;
- O sistema de áudio onboard possui a possibilidade de desativação por software ou automaticamente quando houver conexão com a caixa de som ou fone de ouvido;
- Possui controladora de rede Gigabit Ethernet 10/100/1000 Mbps com reconhecimento automático da velocidade da rede, com capacidade de operar no modo full-duplex, autosense, plug and play, com suporte ao protocolo SNMP, totalmente configurável por software, com suporte a VLAN, com suporte a PXE 2.1 e com função Wake-On-Lan instalada e em funcionamento. Com conector RJ-45 com LEDs de diagnostico;
- Possui interface de comunicação wireless integrada desde que a CONTRATADA incluía este item na proposta comercial. Esta placa wireless tem suporte aos padrões 802.11ax, 802.11ac, 802.11a, 802.11b, 802.11g e 802.11n, com suporte aos protocolos 802.11i (WLAN security, TKIP e AES), WPA, WPA2, WEP 64 e 128, IEEE 802.11 (Wired Equivalent Privacy), IEEE 802.1x. Com certificado de homologação válido da ANATEL, e no Wi-fi Certified Aliance. O ajuste da potência é de acordo com a recepção do sinal, de forma a proporcionar economia de bateria;
- Possui teclado da HP, desde que a CONTRATADA inclua este item na proposta comercial. Teclado HP com com todos os caracteres da língua portuguesa incluindo Ç, com teclado numérico embutido, com teclas Windows Logo (acesso ao menu iniciar), com LEDs indicativos de “caps lock” e “num lock”. A impressão sobre as teclas é do tipo permanente, não apresentando desgaste por abrasão ou uso prolongado. Possui sistema de proteção contra derramamento acidental de

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pequenas quantidades de líquidos. Possui sistema para ajuste de inclinação e cabo USB de no mínimo 1.5m. Não possui teclas dedicadas de funções multimedia, desligar, hibernar ou standby.

- Possui mouse óptico da HP, desde que a CONTRATADA incluía este item na proposta comercial. Mouse HP com conector USB, cabo com comprimento mínimo de 1.8m, com resolução de 1000dpi, com 03 botões (esquerdo, direito e central próprio para rolagem (scrol)), formato ergonômico e de conformação ambidestra;
- Fonte externo com ajuste automático 100~240v / 50-60Hz (bivolt), suficiente para suportar todas as configurações do equipamento conforme as especificações técnicas contidas no catálogo técnico do mesmo, permitindo o funcionamento por no mínimo 10 horas por dia e 5 dias por semana;
- Possui cabo de energia para a fonte de alimentação de acordo com o novo padrão ABNT (NBR 14136), com comprimento total de no minimo 1.5m;
- Todos os componentes do produto são novos (sem uso, reforma ou recondicionamento) e estão em linha de fabricação;
- Pertence a linha corporativa da HP;
- A HP possui programas de Logística Reversa (https://www.hp.com/br-pt/hp-information/sustainable-impact/planet-product-recycling.html);
- São bens constituídos em parte, por material reciclado, atóxico, biodegradável e atendem a diretiva RoHS;
- Todos os itens e seus acessórios são novos, não recondicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, frisagens, furações, fitas adesivas, marcas, falhas de fabricação ou qualquer outro procedimento ou emprego de materiais inadequados que adaptem forçadamente o equipamento ou suas partes que sejam fisicamente ou logicamente incompatíveis;
- As unidades dos equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, utilizando sempre que possível de materiais recicláveis, de forma a garantir a máxima proteção durante o transporte e a armazenagem;
- Cada equipamento possui um número de série único, afixado em local visível em etiqueta de difícil remoção ou impresso a laser, constando a marca, o modelo e o número de série do equipamento e também na embalagem;
- A HP possui pagina na Internet no qual pelo número de série é possível verificar o início e fim do período de garantia do equipamento;
- Os drivers, softwares e sistema operacional fornecido com o equipamento da HP estão disponíveis para download no site da HP, permitindo a instalação e recuperação do sistema operacional ao padrão de fábrica.
- A HP disponibiliza a ferramenta HP Cloud Recovery que permite realizar o download dos Drivers e do Sistema Operacional de forma automatizada para gerar pendrive de reinstalação;
- É disponibilizada documentação técnica necessária à instalação e operação do equipamento em português;
- A HP Disponibiliza “Central de atendimento telefônico” com número de telefone 0800 ou Whatsapp para abertura de chamado, em dias úteis, (segunda-feira a sexta-feira), em horário comercial (das 8h às18h) e “Central de atendimento via sistema web” para abertura de chamado 24x07, (domingo a domingo), a qualquer horário (das 00:00h às 23:59h);
- A HP Mantém os registros dos chamados que foram abertos, mantendo as informações que foram registradas sobre o mesmo;
- A ferramenta Web de abertura de chamados da HP permite que o cliente a visualize e acompanhe os chamados abertos anteriormente;
- Possui garantia padrão de fábrica de 01 ano para reposição de peças, mão de obra, com atendimento "on-site", conforme descrito na proposta comercial emitida pela CONTRATADA;
- Permite a extensão de garantia para 03, 04 ou 05 anos para reposição de peças, mão de obra, para o monitor, com atendimento do tipo "on-site" através de aquisição da CONTRADA de carepack de extensão de garantia, devendo descrever em sua proposta comercial a descrição da extensão da garantia (HP Carepack);
- A assistência técnica “on-site” será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;

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- Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa, salvo quando o defeito for provocado por uso inadequado dos equipamentos;
- Certificado de Garantia é válido em todo o território nacional;
- Abertura do equipamento para limpeza, adição de memória ou SSD pela CONTRATANTE não implicará em perca da garantia desde que não cause mau uso. A garantia da HP não cobrirá o suporte destas peças.

Declaramos ainda que, o produto **9Z0P1AV#TMP** – EliteBook 640 G11:

- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;
- Informações técnicas básicas como modelo do processador, capacidade de memória instalada, capacidade e tipo do dispositivo de armazenamento, versão do sistema operacional, tamanho da tela do notebook e garantia padrão de fábrica estarão descritas na proposta comercial emitida pela CONTRADA;
- Modelo de equipamento ofertado é a mais recente geração disponibilizada pela HP com comercialização no Brasil;
- A HP disponibiliza a ferramenta HP Support Assistant que permite a verificação e instalação das últimas atualizações de todas as ferramentas e drivers disponibilizadas pela HP para o equipamento. Sendo capaz de monitorar o sistema, realizar diagnósticos, emitir alertas e ajudar a reparar erros do sistema, ajudando assim a manter a saúde e segurança do sistema. Permite verificar o status da garantia pela ferramenta;
- Possui BIOS da HP, desenvolvida pela HP, em conformidade com a especificação minima UEFI 2.7 (http://www.uefi.org/) e capturáveis pela aplicação de inventário como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com descrição do modelo, número de série e campo de registro de número de patrimônio com extensão mínima de 15 digitos, todos gravados em memória não volátil e sendo estas capituraveis por aplicações de inventario como por exemplo SCCM, Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com interface gráfica com navegação utilizando mouse ou teclado, disponível em mais de 3 idiomas (por exemplo: português, espanhol, inglês etc.);
- Possui BIOS atualizável com opção de recuperação de falha, a partir de arquivo de recuperação no disco rígido ou USB externa;
- Possui BIOS com suporte à verificação de integridade, através do recurso Hp Sure Start;
- As atualizações da BIOS, quando necessárias, são disponibilizadas no site da HP Inc., com atualização via download na internet diretamente na interface de configuração da BIOS também;
- Possui BIOS implementada em “flash ROM” atualizável diretamente pelo microcomputador, utilizando memória não volátil e reprogramável, Plug and Play, entregue na versão mais atual disponibilizada pela HP. Podendo ser atualizada por software de gerenciamento remoto;
- Possui BIOS com capacidade de habilitar / desabilitar portas USB, webcam, microfone, WiFi;
- Possui BIOS com possibilidade de configuração de senhas de Setup para Power On, Administrador e unidade de armazenamento;
- Possui BIOS com suporte à tecnologia de previsão/contingenciamento de falhas de disco rígido S.M.A.R.T habilitada;
- Possui BIOS com suporte a boot por pendrive ou unidade de armazenamento externo, conectado a uma porta USB 2.0 ou superior;
- Possui BIOS compatível com o padrão mínimo ACPI 6.0. E também compatível com os padrões: DMI, SNMP, WMI, SMBIOS;
- Possui BIOS em conformidade com a normativa NIST 800-147 e NIST 800-193 (HP Sure Start);

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- Possui a ferramenta HP Secure Erase integrada na BIOS, que possibilita apagar de forma definitiva e irrecuperável todos os dados da unidade de armazenamento, permitindo o descarte seguro de seus equipamentos (NIST 800-88);
- Possui BIOS com ferramenta de diagnóstico UEFI de componentes internos de hardware (processador, memória, unidade de armazenamento, áudio, teclado, rede, placa mae, portas USB e vídeo). Acessivel via BIOS ou teclas de atalho (F1...F12). A mensagem de erro é suficiente para abertura de chamado em garantia;
- Possui sistema de monitoramento de temperatura controlada pela BIOS, adequado ao processador, fonte e demais componentes internos ao gabinete;
- Possui recurso para realizar downgrade de BIOS e replicação de configurações de BIOS em escala utilizando um arquivo referencia ou via Powershell;
- Possui placa mãe fabricada e desenvolvida pela HP, exclusiva para o modelo, com o nome da HP identificado na mesma;
- Possui placa mãe com capacidade de desligamento do vídeo e da unidade de armazenamento após tempo determinado pelo usuário e reiniciar por acionamento de teclado ou pela movimentação do mouse e possui função de economia de energia;
- Possui chip TPM integrado, acompanhado de drivers e a ferramenta nativa do Windows (tpm.msc) para utilização do chip e possibilitando a utilização de todos os recursos de segurança e criptografia (A ferramenta tpm.msc é fornecida com os equipamentos adquiridos com o Sistema Operacional Windows 10 / 11 Pro);
- O chipset é do mesmo fabricante do processador, com tecnologia que permite que o sistema retome rapidamente do estado de hibernação tanto para unidades de armazenamento do tipo SATA e do tipo PCIe;
- Sempre que o equipamento for inicializado, será mostrado no monitor de vídeo o nome da HP;
- Possuem os mesmos padrões de cores, sendo a prata ou cinza escuro a cor predominante e com o logotipo da HP impresso;
- Possui acabamento interno composto de superfícies não cortantes;
- O gabinete possui tratamento anticorrosivo;
- O gabinete possui base/superfície antiderrapante;
- Possui gabinete feito em liga metálica de alumínio e dobradiças em liga metálica para maior resistência.
- Possui afixado no gabinete do equipamento, o Selo Certificado de Autenticidade (COA – Certificate of Authenticity) do software Windows na versão instalada e com serial de ativação do sistema operacional gravado no BIOS, quando adquirido com o sistema operacional Windows 11, conforme descrito na proposta comercial;
- O fluxo do ar interno segue as orientações do fabricante do microprocessador;
- Possui processador da geração mais recente fabricada pela HP no Brasil para este modelo de notebook de uso corporativo;
- Possui tecnologia implementada que controle o nível de desempenho do processador automaticamente, ajustando dinamicamente a frequência e a voltagem a cada a necessidade requerida pela atividade do momento para que seja otimizada a autonomia de bateria do equipamento;
- Possui suporte a implementação de tecnologia dual-channel para a memória RAM;
- As unidades de armazenamento disponíveis para fabricação do modelo, possuem suporte à tecnologia de segurança SMART e NCQ;
- Todos os conectores das portas de entrada/saída são identificados por cores ou símbolos, de acordo com o padrão PC'99 System Design Guide;
- Possui controladora de áudio onboard, com entrada e saída de áudio estéreo (combo jack), capaz de reproduzir os sons gerados pelo sistema (como musicas e beeps de alerta de diagnósticos), e está conectado diretamente a placa mãe sem uso de adaptadores, com suporte a 16bits;
- O sistema de áudio onboard possui a possibilidade de desativação por software ou automaticamente quando houver conexão com a caixa de som ou fone de ouvido;
- Possui controladora de vídeo integrada, com suporte a até 03 monitores simultaneamente (terceiro monitor através da porta USB tipo C), de forma estendida ou espelhada, com capacidade de alocar

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no mínimo 1.5GB de memória de vídeo, compartilhada de forma dinâmica com a memória RAM. Possui suporte para DirectX 12 e Open GL 4.5 e compatibilidade do driver com o padrão WDDM (Windows Display Driver Model);

- Possui controladora de rede Gigabit Ethernet 10/100/1000 Mbps com reconhecimento automático da velocidade da rede, com capacidade de operar no modo full-duplex, autosense, plug and play, com suporte ao protocolo SNMP, totalmente configurável por software, com suporte a VLAN, com suporte a PXE 2.1 e com função Wake-On-Lan instalada e em funcionamento. Com conector RJ-45 com LEDs de diagnostico;
- Possui interface de comunicação wireless integrada, com suporte aos padrões 802.11ax, 802.11ac, 802.11a, 802.11b, 802.11g e 802.11n, com suporte aos protocolos 802.11i (WLAN security, TKIP e AES), WPA, WPA2, WEP 64 e 128, IEEE 802.11 (Wired Equivalent Privacy), IEEE 802.1x. Com certificado de homologação válido da ANATEL, e no Wi-fi Certified Aliance. O ajuste da potência é de acordo com a recepção do sinal, de forma a proporcionar economia de bateria;
- Possui teclado da HP integrado, com todos os caracteres da língua portuguesa incluindo ç, com 83 teclas, com teclado numérico embutido na fileira superior, com teclas Windows Logo (acesso ao menu iniciar), com LEDs indicativos de “caps lock”. A impressão sobre as teclas é do tipo permanente, não apresentando desgaste por abrasão ou uso prolongado e com sistema de proteção contra derramamento acidental de líquidos;
- Possui dispositivo apontador integrado, do tipo “touchpad”, integrado no gabinete, com dois botões integrados e uma área para a função “scroll” (botão de rolagem), com suporte a múltiplos gestos tais como pinça e zoom;
- Fonte externo com ajuste automático 100~240v (bivolt), suficiente para suportar todas as configurações do equipamento conforme as especificações técnicas contidas no catálogo técnico do mesmo, permitindo o funcionamento por no mínimo 10 horas por dia e 5 dias por semana;
- Possui cabo de energia para a fonte de alimentação de acordo com o novo padrão ABNT (NBR 14136), com comprimento minimo de 1,5m (total fonte mais cabo de energia);
- Todos os componentes do produto são novos (sem uso, reforma ou recondicionamento) e estão em linha de fabricação;
- Pertence a linha corporativa da HP;
- A HP possui programas de Logística Reversa (https://www.hp.com/br-pt/hp-information/sustainable-impact/planet-product-recycling.html);
- São bens constituídos em parte, por material reciclado, atóxico, biodegradável e atendem a diretiva RoHS;
- Todos os itens e seus acessórios são novos, não recondicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, frisagens, furações, fitas adesivas, marcas, falhas de fabricação ou qualquer outro procedimento ou emprego de materiais inadequados que adaptem forçadamente o equipamento ou suas partes que sejam fisicamente ou logicamente incompatíveis;
- As unidades dos equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, utilizando sempre que possível de materiais recicláveis, de forma a garantir a máxima proteção durante o transporte e a armazenagem;
- Cada equipamento possui um número de série único, afixado em local visível em etiqueta de difícil remoção ou impresso a laser, constando a marca, o modelo e o número de série do equipamento e também na embalagem;
- A HP possui página na Internet no qual pelo número de série é possível verificar o início e fim do período de garantia do equipamento;
- Os drivers, softwares e sistema operacional fornecido com o equipamento da HP estão disponíveis para download no site da HP, permitindo a instalação e recuperação do sistema operacional ao padrão de fábrica.
- A HP disponibiliza a ferramenta HP Cloud Recovery que permite realizar o download dos Drivers e do Sistema Operacional de forma automatizada para gerar pendrive de reinstalaçao;
- É disponibilizada documentação técnica necessária à instalação e operação do equipamento em português;
- A HP Disponibiliza “Central de atendimento telefônico” com número de telefone 0800 ou Whatsapp para abertura de chamado, em dias úteis, (segunda-feira a sexta-feira), em horário

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comercial (das 8h às18h) e “Central de atendimento via sistema web” para abertura de chamado 24x07, (domingo a domingo), a qualquer horário (das 00:00h às 23:59h);

- A HP Mantém os registros dos chamados que foram abertos, mantendo as informações que foram registradas sobre o mesmo;
- A ferramenta Web de abertura de chamados da HP permite que o cliente a visualize e acompanhe os chamados abertos anteriormente;
- Possui garantia padrão de fábrica de 01 ano para reposição de peças, mão de obra, com atendimento "on-site", conforme descrito na proposta comercial emitida pela CONTRATADA;
- Permite a extensão de garantia para 03, 04 ou 05 anos para reposição de peças, mão de obra, com atendimento do tipo "on-site" através de aquisição da CONTRADA de carepack de extensão de garantia, devendo descrever em sua proposta comercial a descrição da extensão da garantia (HP Carepack);
- A assistência técnica “on-site” será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;
- Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa, salvo quando o defeito for provocado por uso inadequado dos equipamentos;
- Certificado de Garantia é válido em todo o território nacional;
- Abertura do equipamento para limpeza, adição de memória ou SSD pela CONTRATANTE não implicará em perca da garantia desde que não cause mau uso. A garantia da HP não cobrirá o suporte destas peças.

Declaramos ainda que, o produto **9A816AV#TMP** – ZBook Power 16 inch G11:

- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;
- Informações técnicas básicas como modelo do processador, capacidade de memória instalada, capacidade e tipo do dispositivo de armazenamento, versão do sistema operacional, tamanho e especificação da tela do notebook e garantia padrão de fábrica estarão descritas na proposta comercial emitida pela CONTRADA;
- Modelo de equipamento ofertado é a mais recente geração disponibilizada pela HP com comercialização no Brasil;
- A HP disponibiliza a ferramenta HP Support Assistant que permite a verificação e instalação das últimas atualizações de todas as ferramentas e drivers disponibilizadas pela HP para o equipamento. Sendo capaz de monitorar o sistema, realizar diagnósticos, emitir alertas e ajudar a reparar erros do sistema, ajudando assim a manter a saúde e segurança do sistema. Permite verificar o status da garantia pela ferramenta;
- Possui BIOS da HP, desenvolvida pela HP, em conformidade com a especificação mínima UEFI 2.7 (http://www.uefi.org/) e capturáveis pela aplicação de inventário como por exemplo SCCM (System Center Configuration Manager), Landesk, Microsoft End Point Manager, etc;
- Possui BIOS com descrição do modelo, número de série e campo de registro de número de patrimônio com extensão mínima de 15 dígitos, todos gravados em memória não volátil e sendo estas capturáveis por aplicações de inventario como por exemplo Microsoft End Point manager, SCCM, Landesk, etc;
- Possui BIOS com interface gráfica com navegação utilizando mouse ou teclado, disponível em mais de 3 idiomas (por exemplo: português, espanhol, inglês etc.);
- Possui BIOS atualizável com opção de recuperação de falha, a partir de arquivo de recuperação no disco rígido ou USB externa;
- Possui BIOS com suporte à verificação de integridade, através do recurso HP Sure Start;
- As atualizações da BIOS, quando necessárias, são disponibilizadas no site da HP Inc., com atualização via download na internet diretamente na interface de configuração da BIOS também;

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- Possui BIOS implementada em “flash ROM” atualizável diretamente pelo microcomputador, utilizando memória não volátil e reprogramável, Plug and Play, entregue na versão mais atual disponibilizada pela HP. Podendo ser atualizada por software de gerenciamento remoto;
- Possui BIOS com capacidade de habilitar / desabilitar portas USB, webcam, microfone, WiFi;
- Possui BIOS com possibilidade de configuração de senhas para Power On, Administrador e unidade de armazenamento;
- Possui BIOS com suporte à tecnologia de previsão/contingenciamento de falhas de disco rígido S.M.A.R.T habilitada;
- Possui BIOS com suporte a boot por pendrive ou unidade de armazenamento externo, conectado a uma porta USB 2.0 ou superior;
- Possui BIOS compatível com o padrão ACPI 6.0. E também compatível com os padrões: DMI, SNMP, SMBIOS;
- Possui BIOS em conformidade com a normativa NIST 800-147 e NIST 800-193 (HP Sure Start);
- Possui a ferramenta HP Secure Erase integrada na BIOS, que possibilita apagar de forma definitiva e irrecuperável todos os dados da unidade de armazenamento, permitindo o descarte seguro de seus equipamentos (NIST 800-88);
- Possui BIOS com ferramenta de diagnóstico UEFI de componentes internos de hardware (processador, memória, unidade de armazenamento, áudio, teclado, rede, placa mãe, portas USB e vídeo). Acessível via BIOS ou teclas de atalho (F1...F12). A mensagem de erro é suficiente para abertura de chamado em garantia;
- Possui sistema de monitoramento de temperatura controlada pela BIOS, adequado ao processador, fonte e demais componentes internos ao gabinete;
- Possui recurso para realizar downgrade de BIOS e replicação de configurações de BIOS em escala utilizando um arquivo referência ou via Powershell;
- Possui placa mãe fabricada e desenvolvida pela HP, exclusiva para o modelo, com o nome da HP identificado na mesma;
- Possui placa mãe com capacidade de desligamento do vídeo e da unidade de armazenamento após tempo determinado pelo usuário e reiniciar por acionamento de teclado ou pela movimentação do mouse e possui função de economia de energia;
- Possui chip TPM integrado, acompanhado de drivers e a ferramenta nativa do Windows (tpm.msc) para utilização do chip e possibilitando a utilização de todos os recursos de segurança e criptografia (A ferramenta tpm.msc é fornecida com os equipamentos adquiridos com o Sistema Operacional Windows 10 / 11 Pro);
- O chipset é do mesmo fabricante do processador, com tecnologia que permite que o sistema retome rapidamente do estado de hibernação tanto para unidades de armazenamento do tipo SATA e do tipo PCIe;
- Sempre que o equipamento for inicializado, será mostrado no monitor de vídeo o nome da HP;
- Possuem os mesmos padrões de cores, sendo o prata ou cinza escuro a cor predominante e com o logotipo da HP impresso;
- Possui acabamento interno composto de superfícies não cortantes;
- O gabinete possui tratamento anticorrosivo;
- O gabinete possui base/superfície antiderrapante;
- Possui gabinete feito em liga metálica e dobradiças em liga metálica para maior resistência.
- Possui afixado no gabinete do equipamento, o Selo Certificado de Autenticidade (COA – Certificate of Authenticity) do software Windows na versão instalada e com serial de ativação do sistema operacional gravado no BIOS, quando adquirido com o sistema operacional Windows 11, conforme descrito na proposta comercial;
- O fluxo do ar interno segue as orientações do fabricante do microprocessador;
- Possui processador da geração mais recente fabricada pela HP no Brasil para este modelo de notebook de uso corporativo;
- Possui tecnologia implementada que controle o nível de desempenho do processador automaticamente, ajustando dinamicamente a frequência e a voltagem a cada a necessidade requerida pela atividade do momento para que seja otimizada a autonomia de bateria do equipamento;

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- Possui suporte a implementação de tecnologia dual-channel para a memória RAM;
- As unidades de armazenamento disponíveis para fabricação do modelo, possuem suporte à tecnologia de segurança SMART e NCQ;
- Todos os conectores das portas de entrada/saída são identificados por cores ou símbolos, de acordo com o padrão PC'99 System Design Guide;
- Possui controladora de áudio onboard, com entrada e saída de áudio estéreo (combo jack), capaz de reproduzir os sons gerados pelo sistema (como músicas e beeps de alerta de diagnósticos), e está conectado diretamente a placa mãe sem uso de adaptadores, com suporte a 16bits;
- O sistema de áudio onboard possui a possibilidade de desativação por software ou automaticamente quando houver conexão com a caixa de som ou fone de ouvido;
- Possui controladora de vídeo integrada ou dedicada conforme descrito na proposta comercial da CONTRATADA, com suporte a até 03 monitores simultaneamente (terceiro monitor através da porta USB tipo C), de forma estendida ou espelhada. Possui suporte para DirectX 12 e Open GL 4.5 e compatibilidade do driver com o padrão WDDM (Windows Display Driver Model);
- Possui interface de comunicação wireless integrada, com suporte aos padrões 802.11ax, 802.11ac, 802.11a, 802.11b, 802.11g e 802.11n, com suporte aos protocolos 802.11i (WLAN security, TKIP e AES), WPA, WPA2, WEP 64 e 128, IEEE 802.11 (Wired Equivalent Privacy), IEEE 802.1x. Com certificado de homologação válido da ANATEL, e no Wi-fi Certified Aliance. O ajuste da potência é de acordo com a recepção do sinal, de forma a proporcionar economia de bateria;
- Possui teclado da HP integrado, com todos os caracteres da língua portuguesa incluindo ç, com 83 teclas, com teclado numérico embutido na fileira superior, com teclas Windows Logo (acesso ao menu iniciar) e Aplicação (acesso ao menu de atalhos, equivalente ao botão direito do mouse), com LEDs indicativos de “caps lock”. A impressão sobre as teclas é do tipo permanente, não apresentando desgaste por abrasão ou uso prolongado e com sistema de proteção contra derramamento acidental de líquidos;
- Possui dispositivo apontador integrado, do tipo “touchpad”, integrado no gabinete, com dois botões integrados e uma área para a função “scroll” (botão de rolagem), com suporte a múltiplos gestos tais como pinça e zoom;
- Fonte externo com ajuste automático 100~240v / 50-60Hz (bivolt), suficiente para suportar todas as configurações do equipamento conforme as especificações técnicas contidas no catálogo técnico do mesmo, permitindo o funcionamento por no mínimo 10 horas por dia e 5 dias por semana;
- Possui cabo de energia para a fonte de alimentação de acordo com o novo padrão ABNT (NBR 14136), com comprimento minimo de 1,5m (total fonte mais cabo de energia);
- Todos os componentes do produto são novos (sem uso, reforma ou recondicionamento) e estão em linha de fabricação;
- Pertence a linha corporativa da HP;
- A HP possui programas de Logística Reversa (https://www.hp.com/br-pt/hp-information/sustainable-impact/planet-product-recycling.html);
- São bens constituídos em parte, por material reciclado, atóxico, biodegradável e atendem a diretiva RoHS;
- Todos os itens e seus acessórios são novos, não recondicionados, de primeiro uso, em pleno estado de funcionamento, livres de arranhões, amassados, frisagens, furações, fitas adesivas, marcas, falhas de fabricação ou qualquer outro procedimento ou emprego de materiais inadequados que adaptem forçadamente o equipamento ou suas partes que sejam fisicamente ou logicamente incompatíveis;
- As unidades dos equipamentos serão entregues devidamente acondicionadas em embalagens individuais adequadas, utilizando sempre que possível de materiais recicláveis, de forma a garantir a máxima proteção durante o transporte e a armazenagem;
- Cada equipamento possui um número de série único, afixado em local visível em etiqueta de difícil remoção ou impresso a laser, constando a marca, o modelo e o número de série do equipamento e também na embalagem;
- A HP possui página na Internet no qual pelo número de série é possível verificar o início e fim do período de garantia do equipamento;

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- Os drivers, softwares e sistema operacional fornecido com o equipamento da HP estão disponíveis para download no site da HP, permitindo a instalação e recuperação do sistema operacional ao padrão de fábrica.
- A HP disponibiliza a ferramenta HP Cloud Recovery que permite realizar o download dos Drivers e do Sistema Operacional de forma automatizada para gerar pendrive de reinstalação;
- É disponibilizada documentação técnica necessária à instalação e operação do equipamento em português;
- A HP Disponibiliza “Central de atendimento telefônico” com número de telefone 0800 ou Whatsapp para abertura de chamado, em dias úteis, (segunda-feira a sexta-feira), em horário comercial (das 8h às18h) e “Central de atendimento via sistema web” para abertura de chamado 24x07, (domingo a domingo), a qualquer horário (das 00:00h às 23:59h);
- A HP Mantém os registros dos chamados que foram abertos, mantendo as informações que foram registradas sobre o mesmo;
- A ferramenta Web de abertura de chamados da HP permite que o cliente a visualize e acompanhe os chamados abertos anteriormente;
- Possui garantia padrão de fábrica de 01 ano para reposição de peças, mão de obra, com atendimento "on-site", conforme descrito na proposta comercial emitida pela CONTRATADA;
- Permite a extensão de garantia para 03, 04 ou 05 anos para reposição de peças, mão de obra, com atendimento do tipo "on-site" através de aquisição da CONTRADA de carepack de extensão de garantia, devendo descrever em sua proposta comercial a descrição da extensão da garantia (HP Carepack);
- A assistência técnica “on-site” será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;
- Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa, salvo quando o defeito for provocado por uso inadequado dos equipamentos;
- Certificado de Garantia é válido em todo o território nacional;
- Abertura do equipamento para limpeza, adição de memória ou SSD pela CONTRATANTE não implicará em perca da garantia desde que não cause mau uso. A garantia da HP não cobrirá o suporte destas peças.

Durante o período de garantia do Produto HP, a Fabricante HP responsabiliza-se pela garantia no prazo e condições padrão HP, conforme especificado no termo de garantia que acompanha o Produto HP e no manual técnico do Produto HP.

Serviços adicionais ao especificado na garantia padrão da Fabricante HP poderá ser adquiridos pelo Parceiro HP, com prazos e condições customizados.

B20A5LS#AK4 – HP Elite Mini 800 G9 – Carepack adicional – **U7925E** - HP 5-year Next Business Day Onsite Desktop Hardware Support.

67V68AV#TMP – Z2 Tower G9 – Carepack adicional – **UA935E** - HP 5-year Next Business Day Response Onsite Workstation Hardware Support.

9Z0P1AV#TMP – EliteBook 640 G11 – Carepack adicional – **UA6A3E** - HP 5-year Next Business Day Response Onsite Notebook Hardware Support.

9A816AV#TMP – ZBook Power 16-inch G11 – Carepack adicional – **U85RBE** - HP 5y Onsite Mobile Workstation Support.

Declaramos que os equipamentos fabricados pela HP são novos, que não foram submetidos a uso, nem recondicionamento, ressalvados os testes de fábrica.

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Os Produtos da marca HP são de fabricação própria ou homologados por regime de O&M e estão em linha de produção atual.

Declaramos, ainda, que a HP possui site na internet - www.hp.com.br – onde pode ser efetuado download de drivers para os Produtos HP e número de telefone para Grande São Paulo São Paulo (11) 3878-8338 / Demais Localidades: 0800-709-7751 / Whats app (11) +55 11 3230 4672 para informações e aberturas de chamados técnicos.

A Rede de Serviços Autorizados HP é amplamente distribuída em todo o território nacional, e conta com parceiros altamente qualificados relacionados abaixo. Trata-se de rede de parceiros com técnicos devidamente treinados e certificados pela HP, garantindo assim a excelência e a qualidade dos serviços prestados:

Unisys:	**Unisys:**	**Procedata:**
Acre	Paraíba	Minas Gerais
Alagoas	Paraná	
Amapá	Pernambuco	**Simpress:**
Amazonas	Piauí	Cidade: Vitoria
Bahia	Rio Grande do Norte	Cidade: Brasilia
Ceará	Rio Grande do Sul	Cidade: Recife
Espírito Santo	Rondônia	Cidade: Fortaleza
Goiás	Roraima	
Maranhão	Santa Catarina	**Técnicos HP:**
Mato Grosso	Sergipe	São Paulo (Capital)
Mato Grosso do Sul	Tocantins	Rio de Janeiro
Pará	Distrito Federal	Bahia (Salvador)
Paraíba	São Paulo (Interior)	Paraná (Curitiba)

Esta declaração é válida por 30 (trinta) dias corridos, a contar da data de sua emissão.

Atenciosamente,

Jhenifer Cristina Araujo de Jesus
Procuradora
HP Indústria e Comércio de Equipamentos Eletrônicos Ltda.

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

OFÍCIO Nº 294.2025.CPL.1683333.2025.001317

Manaus, *na data da assinatura.*

Ao Senhor

CARLOS ALEXANDRE DOS SANTOS NOGUEIRA

Chefe do Setor de Infraestrutura e Telecomunicação

Assunto: Análise de Propostas de Preços referente ao **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ SRP**.

Senhor Chefe,

Cumprimentando-o com o presente, informamos que tramita nesta Comissão Permanente de Licitação o Processo SEI n.º 2025.001317, referente ao **PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP,** cujo objeto é o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses*.

Isto posto, encaminho os autos em epígrafe a esse **Setor de Infraestrutura e Telecomunicação - SIET,** para **análise e manifestação** quanto aos documentos apresentados em sede de diligência pela licitante abaixo elencada:

1. **TORINO INFORMÁTICA LTDA.** , CNPJ (MF) n.º 03.619.767/0005-15, para o **Item 3** (doc's. 1683323, 1683324 e 1683331).

Atenciosamente,

Maurício Araújo Medeiros

Pregoeiro - PORTARIA 606/2025/SUBADM

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 28/07/2025, às 12:02, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1683333** e o código CRC **22785718**.

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

PARECER Nº 92.2025.DTIC.1683372.2025.001317

PROCESSO DE COMPRA: 2025.001317 Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ SRP Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317
OBJETO: Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.

1. **Relatório**

Trata-se de pedido de compatibilização da proposta da empresa **TORINO INFORMÁTICA LTDA.** , com documentos enviados em respostas às diligênciass requeridas no Parecer Nº 26.2025.SIET.1679784.2025.001317 ao avaliar a documentação para o **ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"** , documentos 1683323, 1683324 e 1683331, recebido no dia 28/7/2025.

2. **Da Análise**

2.1 Produto ofertado

Item	Descrição	Quantidade	Produto Ofertado
1	**ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"** **Marca/Modelo de Referência:** Lenovo ThinkPad T14 GEN 5, Dell Latitude 5450.	300	**ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"** NOTEBOOK HP 640 G11 PROC INTEL ULTRA 5 135U - VPRO MEMÓRIA 16GB(2X8) DDR5 5600 HD SSD 256GB NVME WEBCAM 5MP WIFI6 + BT AX211 TELA 14 FHD BATERIA 56WHR WINDOWS 11 PROFESSIONAL SOFTWARE ABSOLUTE GARANTIA 5 ANOS ACOMPANHA: MOUSE USB 1000 DPI HP E MOCHILA PARA NOTEBOOK.

2.2 Análise comparativa

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. PLACA PRINCIPAL (PLACA MÃE)		
1. A placa mãe deve ser construída pelo próprio fabricante do microcomputador ou produzida sob a especificação do mesmo, não sendo aceito placas de livre comercialização no mercado, nem em regime de OEM;	□	
2. Deve possuir, no mínimo, 1 (um) slot para memória RAM, "do tipo DDR-5 SODIMM", permitindo a instalação de até 40 (quarenta) Gigabytes, 8 (oito) soldadas diretamente na placa e até 32 (trinta e dois) instaladas no slot. Admite-se 2 slots com 1 módulo de memória cada, como configuração superior, em substituição aos módulos soldados na placa principal;	□	
3. Deve suportar tecnologia Dual Channel de utilização de memória RAM;	□	
4. Deve possuir 1 (um) Socket M.2 para SSD SATA ou NVMe;	□	
5. Deve possuir 1 (um) Socket M.2 Para Cartões Wi-Fi/Bluetooth;	□	
6. Deve possuir recursos DASH 1.0 (Desktop and mobile Architecture for System Hardware), ou tecnologia minimamente equivalente;	□	
7. Deve ser compatível com Energy Star 7.0/7.1, ou tecnologias superiores;	□	

DESCRIÇÃO	PARECER	OBSERVAÇÕES
8. Deve possuir capacidade de desligamento do vídeo e do disco rígido após tempo determinado pelo usuário, religamento por acionamento de teclado ou mouse, bem como função de economia de energia para monitor, placa mãe e unidades de armazenamento internas;		
9. Deve possuir chip TPM (Trusted Platform Module), versão 2.0, ou superior, soldado à placa principal, e destinado ao armazenamento de senhas, certificados digitais e chaves criptográficas em conformidade com as especificações do Trusted Computing Group;		
10. Deve possuir suporte a virtualização por hardware;		
11. Deve possuir suporte a implementação de extensões de virtualização de I/O por hardware;		
12. Deve possuir suporte a aceleração de segurança AES no hardware;		
13. Deve possuir suporte à tecnologia de acesso remoto out-of-band embutida no hardware;		
14. Deve possuir controle da velocidade de rotação do cooler do processador de forma automática, de acordo com a variação de temperatura da CPU;		
15. Deve suportar boot por pendrive ou disco conectado a uma porta USB 3.1 ou 3.2;		
16. Deve suportar a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/https boot.		
2. BIOS		
1. O BIOS deve ser desenvolvido pelo mesmo fabricante do equipamento ou customizado por ele;		
2. O fabricante do equipamento, deverá ser totalmente responsável pelo BIOS fornecido juntamente com a placa mãe e pela atualização do mesmo, devendo promover as alterações que se façam necessárias e corrigir problemas ou danos causados ao equipamento em razão desse BIOS ou de procedimentos de atualização deste, (que poderão ser acompanhados pela empresa caso haja necessidade), durante o período de garantia do equipamento;		
3. BIOS em português ou inglês, desenvolvido em conformidade com a especificação UEFI 2.5 ou superior (http://www.uefi.org) e capturáveis pela aplicação de inventário SCCM (System Center Configuration Manager);		
4. O fabricante deverá comprovar a compatibilidade com o padrão UEFI através do site http:// www.uefi.org/members, na categoria membros;		
5. Deve ser do tipo flash EPROM, atualizável por software, compatível com o padrão plug-and-play;		
6. Deve ser lançado a partir de 2016 e entregue na versão mais atual disponibilizada pelo fabricante;		
7. Deve ter suporte a ACPI, ou tecnologia superior;		
8. Deve ser desenvolvido de acordo com o padrão de segurança NIST 800-147 ou ISO/IEC 19678:2015, para garantir a integridade do BIOS;		
9. Deve possuir recursos de controle de permissão através de senhas, sendo uma para inicializar o computador e outra para acesso e alterações das configurações do BIOS;		
10. Deve possuir software embarcado no BIOS com funções de diagnóstico de problemas, e gerenciamento com as seguintes características: 1. Permitir o teste do equipamento, com independência do sistema operacional instalado, o software de diagnóstico deve ser capaz de ser executado (inicializado) a partir da UEFI (Unified /Extensible Firmware Interface) ou do Firmware do equipamento através do acionamento de tecla função (F1...F12); 2. O software de diagnóstico deverá ser capaz de informar, através de tela gráfica: O fabricante e modelo do equipamento, processador, memória RAM, firmware, e capacidade do disco rígido;		
11. Deve possuir ferramenta que possibilite realizar a formatação definitiva dos dispositivos de armazenamento conectados ao equipamento, desenvolvida em acordo com o padrão de segurança NIST 800-88 ou ISO/IEC 27040:2015. Caso esta ferramenta não seja nativa do BIOS, deverá ser oficialmente homologada pelo fabricante do equipamento;		
12. Deve possuir opção para exportar/importar configurações. No caso de ferramenta externa fornecida para atender esse item, a mesma deve ser disponibilizada no web site de suporte do fabricante, em conjunto com outras ferramentas relacionadas e homologadas para o modelo do equipamento;		
13. Deve oferecer a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela **CONTRATANTE**;		
14. Deve possuir campo não editável com o número de série do equipamento gravado em memória não volátil e campo editável que permita inserir identificação customizada (identidade patrimonial com pelo menos 10 caracteres). Serão aceitos BIOS com reprogramação via software desde que estes estejam devidamente licenciados para o equipamento e disponibilizados para download no web site de suporte do fabricante;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
15. Deverá permitir o gerenciamento remoto do microcomputador mesmo desligado, desde que energizado pela rede elétrica e conectado localmente à rede de dados, permitindo ligar e desligar o microcomputador remotamente, com controle de acesso, e com possibilidade de definir horários programados; 1. Deve permitir acesso remoto através da rede ao POST (procedimento de inicialização) e BIOS para leitura e gravação, mesmo com o equipamento desligado; 2. Deverá permitir acesso remoto ao sistema operacional e processo de inicialização do microcomputador através de interface gráfica, com controle remoto do mouse e teclado (KVM remoto), independente do suporte de aplicações locais ou estado do sistema operacional; 3. Possuir a capacidade de inventário remoto de Hardware mesmo com o equipamento desligado.		
3. PROCESSADOR		
1. Deverá possuir, 2 (dois) núcleos, no mínimo, e 12 (doze) threads de processamento com frequência de operação interna básica de, no mínimo, 1.6 GHz;		
2. Em caso de processadores com arquitetura de computação heterogênea (big.LITTLE), só serão contabilizados os cores voltados para performance, na contagem mínima de núcleos e ciclos de clock base (MHz);		
3. Memória cache total de, no mínimo, 12MB;		
4. O processador ofertado deverá ser Intel Core Ultra 5, "de 1ª geração", ou AMD Ryzen 5 PRO, "serie 8000", admitindo-se famílias ou gerações mais novas;		
5. O processador deverá ser da última geração disponível utilizada pelo fabricante do equipamento, **com desempenho mínimo de 17.000 (dezessete mil) pontos**, considerando o uso pleno de todos os núcleos e sem a aplicação de configurações específicas para aumento ou modificação de desempenho, como "overclock", "undervoltage", "overvoltage" ou quaisquer outras que não estejam em conformidade com os padrões definidos pelo fabricante; 1. O desempenho será comprovado por intermédio de resultados de BenchMark, disponíveis em: http://www.cpubenchmark.net/cpu_list.php. 2. Será admitida uma margem de tolerância de 2% (dois por cento) do desempenho mínimo exigido.		
6. Deve possuir tecnologia de controle dinâmico de frequência do processador para núcleos individuais e ou múltiplos núcleos, podendo atingir até 4.4 GHz, no mínimo;		
7. Deve possuir controlador com suporte à memória RAM do tipo DDR5-5600 MT/s, ou superior;		
8. Deverá possuir tecnologia de fabricação de 7 nm (sete nanômetros) ou inferior;		
9. TDP(Thermal Design Power) mínimo de 12W, e máximo de 58W, declarado pelo fabricante;		
10. Deve possuir instruções do padrão AVX 2.0, ou superior;		
11. Deve possuir instruções do padrão SSE4.1/4.2, ou superior;		
12. Deve possuir instruções que implementem extensões de virtualização de hardware;		
13. Deve possuir instruções AES-NI embutidas;		
14. O proponente deverá declarar em sua proposta comercial o modelo do processador ofertado.		
4. MEMÓRIA RAM		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. Deverá possuir, no mínimo, 16 (dezesseis) Gb de memória RAM instalados, com capacidade de expansão mínima de 40 (quarenta) Gb;	□	
2. Deverá ser do tipo DDR-5/LPDDR-5 SODIMM ou superior e possuir no mínimo, 5600 MT/s de velocidade de comunicação com o barramento principal;	□	
3. A implementação do total de memória RAM deve utilizar 1 (um) módulo, de 8 (oito) GB, e mais 8 (oito) GB soldada diretamente à placa principal, utilizando tecnologia dual channel; 1. Admite-se que ambos os módulos sejam do tipo SODIMM, e sejam removíveis como configuração superior a mencionada acima;	□	
4. O(s) módulo(s) removível(eis) deve(m) ser instalado(s) durante o processo de manufatura do computador, e homologado(s) como parte do equipamento, inclusive estando coberto(s) pela garantia e suporte como descrito no Termo de Referência.	□	
5. UNIDADE DE ARMAZENAMENTO		
1. Deve possuir, no mínimo, 1 (uma) unidade padrão tipo Solid State Drive (SSD) interna instalada do tipo M.2, na capacidade mínima de 256 GB e velocidade mínima de gravação de 1.200MB/s;	□	Em atenção à diligência apresentada no Parecer Nº 26.2025.SIET.1679784.2025.001317, a licitante declarou oferta o "**HD SSD 256GB NVME – DISCO PM9B1**". No caderno de especificações "**SAMSUNG SSD PM9B1**", o disco de 256Gb atende às exigências do subitem 5.1.
2. Deve utilizar interface tipo M.2 PCIe 4.0, com o protocolo NVMe, ou superior;	□	
3. Deve ser instalada durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência.	⚠	Não foi possível constatar na declaração do fabricante ou no caderno de especificações que o disco **Samsung HD SSD 256GB NVME – DISCO PM9B1** faz parte do processo de manufatura do computador e que seja homologado como parte do equipamento. **Providências:** - Licitante deverá declarar o cumprimento deste item em sua proposta ou então apresentar declaração complementar do fabricante explicitando o cumprimento deste item.
6. CONECTIVIDADE		
1. Deverá possuir no mínimo 4 (quatro) portas USB; 1. Do total de portas, no mínimo 2 (duas) devem ser do tipo USB 3.2 tipo A; 2. No mínimo 1 (uma) deve ser do tipo USB 3.2 Tipo C ou Thunderbolt;	□	
2. Possuir, no mínimo, 1 (uma) porta de vídeo adicional, suportando a utilização de 1 (um) monitor auxiliar simultânea e independentemente da tela integrada;	□	
3. O tipo da porta auxiliar de vídeo supracitada deve ser HDMI 2.0 ou DisplayPort 1.2. Em caso de versões miniaturizadas destas, adaptadores revertendo para elas devem ser fornecidos sem custo adicional.	□	
7. INTERFACES DE REDE		
1. Deve possuir, no mínimo, 1 (uma) interface de rede RJ45 compatível com os padrões 10, 100 e 1000 Mbps, autosense, full-duplex e plug-and-play, configurável totalmente por software e com função Wake On Lan instalada e em funcionamento;	□	

DESCRIÇÃO	PARECER	OBSERVAÇÕES
2. A controladora ethernet, deverá ser do tipo "onboard", e suportar recurso WOL (Wake On LAN);		
3. Deve possuir, no mínimo, 1 (uma) interface de rede sem fios no padrão Wi-Fi 6 (802.11 B/G/N/AX), com velocidade de até 1.73Gbps, Tecnologia MU-MIMO, banda dupla em 2.4Ghz e 5Ghz, e suporte a Bluetooth 5.3 ou superior;		
4. As controladoras Wi-Fi e Bluetooth, deverão estar em um único cartão M.2, conectado em slot específico na placa mãe, que deve ser instalado durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência;		
5. A interface Wireless ofertada deve possuir, na data da entrega da proposta, homologação junto à **ANATEL** com certificado disponível publicamente no endereço eletrônico desta agência, conforme a Resolução n.º 242 de 30 de novembro de 2000.		
8. CONTROLADORA DE VÍDEO		
1. Deve possuir controlador 3D/2D com suporte a DirectX 12, ou superior;		
2. Deve suportar Pixel Shader 3.0, ou superior;		
3. Deve suportar OpenGL 4.5, ou superior;		
4. Deve suportar HDCP ou HDR;		
5. Deve suportar a resolução mínima de 1920 X 1080 @ 60 Hz;		
6. Deve possuir tecnologia de controle dinâmico de frequência, podendo atingir, no mínimo, 1.35GHz;		
7. Deve suportar, no mínimo, o uso de 3 (três) monitores simultânea e independentemente.		
9. CONTROLADORA DE SOM E MULTIMÍDIA		
1. O equipamento deve possuir uma controladora de som integrada, do tipo "onboard";		
2. Deve possuir, no mínimo, uma interface de som com 1 (um) conector combinado para fone de ouvido e microfone, de 3,5 mm;		
3. Deve possuir, no mínimo, 2 alto-falantes internos, com 2 Watt RMS de potência cada, compatíveis com a controladora de som;		
4. Deve incorporar microfone(s), com cancelamento de ruído, voltados para captar o som do usuário em frente ao computador.		
10. TECLADO		
1. Deve ser integrado e retroiluminado no idioma padrão, português (Brasil), ABNT-II;		Licitante respondeu à diligência declarando: *"Teclado: Keyboard HP Standard Keyboard, spill-resistant,backlit, Durakey keyboard. Notebook nacional com teclado (Brasil) ABNT-II e retroiluminado."*
2. Deve possuir teclas multimídia, com no mínimo, aumentar e diminuir volume, além do mute; 1. Admite-se a utilização de teclas de função (F1...F12), para tais ações.		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
11. DISPOSITIVOS APONTADORES		
1. Deve possuir um touchpad integrado, com dois botões, e área útil de 4 (quatro) pol², no mínimo; 1. Admite-se que os botões sejam integrados, como cliques diretos na parte inferior do touchpad;	□	
2. Deve suportar gestos de rolagem, ou possuir teclas, área ou dispositivo dedicado;	□	
3. Deve acompanhar um mouse adicional, da mesma cor e do mesmo fabricante do equipamento ofertado; 1. Deve ser óptico, com conexão USB, com 3 (três) botões e sistema de rolagem de página, com formato ergonômico e com design ambidestro, devendo possuir resolução mínima por hardware de 800 dpi.	□	
12. TELA INTEGRADA		
1. Deve ser de tecnologia IPS (In-Plane Switching) ou VA (Vertical Alignment);	□	
2. Tamanho de 14 polegadas widescreen, no mínimo;	□	
3. Deve suportar, no mínimo, 16 milhões de cores;	□	
4. Resolução mínima de 1920x1080@60Hz;	□	
5. Ângulo de visão mínimo de 85° horizontal e vertical;	□	
6. Deve possuir brilho mínimo de 300 cd/m².	□	
13. WEBCAM		
1. O equipamento deve possuir uma webcam integrada, de 1.3 megapixels, com resolução de vídeo FHD, no mínimo, não sendo aceita solução externa;	□	
2. Deve possuir mecanismo de bloqueio por tampa, ou desativação mecânica, como solução de privacidade, também integrada ao equipamento.	□	
14. FORMATO DE MANUFATURA E FONTE DE ALIMENTAÇÃO		
1. O equipamento deve ser produzido no formato laptop.	□	
2. O peso total do equipamento sem a fonte, não deve exceder os 1.6 Kg (um quilo e seiscentos gramas);	□	
3. A dobradiça do equipamento, deve ser construída em metal, e com articulação de 180º;	□	
4. O material do gabinete deve ser de estrutura livre de BFR e outros materiais tóxicos e/ou antiecológicos;	□	
5. Deve possuir botão de liga/desliga e luz de indicação de computador ligado (power-on) em local visível e acessível do computador, quando ele estiver aberto;	□	
6. Deve possuir leitor biométrico integrado, em área acessível, quando o notebook estiver aberto;	□	

DESCRIÇÃO	PARECER	OBSERVAÇÕES
7. Deve oferecer a possibilidade de, se demandado, aplicar logo oficial da CONTRATANTE, com área de impressão mínima de 3,00 x 2,72 cm, através de sistema de gravação direta como aplicação em laser, não sendo admitido o uso de adesivagem, serigrafias ou adaptações semelhantes. A gravação deverá ser feita apenas na parte inferior do laptop, visando medidas de segurança;		Licitante respondeu à diligência declarando em sua proposta: *"Serviço de aplicação da logo em laser nos equipamentos."*
8. O computador deverá possuir fenda de encaixe padrão "Kensington" ou “Noble Wedge” para utilização de cabo de aço do mesmo tipo;		
9. Deve ser fornecido com fonte de carregamento/alimentação do mesmo fabricante e compatível com o equipamento, com potência suficiente para suportar todos os dispositivos internos em suas configurações máximas permitidas, além de possibilitar o pleno carregamento da bateria do equipamento;		
10. A fonte de alimentação deve possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);		
11. A fonte deve possuir tensão de entrada 110 e 220 Volts de forma automática;		
12. A fonte deve fornecer uma alimentação mínima de 65W para o equipamento;		
13. Os plugues de conexão à rede elétrica devem seguir o padrão NBR 14136:2002.		
15. BATERIA		
1. Deve ser integrada ao corpo do equipamento, (não destacável);		
2. Potência mínima de 39 wh;		
3. Deve possuir no mínimo 3 (três) células de carregamento; 1. Deve ser capaz de manter o equipamento funcionando ininterruptamente por no mínimo 11 (onze) horas, conforme o padrão de teste do aplicativo MobileMark 2018.		
16. SISTEMA OPERACIONAL E SOFTWARES COMPLEMENTARES		
1. Deve acompanhar o equipamento licença OEM do sistema operacional Microsoft Windows 11 Professional de 64 bits, ou versão mais recente, no idioma Português Brasil;		
2. O equipamento deve ser entregue com o Windows 11 Professional 64 bits, ou versão mais recente instalado;		
3. Cada equipamento deve incluir uma licença específica de software dedicado para: • Controle: Funções de bloqueio e desbloqueio remoto. • Inventário: Gestão detalhada de hardware e software do equipamento. • Rastreabilidade: Recursos de geolocalização integrados.		
4. O software de controle e monitoramento deve possuir a funcionalidade de persistência, garantindo a preservação do cliente do software e de suas funcionalidades, mesmo após a perda total de dados ou formatação do disco rígido, utilizando tecnologia de residência em firmware;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
5. A interface de controle e monitoramento dos equipamentos deve ser baseada em nuvem, sem a necessidade de licenças adicionais além daquelas atribuídas a cada equipamento;		
6. A licença do software dedicado deve ter cobertura mínima equivalente ao período de garantia do equipamento, de 60 (sessenta) meses, e deve estar plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;		
7. Os equipamentos poderão ser entregues com imagem de instalação do sistema operacional e softwares customizada e previamente fornecida pela CONTRATANTE, conforme especificado no Termo de Referência.		Licitante respondeu à diligência declarando em sua proposta: *"Serviço de customização de imagem de instalação do sistema operacional e softwares customizada previamente fornecida pela CONTRATANTE e replicação nos equipamentos."*
17. COMPATIBILIDADE		
1. Deve ser apresentado o certificado de compatibilidade dos equipamentos com o sistema operacional Windows 11 x64 obtido junto à Microsoft. Deverá constar no Microsoft Hardware Compatibility List (HCL) para o sistema operacional exigido e ofertado. 1. A comprovação da compatibilidade será efetuada pela apresentação do documento Hardware Compatibility Test Report emitido especificamente para o modelo no sistema operacional ofertado, ou pela indicação no site da Microsoft;		
2. O equipamento deverá possuir certificado de homologação comprovando a compatibilidade do mesmo com, pelo menos, uma distribuição de Linux. A comprovação da compatibilidade será efetuada pela apresentação de documento emitido especificamente para o modelo ofertado;		
3. O equipamento, na configuração ofertada, deve possuir certificado de conformidade contra incidentes elétricos e de combustão dos materiais (IEC/EN 60950) e de imunidade eletromagnética (IEC/EN 61000), comprovado através de certificados ou do relatório de avaliação de conformidade nos moldes da portaria 170/2012 vigente do INMETRO, ou similar Internacional.		
18. OUTROS REQUISITOS		
1. Todas as partes do computador devem ter coloração neutra em gradações de preto ou prata, mantendo o padrão e cor;		
2. Deverá acompanhar maleta, pasta, mochila ou similar, para transporte com segurança, de tamanho suficiente para acondicionar o equipamento e seus acessórios (fonte de alimentação e cabos), confeccionada em material resistente e impermeável;		
3. Equipamento deverá ser novo, partes e peças, de primeiro uso, que deverão ser acondicionados em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;		
4. Informar marca e modelo dos componentes utilizados na solução e apresentar prospecto com as características técnicas do equipamento e da placa mãe, processador, memórias, interfaces de rede, fonte de alimentação e unidade de armazenamento, incluindo especificação de marca, modelo, e outros elementos que de forma inequívoca identifiquem e constatem as configurações, possíveis expansões e upgrades, comprovando-os através de certificados, manuais técnicos, folders e demais literaturas técnicas editadas pelos fabricantes;		
5. Todos os equipamentos deverão ser entregues idênticos, ou seja, todos os componentes externos e internos deverão ter os mesmos modelo e marca;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
6. O equipamento proposto deverá estar em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;		
7. Não serão aceitos produtos descontinuados por seus fabricantes, não devendo constar em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não poderão ter previsão de descontinuidade de fornecimento, suporte ou vida;		
8. O equipamento em pleno funcionamento deve atender à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que deverá acompanhar a proposta;		
9. Deverá ter compatibilidade eletromagnética e de radiofrequência IEC 61000 comprovado através de certificado ou relatório de avaliação de conformidade emitido por órgão credenciado pelo INMETRO ou internacional equivalente;		
10. Deverá ter compatibilidade com o padrão DMI 2.0 (Desktop Management Interface) ou mais recente da DMTF (Desktop Management Task Force), comprovado através de documentação expedida pelo fabricante do equipamento ou comprovação de que o fabricante do equipamento é membro do consórcio DMTF listado em uma das categorias BOARD ou LEADERSHIP;		
11. Deverá ter compatibilidade com a norma TPM Specification Version 2.0 especificadas pelo TCG (Trsted Computing Group), devendo o fabricante ser membro de uma das categorias listadas no site http://www.trustedcomputinggroup.org/about_tcg/tcg_members;		
12. Deverá ter compatibilidade com EPEAT na nova categoria Bronze, comprovada através de atestados ou certidões que mostrem que o equipamento é aderente ao padrão de eficiência energética EPEAT, emitido por instituto credenciado junto ao INMETRO ou equivalente internacional. 1. Será admitida como comprovação também, a indicação que o equipamento consta no site www.epeat.net na nova categoria Bronze;		
13. Não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS (Restriction of Certain Hazardous Substances);		
14. Os equipamentos deverão pertencer à linha corporativa, não sendo aceitos equipamentos destinados ao uso da linha doméstica. 1. A comprovação deverá ser apresentada junto com a proposta;		
15. Não serão aceitos equipamentos que contenham lacres de violação de garantia por abertura, que inviabilizem a inspeção dos componentes a qualquer momento;		
16. **Garantia de 60 (sessenta) meses on-site**, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo. **Para as baterias, será admitido garantia mínima de 36 (trinta e seis) meses**. Nos meses que restarem para completar o prazo total de garantia, a **FORNECEDORA** se obriga a dispor de bateria para venda em caso de eventual necessidade, e a realizar o suporte e assistências técnica sem ônus para a **CONTRATANTE**.		Na declaração do fabricante temos: "*A assistência técnica "on-site" será realizada, durante todo o período de garantia dos equipamentos, pela própria HP ou por empresa de Assistência Técnica Autorizada da HP, a fim de que sejam mantidos válidos todos os direitos oriundos da garantia;* *• Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa,* ***salvo quando o defeito for provocado por uso inadequado dos equipamentos;***".

3. Conclusão

Após análise da documentação apresentada pela licitante **TORINO INFORMÁTICA LTDA.**, referente ao **Item 3 – MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"**, foram observados alguns pontos inconclusivos, marcados

como ⚠**. Os pontos marcados com** □, são exigências que não foi possível comprovar sua aderência com a documentação enviada.

3.1 Unidade de armazenamento com velocidade de gravação inferior ao mínimo de 1.200 MB/s

Em atenção à diligência apresentada no Parecer Nº 26.2025.SIET.1679784.2025.001317, a licitante declarou oferta o "**HD SSD 256GB NVME – DISCO PM9B1**". Cujas caracteristas descritas no caderno de especificações "**SAMSUNG SSD PM9B1**", atende às exigências do subitem 5.1.

3.2 Instalação do SSD durante o processo de manufatura do computador, e homologado como parte do equipamento

Não foi possível constatar na declaração do fabricante ou no caderno de especificações que o disco **Samsung HD SSD 256GB NVME – DISCO PM9B1** faz parte do processo de manufatura do computador e que seja homologado como parte do equipamento.

Providências:

- Comprovar o cumprimento do subitem 5.3

3.3 Teclado retroiluminado no idioma padrão, português (Brasil), ABNT-II

Licitante respondeu à diligência declarando:

"Teclado: Keyboard HP Standard Keyboard, spill-resistant,backlit, Durakey keyboard. Notebook nacional com teclado (Brasil) ABNT-II e retroiluminado."

3.4 Customizações

Licitante respondeu à diligência declarando em sua proposta:

"Serviço de aplicação da logo em laser nos equipamentos."

3.5 Entrega dos equipamentos com imagem de instalação do sistema operacional customizada e fornecida pela CONTRATANTE

Licitante respondeu à diligência declarando em sua proposta:

*"Serviço de customização de imagem de instalação do sistema operacional e softwares customizada previamente fornecida pela CONTRATANTE e replicação nos equipamentos.***"**

3.6 Da garantia

Permanece o problema de que na declaração do fabricante temos a seguinte cláusula:

> "***• Durante o prazo de garantia será substituída sem ônus para a contratante, a parte ou peça defeituosa, salvo quando o defeito for provocado por uso inadequado dos equipamentos;***"

A cláusula contraria a condição descrita no subitem 8.2.1.1 do Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317:

> *"(...)*
>
> *8.2.1.1* ***A garantia deverá abranger acidentes, inclusive danos não intencionais, tais como QUEDA, TELA QUEBRADA, DERRAMAMENTO DE LÍQUIDOS, OSCILAÇÃO DE ENERGIA, não se limitando às ocorrências supracitadas, sendo o rol apresentado uma lista não exaustiva."***

Contudo, em sua proposta, a licitante declara "*GARANTIA: 60 (SESSENTA) MESES ONSITE PARA O EQUIPAMENTO, CONFORME EDITAL;*".

Solicita-se ao pregoeiro avalie se a documentação apresentada atende à exigência de que **garantia e assistência técnica dos produtos sejam do fabricante ou pela assistência técnica autorizada do mesmo, bem com à cláusula 8.2.1 do Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317.**

Em caso afirmativo, **solicita-se** que o proponente declare expressamente tal cláusula em sua proposta.

SUGESTÃO:

"Garantia e assistência técnica do fabricante ou pela assistência técnica autorizada do mesmo, na modalidade ***"on-site", pelo período de 60 (sessenta) meses,*** *conforme estabelecido no Edital e Anexos. A garantia abranger acidente, inclusive danos não intencionais, tais como QUEDA, TELA QUEBRADA, DERRAMAMENTO DE LÍQUIDOS, OSCILAÇÃO DE ENERGIA, não se limitando às ocorrências supracitadas, sendo o rol apresentado uma lista não exaustiva."*

É o parecer.

Manaus, 29 de julho de 2025.

FRANCISCO ELVISLÂNIO PEREIRA
Agente de apoio - Manutenção/Informática

WALESKA GRACIEME ANDRADE MARQUES DE OLIVEIRA
Agente Técnico - Analista de Banco de Dados



Documento assinado eletronicamente por **Francisco Elvislânio Pereira**, **Agente de Apoio - Administrativo**, em 29/07/2025, às 09:42, conforme art. 1º, III, "b", da Lei 11.419/2006.

Documento assinado eletronicamente por **Waleska Gracieme Andrade Marques de Oliveira**, **Agente Técnico - Analista de Banco de Dados**, em 29/07/2025, às 09:43, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1683372** e o código CRC **56CCA884**.

Torino Informática Ltda.
CNPJ 03.619.767/0005-15
I.E. 083.327.90-8
tanabe@grupotorino.com.br

Serra, 17 de Julho de 2025

À
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS

EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP
ABERTURA: 29/06/2025 ÀS 10H00MIN.

PROPOSTA DE PREÇO

PREZADOS SENHORES:

TENDO EXAMINADO MINUCIOSAMENTE AS NORMAS ESPECÍFICAS DO PROCESSO LICITATÓRIO ACIMA TENDO COMO OBJETO A *AQUISIÇÃO DE EQUIPAMENTOS DE INFORMATICA* E APÓS TERMOS TOMADO CONHECIMENTO DE TODAS AS CONDIÇÕES LÁ ESTABELECIDAS, PASSAMOS A FORMULAR A SEGUINTE PROPOSTA:

1. PROPOSMOS FORNECER, SOB NOSSA INTEGRAL RESPONSABILIDADE, OS EQUIPAMENTOS, OBJETO DO REFERIDO CERTAME, CONFORME A TABELA ABAIXO:

ITEM	ESPECIFICAÇÃO	QUANT	MARCA	VALOR UNITÁRIO	VALOR TOTAL
Lote 03	COMPUTADOR TIPO 3 - "NOTEBOOK DE 14" NOTEBOOK HP 640 G11 PROC INTEL ULTRA 5 135U - VPRO MEMÓRIA 16GB(2X8) DDR5 5600 HD SSD 256GB NVME – DISCO PM9B1 WEBCAM 5MP WIFI6 + BT AX211 TELA 14 FHD BATERIA 56WHR WINDOWS 11 PROFESSIONAL SOFTWARE ABSOLUTE GARANTIA pelo período de60 (sessenta) meses, conforme estabelecido no Edital e Anexos. A garantia abranger acidente, inclusive danos não intencionais, tais como QUEDA, TELAQUEBRADA, DERRAMAMENTO DE LÍQUIDOS, OSCILAÇÃO DE ENERGIA, não se limitando às ocorrências supracitadas, sendo o rol apresentado um alista não exaustiva.". ACOMPANHA: MOUSE USB 1000 DPI HP E MOCHILA PARA NOTEBOOK. Teclado: Keyboard HP Standard Keyboard, spill-resistant,backlit, Durakey keyboard. Notebook nacional com	300	HP 640 G11	**R$ 8.250,00** (OITO MIL E DUZENTOS E CINQUENTA REAIS)	**R$ 2.475.000,00** (DOIS MILHOES E QUATROCENTOS E SETENTA E CINCO MIL REAIS)

	teclado (Brasil) ABNT-II e retroiluminado. Serviço de aplicação da logo em laser nos equipamentos. Serviço de customização de imagem de instalação do sistema operacional e softwares customizada previamente fornecida pela CONTRATANTE e replicação nos equipamentos.				
				TOTAL DA PROPOSTA	**R$ 2.475.000,00** (DOIS MILHOES E QUATROCENTOS E SETENTA E CINCO MIL REAIS)

2. ***O VALOR TOTAL DA PROPOSTA É R$ 2.475.000,00 (DOIS MILHOES E QUATROCENTOS E SETENTA E CINCO MIL REAIS)***
3. NOS PREÇOS INDICADOS ACIMA ESTÃO INCLUÍDOS, ALÉM DO FORNECIMENTO DO PRODUTO, TODOS OS DEMAIS CUSTOS COM SALÁRIOS, BENEFÍCIOS, ENCARGOS, TRIBUTOS, FRETE, GARANTIA E DEMAIS CONTRIBUIÇÕES PERTINENTES.
4. DECLARAMOS QUE CONHECEMOS A LEGISLAÇÃO DE REGÊNCIA DESTA LICITAÇÃO E QUE OS SERVIÇOS SERÃO PRESTADOS DE ACORDO COM AS CONDIÇÕES ESTABELECIDAS NESTE EDITAL, O QUE CONHECEMOS E ACEITAMOS EM TODOS OS SEUS TERMOS, INCLUSIVE QUANTO AO PAGAMENTO E OUTROS.
5. DECLARAMOS, TAMBÉM, QUE NENHUM DIREITO A INDENIZAÇÃO OU REEMBOLSO DE QUAISQUER DESPESAS NOS SERÁ DEVIDO, CASO A NOSSA PROPOSTA NÃO SEJA ACEITA PELA **MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS** SEJA QUAL FOR O MOTIVO.
6. A PRESENTE PROPOSTA É VALIDA POR **90 (NOVENTA) DIAS**, A CONTAR DA DATA ESTABELECIDA PARA A SUA ABERTURA.
7. OS PAGAMENTOS SERÃO REALIZADOS EM ATÉ **20 (VINTE)** DIAS E CREDITADOS A **CONTA CORRENTE Nº 7105-6**, **AGÊNCIA Nº 2414-7** NO **BANCO DO BRASIL S/A, CÓDIGO 001.**
8. O PROCURADO DA EMPRESA, CUJO CNPJ É 03.619.767/0005-15, QUE ASSINARÁ A ATA DE REGISTRO DE PREÇO OU CONTRATO, É O **SR. RODRIGO DO AMARAL RISSIO** PORTADOR DO **CPF 220.807.218-95** E **RG 27.954.969-6 SSP/SP;**
9. GARANTIA: **60 (SESSENTA) MESES** ONSITE PARA O EQUIPAMENTO**,** CONFORME EDITAL;
10. VALORES EXPRESSOS EM REAIS
11. PRAZO DE ENTREGA: CONFORME EDITAL ATÉ **90 (NOVENTA) DIAS,** APÓS A DATA DE ASSINATURA DO CONTRATO E/OU RECEBIMENTO DO EMPENHO;
12. ENVIO DO MATERIAL VIA TERRESTRE/RODOVIÁRIO;
13.

DADOS DOS SOCIOS:

RODRIGO DO AMARAL RISSIO
RG 27.954.969-6 SSP/SP
CPF 220.807.218-95
DENISE DO AMARAL RISSIO
RG 6.438.259 SSP/SP
CPF 246.137.578-00

DADOS DA LICITANTE / CONTRATAÇÃO:

TORINO INFORMATICA LTDA
CNPJ 03.619.767/0005-15
IE: 083.327.90-8

IM: 4675890
AV. 600, SN – QUADRA 15 – MODULO 10 – SETOR INDUSTRIAL – TIMS
SERRA – ES – CEP 29.161-419

DADOS PARA CONTATO / INFORMAÇÕES:

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CNPJ: 03.619.767/0001-91
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SOROCABA – SP – CEP 18085-750
CONTATO: MARCELLO TANABE
TEL/FAX: (15) 3238-9520 OU 99148-9313
EMAIL: tanabe@grupotorino.com.br

DATASHEET EQUIPAMENTO / DRIVERS:

https://support.hp.com/br-pt/drivers/hp-elitebook-640-14-inch-g11-notebook-pc/2102139861
https://www8.hp.com/h20195/v2/GetDocument.aspx?docname=c08915793

DADOS PARA SUPORTE TÉCNICO:

https://chamados.grupotorino.com.br
suporte@grupotorino.com.br
0800-201-5666



TORINO INFORMÁTICA LTDA
CNPJ: 03.619.767/0005-15
RODRIGO DO AMARAL RISSIO
RG: 27.954.969-6 SSP/SP
CPF: 220.807.218-95

APPLICATION		REVISIONS			APPROVALS	
NEXT ASSY	PROJECT NO.	ECN NO.	REV	DESCRIPTION	DATE	APPROVED
	13196	101981922	A	Production Release	01/27/22	ELSA,KE

HP CONFIDENTIAL

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FRACTIONS DECIMALS ANGLES

± 1/32 .XX ± .02 [0.5] ±1°

.XXX ± .010 [0.25]

APPROVALS		DATE
DRAWN	David Li	01/27/22
CHECKED		
DSGN ENGR	David Li	01/27/22
ENG		
MFG		
QA		
LEGAL		
AGENCY		

DO NOT SCALE DRAWING

256GB M.2 2280 PM9B1 PCIe Gen4x4 value
(With Specification)

SIZE	DRAWING NO.	REV
A	N16683	A

SUPPLEMENTS: EF,PDF

SHEET 1 OF 4

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4. SCOPE

This document specifies the HP Inc requirements for a **Solid State Drive ASSEMBLY** featuring:

Capacity:	256 GB
Interface:	PCIe NVMe Gen4x4
Form Factor:	M.2 2280
Model Name	MZVL4256HBJD-00BH1

Unless otherwise stated herein, all references to HP shall mean HP Inc. Purchasing Department.

Supplier shall not proceed with the incorporation of any change to the drive nor deviate from any requirement of this specification without first obtaining specific written authorization from HP.

TABLE 1
REFERENCE

PART NUMBER	DESCRIPTION	Firmware
N16683-001	256GB M.2 2280 PM9B1 PCIe Gen4x4 value	HPS0NHAV

5. REFERENCE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the document is of the issue in effect on the date of invitation to bid or request for proposal.

Samsung Doc "SAMSUNG SSD PM9B1 - Specification (PCIe® NVMeTM M.2)."

6. FUNCTIONAL ESPECIFICATION

6.1 PERFORMANCE SPECIFICATIONS (1)

Data Transfer Rate (128KB)		Data I/O Speed (4KB)	
Sequential Read:	Up to 3,300 MB/s	Random Read:	Up to 210K IOPS
Sequential Write:	Up to 1,200 MB/s	Random Write:	Up to 280K IOPS

6.2 RELIABILITY SPECIFICATIONS

Uncorrectable Bit Error Rate:	< 1 sector per 10^{15} bits read
MTBF:	1.5 Million Hours

6.3 ENVIRONMENTAL SPECIFICATIONS

Temperature	
Operating(2):	0°C to 70°C
Non-operating:	-40°C to 85°C

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Humidity (non-condensing)	
Non-operating:	5 ~ 95%
Linear Shock (0.5ms duration with 1/2 sine wave, 3axis)	
Non-operating:	1,500 Gpeak
Vibration (20Hz ~ 2,000Hz, Sinusoidal)	
Non-operating:	20 Gpeak

6.4 **POWER SPECIFICATIONS**

Supply Voltage / Tolerance:	3.3V± 5%
Voltage Ripple/Noise (max.):	100mV p-p
Active[3] (Typ., RMS)	
Read (3.3V):	4.1 W
Write (3.3V):	4.2 W
Idle[4] (Typ.)	40 mW
Sleep[4] (Typ.)	3.5 mW

Note1: Actual performance may vary depending on use conditions and environment. Performance measurements based on TurboWrite technology.
Note2: Temperature is measured by SMART Temperature. Proper airflow recommended to prevent the thermal throttling if over 70°C
Note3: Active power is measured on sequential write and read.
Note4: Actual measurements result may vary depending on use conditions and environment.

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Torino Informática Ltda.
CNPJ 03.619.767/0005-15
I.E. 083.327.90-8
tanabe@grupotorino.com.br

Serra, 30 de Julho de 2025

À
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS

EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP
ABERTURA: 29/06/2025 ÀS 10H00MIN.

RESPOSTA DILIGÊNCIA

Sobre o subitem 5 - UNIDADE DE ARMAZENAMENTO

Foi apresentado o datasheet do HD PM9B1, que é um HD utilizado pela HP, inclusive o documento desse HD é exclusivo para HP. Onde está escrito HPI, que dizer HP Inc, que é a HP para equipamentos pessoais, responsáveis por NOTEBOOKS, COMPUTADORES, WORKSTATIONS E MONITORES.



Para complementar a informação, segue anexo o documento da HP que comprova que o modelo do HD PM9B1 está homologado pela HP. Esse é um documento interno da HP, por isso ele não é utilizado.

Sobre a subitem 16 – GARANTIA
De acordo com o Edital:
8.2 Da Garantia e Assistência Técnica 8.2.1 Os equipamentos objeto desta licitação, deverão contar com garantia e assistência técnica do fabricante ou pela assistência técnica autorizada do mesmo, na modalidade "*on-site*"**, pelo período de 60 (sessenta) meses,** contados a partir da emissão do **TERMO DE RECEBIMENTO DEFINITIVO** do objeto, devendo atender aos chamados de assistência técnica, conforme estabelecido neste Termo e Anexos. 8.2.1.1 A garantia deverá abranger acidentes, inclusive danos não intencionais, tais como QUEDA, TELA QUEBRADA, DERRAMAMENTO DE LÍQUIDOS, OSCILAÇÃO DE ENERGIA, não se limitando às ocorrências supracitadas, sendo o rol apresentado uma lista não exaustiva.

Já foi comprovado pela carta da HP que a Torino é assistencia tecnica autorizada do fabrincate HP, diante disso, estamos declarando na proposta que atende ao solicitado "GARANTIA 5 ANOS ONSITE de acordo com o solicitado no 8.2.1 E 8.2.1.1, em virtude da Torino ser Assistência técnica autorizada do fabricante HP. "

Estamos complementando o texto em nossa proposta, conforme sugerido para ficar claro que a garantia irá cobrir danos acidentais *inclusive danos não intencionais. tais como QUEDA, TELAQUEBRADA, DERRAMAMENTO DE LÍQUIDOS, OSCILAÇÃO DE ENERGIA, não se limitando às ocorrências supracitadas, sendo o rol apresentado uma lista não exaustiva.*

Rodrigo do Amaral Rissio
RG: 27.954.969-6 SSP/SP
Sócio / Procurador

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

OFÍCIO Nº 297.2025.CPL.1685874.2025.001317

Manaus, *na data da assinatura.*

Ao Senhor

CARLOS ALEXANDRE DOS SANTOS NOGUEIRA

Chefe do Setor de Infraestrutura e Telecomunicação

Assunto: Análise de Propostas de Preços referente ao **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ SRP**.

Senhor Chefe,

Cumprimentando-o com o presente, informamos que tramita nesta Comissão Permanente de Licitação o Processo SEI n.º 2025.001317, referente ao **PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP,** cujo objeto é o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses*.

Isto posto, encaminho os autos em epígrafe a esse **Setor de Infraestrutura e Telecomunicação - SIET,** para **análise e manifestação** quanto aos documentos apresentados em sede de nova diligência pela licitante abaixo elencada:

1. **TORINO INFORMÁTICA LTDA.** , CNPJ (MF) n.º 03.619.767/0005-15, para o **Item 3** (doc's. 1685870, 1685872 e 1685873).

Atenciosamente,

Maurício Araújo Medeiros

Pregoeiro - PORTARIA 606/2025/SUBADM

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 30/07/2025, às 12:24, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1685874** e o código CRC **E6428415**.

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - CEP 69000-000 - Manaus - AM - www.mpam.mp.br

PARECER Nº 27.2025.SIET.1686055.2025.001317

PROCESSO DE COMPRA: 2025.001317 Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ SRP Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317
OBJETO: Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.

1. **Relatório**

Trata-se de pedido de compatibilização da proposta da empresa **TORINO INFORMÁTICA LTDA.** , com documentos enviados em respostas às diligênciass requeridas no Parecer Nº 92.2025.DTIC.1683372.2025.001317 ao avaliar a documentação encaminhada como respostas à diligências, para o **ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"** , documentos 1685870, 1685872 e 1685873 recebido no dia 30/7/2025.

2. **Da Análise**

2.1 Produto ofertado

Item	Descrição	Quantidade	Produto Ofertado
1	**ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"** **Marca/Modelo de Referência:** Lenovo ThinkPad T14 GEN 5, Dell Latitude 5450.	300	**ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"** NOTEBOOK HP 640 G11 PROC INTEL ULTRA 5 135U - VPRO MEMÓRIA 16GB(2X8) DDR5 5600 HD SSD 256GB NVME WEBCAM 5MP WIFI6 + BT AX211 TELA 14 FHD BATERIA 56WHR WINDOWS 11 PROFESSIONAL SOFTWARE ABSOLUTE GARANTIA 5 ANOS ACOMPANHA: MOUSE USB 1000 DPI HP E MOCHILA PARA NOTEBOOK.

2.2 Análise comparativa

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. PLACA PRINCIPAL (PLACA MÃE)		
1. A placa mãe deve ser construída pelo próprio fabricante do microcomputador ou produzida sob a especificação do mesmo, não sendo aceito placas de livre comercialização no mercado, nem em regime de OEM;	□	
2. Deve possuir, no mínimo, 1 (um) slot para memória RAM, "do tipo DDR-5 SODIMM", permitindo a instalação de até 40 (quarenta) Gigabytes, 8 (oito) soldadas diretamente na placa e até 32 (trinta e dois) instaladas no slot. Admite-se 2 slots com 1 módulo de memória cada, como configuração superior, em substituição aos módulos soldados na placa principal;	□	
3. Deve suportar tecnologia Dual Channel de utilização de memória RAM;	□	
4. Deve possuir 1 (um) Socket M.2 para SSD SATA ou NVMe;	□	
5. Deve possuir 1 (um) Socket M.2 Para Cartões Wi-Fi/Bluetooth;	□	
6. Deve possuir recursos DASH 1.0 (Desktop and mobile Architecture for System Hardware), ou tecnologia minimamente equivalente;	□	
7. Deve ser compatível com Energy Star 7.0/7.1, ou tecnologias superiores;	□	

DESCRIÇÃO	PARECER	OBSERVAÇÕES
8. Deve possuir capacidade de desligamento do vídeo e do disco rígido após tempo determinado pelo usuário, religamento por acionamento de teclado ou mouse, bem como função de economia de energia para monitor, placa mãe e unidades de armazenamento internas;		
9. Deve possuir chip TPM (Trusted Platform Module), versão 2.0, ou superior, soldado à placa principal, e destinado ao armazenamento de senhas, certificados digitais e chaves criptográficas em conformidade com as especificações do Trusted Computing Group;		
10. Deve possuir suporte a virtualização por hardware;		
11. Deve possuir suporte a implementação de extensões de virtualização de I/O por hardware;		
12. Deve possuir suporte a aceleração de segurança AES no hardware;		
13. Deve possuir suporte à tecnologia de acesso remoto out-of-band embutida no hardware;		
14. Deve possuir controle da velocidade de rotação do cooler do processador de forma automática, de acordo com a variação de temperatura da CPU;		
15. Deve suportar boot por pendrive ou disco conectado a uma porta USB 3.1 ou 3.2;		
16. Deve suportar a inicialização de sistema operacional pela interface de rede cabeada, através de PXE boot e http/https boot.		
2. BIOS		
1. O BIOS deve ser desenvolvido pelo mesmo fabricante do equipamento ou customizado por ele;		
2. O fabricante do equipamento, deverá ser totalmente responsável pelo BIOS fornecido juntamente com a placa mãe e pela atualização do mesmo, devendo promover as alterações que se façam necessárias e corrigir problemas ou danos causados ao equipamento em razão desse BIOS ou de procedimentos de atualização deste, (que poderão ser acompanhados pela empresa caso haja necessidade), durante o período de garantia do equipamento;		
3. BIOS em português ou inglês, desenvolvido em conformidade com a especificação UEFI 2.5 ou superior (http://www.uefi.org) e capturáveis pela aplicação de inventário SCCM (System Center Configuration Manager);		
4. O fabricante deverá comprovar a compatibilidade com o padrão UEFI através do site http:// www.uefi.org/members, na categoria membros;		
5. Deve ser do tipo flash EPROM, atualizável por software, compatível com o padrão plug-and-play;		
6. Deve ser lançado a partir de 2016 e entregue na versão mais atual disponibilizada pelo fabricante;		
7. Deve ter suporte a ACPI, ou tecnologia superior;		
8. Deve ser desenvolvido de acordo com o padrão de segurança NIST 800-147 ou ISO/IEC 19678:2015, para garantir a integridade do BIOS;		
9. Deve possuir recursos de controle de permissão através de senhas, sendo uma para inicializar o computador e outra para acesso e alterações das configurações do BIOS;		
10. Deve possuir software embarcado no BIOS com funções de diagnóstico de problemas, e gerenciamento com as seguintes características: 1. Permitir o teste do equipamento, com independência do sistema operacional instalado, o software de diagnóstico deve ser capaz de ser executado (inicializado) a partir da UEFI (Unified /Extensible Firmware Interface) ou do Firmware do equipamento através do acionamento de tecla função (F1...F12); 2. O software de diagnóstico deverá ser capaz de informar, através de tela gráfica: O fabricante e modelo do equipamento, processador, memória RAM, firmware, e capacidade do disco rígido;		
11. Deve possuir ferramenta que possibilite realizar a formatação definitiva dos dispositivos de armazenamento conectados ao equipamento, desenvolvida em acordo com o padrão de segurança NIST 800-88 ou ISO/IEC 27040:2015. Caso esta ferramenta não seja nativa do BIOS, deverá ser oficialmente homologada pelo fabricante do equipamento;		
12. Deve possuir opção para exportar/importar configurações. No caso de ferramenta externa fornecida para atender esse item, a mesma deve ser disponibilizada no web site de suporte do fabricante, em conjunto com outras ferramentas relacionadas e homologadas para o modelo do equipamento;		
13. Deve oferecer a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela **CONTRATANTE**;		
14. Deve possuir campo não editável com o número de série do equipamento gravado em memória não volátil e campo editável que permita inserir identificação customizada (identidade patrimonial com pelo menos 10 caracteres). Serão aceitos BIOS com reprogramação via software desde que estes estejam devidamente licenciados para o equipamento e disponibilizados para download no web site de suporte do fabricante;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
15. Deverá permitir o gerenciamento remoto do microcomputador mesmo desligado, desde que energizado pela rede elétrica e conectado localmente à rede de dados, permitindo ligar e desligar o microcomputador remotamente, com controle de acesso, e com possibilidade de definir horários programados; 1. Deve permitir acesso remoto através da rede ao POST (procedimento de inicialização) e BIOS para leitura e gravação, mesmo com o equipamento desligado; 2. Deverá permitir acesso remoto ao sistema operacional e processo de inicialização do microcomputador através de interface gráfica, com controle remoto do mouse e teclado (KVM remoto), independente do suporte de aplicações locais ou estado do sistema operacional; 3. Possuir a capacidade de inventário remoto de Hardware mesmo com o equipamento desligado.		
3. PROCESSADOR		
1. Deverá possuir, 2 (dois) núcleos, no mínimo, e 12 (doze) threads de processamento com frequência de operação interna básica de, no mínimo, 1.6 GHz;		
2. Em caso de processadores com arquitetura de computação heterogênea (big.LITTLE), só serão contabilizados os cores voltados para performance, na contagem mínima de núcleos e ciclos de clock base (MHz);		
3. Memória cache total de, no mínimo, 12MB;		
4. O processador ofertado deverá ser Intel Core Ultra 5, "de 1ª geração", ou AMD Ryzen 5 PRO, "serie 8000", admitindo-se famílias ou gerações mais novas;		
5. O processador deverá ser da última geração disponível utilizada pelo fabricante do equipamento, **com desempenho mínimo de 17.000 (dezessete mil) pontos**, considerando o uso pleno de todos os núcleos e sem a aplicação de configurações específicas para aumento ou modificação de desempenho, como "overclock", "undervoltage", "overvoltage" ou quaisquer outras que não estejam em conformidade com os padrões definidos pelo fabricante; 1. O desempenho será comprovado por intermédio de resultados de BenchMark, disponíveis em: http://www.cpubenchmark.net/cpu_list.php. 2. Será admitida uma margem de tolerância de 2% (dois por cento) do desempenho mínimo exigido.		
6. Deve possuir tecnologia de controle dinâmico de frequência do processador para núcleos individuais e ou múltiplos núcleos, podendo atingir até 4.4 GHz, no mínimo;		
7. Deve possuir controlador com suporte à memória RAM do tipo DDR5-5600 MT/s, ou superior;		
8. Deverá possuir tecnologia de fabricação de 7 nm (sete nanômetros) ou inferior;		
9. TDP(Thermal Design Power) mínimo de 12W, e máximo de 58W, declarado pelo fabricante;		
10. Deve possuir instruções do padrão AVX 2.0, ou superior;		
11. Deve possuir instruções do padrão SSE4.1/4.2, ou superior;		
12. Deve possuir instruções que implementem extensões de virtualização de hardware;		
13. Deve possuir instruções AES-NI embutidas;		
14. O proponente deverá declarar em sua proposta comercial o modelo do processador ofertado.		
4. MEMÓRIA RAM		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. Deverá possuir, no mínimo, 16 (dezesseis) Gb de memória RAM instalados, com capacidade de expansão mínima de 40 (quarenta) Gb;		
2. Deverá ser do tipo DDR-5/LPDDR-5 SODIMM ou superior e possuir no mínimo, 5600 MT/s de velocidade de comunicação com o barramento principal;		
3. A implementação do total de memória RAM deve utilizar 1 (um) módulo, de 8 (oito) GB, e mais 8 (oito) GB soldada diretamente à placa principal, utilizando tecnologia dual channel; 1. Admite-se que ambos os módulos sejam do tipo SODIMM, e sejam removíveis como configuração superior a mencionada acima;		
4. O(s) módulo(s) removível(eis) deve(m) ser instalado(s) durante o processo de manufatura do computador, e homologado(s) como parte do equipamento, inclusive estando coberto(s) pela garantia e suporte como descrito no Termo de Referência.		
5. UNIDADE DE ARMAZENAMENTO		
1. Deve possuir, no mínimo, 1 (uma) unidade padrão tipo Solid State Drive (SSD) interna instalada do tipo M.2, na capacidade mínima de 256 GB e velocidade mínima de gravação de 1.200MB/s;		
2. Deve utilizar interface tipo M.2 PCIe 4.0, com o protocolo NVMe, ou superior;		
3. Deve ser instalada durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência.		
6. CONECTIVIDADE		
1. Deverá possuir no mínimo 4 (quatro) portas USB; 1. Do total de portas, no mínimo 2 (duas) devem ser do tipo USB 3.2 tipo A; 2. No mínimo 1 (uma) deve ser do tipo USB 3.2 Tipo C ou Thunderbolt;		
2. Possuir, no mínimo, 1 (uma) porta de vídeo adicional, suportando a utilização de 1 (um) monitor auxiliar simultânea e independentemente da tela integrada;		
3. O tipo da porta auxiliar de vídeo supracitada deve ser HDMI 2.0 ou DisplayPort 1.2. Em caso de versões miniaturizadas destas, adaptadores revertendo para elas devem ser fornecidos sem custo adicional.		
7. INTERFACES DE REDE		
1. Deve possuir, no mínimo, 1 (uma) interface de rede RJ45 compatível com os padrões 10, 100 e 1000 Mbps, autosense, full-duplex e plug-and-play, configurável totalmente por software e com função Wake On Lan instalada e em funcionamento;		
2. A controladora ethernet, deverá ser do tipo "onboard", e suportar recurso WOL (Wake On LAN);		
3. Deve possuir, no mínimo, 1 (uma) interface de rede sem fios no padrão Wi-Fi 6 (802.11 B/G/N/AX), com velocidade de até 1.73Gbps, Tecnologia MU-MIMO, banda dupla em 2.4Ghz e 5Ghz, e suporte a Bluetooth 5.3 ou superior;		
4. As controladoras Wi-Fi e Bluetooth, deverão estar em um único cartão M.2, conectado em slot específico na placa mãe, que deve ser instalado durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência;		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
5. A interface Wireless ofertada deve possuir, na data da entrega da proposta, homologação junto à **ANATEL** com certificado disponível publicamente no endereço eletrônico desta agência, conforme a Resolução n.º 242 de 30 de novembro de 2000.		
8. CONTROLADORA DE VÍDEO		
1. Deve possuir controlador 3D/2D com suporte a DirectX 12, ou superior;		
2. Deve suportar Pixel Shader 3.0, ou superior;		
3. Deve suportar OpenGL 4.5, ou superior;		
4. Deve suportar HDCP ou HDR;		
5. Deve suportar a resolução mínima de 1920 X 1080 @ 60 Hz;		
6. Deve possuir tecnologia de controle dinâmico de frequência, podendo atingir, no mínimo, 1.35GHz;		
7. Deve suportar, no mínimo, o uso de 3 (três) monitores simultânea e independentemente.		
9. CONTROLADORA DE SOM E MULTIMÍDIA		
1. O equipamento deve possuir uma controladora de som integrada, do tipo "onboard";		
2. Deve possuir, no mínimo, uma interface de som com 1 (um) conector combinado para fone de ouvido e microfone, de 3,5 mm;		
3. Deve possuir, no mínimo, 2 alto-falantes internos, com 2 Watt RMS de potência cada, compatíveis com a controladora de som;		
4. Deve incorporar microfone(s), com cancelamento de ruído, voltados para captar o som do usuário em frente ao computador.		
10. TECLADO		
1. Deve ser integrado e retroiluminado no idioma padrão, português (Brasil), ABNT-II;		
2. Deve possuir teclas multimídia, com no mínimo, aumentar e diminuir volume, além do mute; 1. Admite-se a utilização de teclas de função (F1...F12), para tais ações.		
11. DISPOSITIVOS APONTADORES		
1. Deve possuir um touchpad integrado, com dois botões, e área útil de 4 (quatro) pol², no mínimo; 1. Admite-se que os botões sejam integrados, como cliques diretos na parte inferior do touchpad;		
2. Deve suportar gestos de rolagem, ou possuir teclas, área ou dispositivo dedicado;		
3. Deve acompanhar um mouse adicional, da mesma cor e do mesmo fabricante do equipamento ofertado; 1. Deve ser óptico, com conexão USB, com 3 (três) botões e sistema de rolagem de página, com formato ergonômico e com design ambidestro, devendo possuir resolução mínima por hardware de 800 dpi.		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
12. TELA INTEGRADA		
1. Deve ser de tecnologia IPS (In-Plane Switching) ou VA (Vertical Alignment);		
2. Tamanho de 14 polegadas widescreen, no mínimo;		
3. Deve suportar, no mínimo, 16 milhões de cores;		
4. Resolução mínima de 1920x1080@60Hz;		
5. Ângulo de visão mínimo de 85° horizontal e vertical;		
6. Deve possuir brilho mínimo de 300 cd/m².		
13. WEBCAM		
1. O equipamento deve possuir uma webcam integrada, de 1.3 megapixels, com resolução de vídeo FHD, no mínimo, não sendo aceita solução externa;		
2. Deve possuir mecanismo de bloqueio por tampa, ou desativação mecânica, como solução de privacidade, também integrada ao equipamento.		
14. FORMATO DE MANUFATURA E FONTE DE ALIMENTAÇÃO		
1. O equipamento deve ser produzido no formato laptop.		
2. O peso total do equipamento sem a fonte, não deve exceder os 1.6 Kg (um quilo e seiscentos gramas);		
3. A dobradiça do equipamento, deve ser construída em metal, e com articulação de 180º;		
4. O material do gabinete deve ser de estrutura livre de BFR e outros materiais tóxicos e/ou antiecológicos;		
5. Deve possuir botão de liga/desliga e luz de indicação de computador ligado (power-on) em local visível e acessível do computador, quando ele estiver aberto;		
6. Deve possuir leitor biométrico integrado, em área acessível, quando o notebook estiver aberto;		
7. Deve oferecer a possibilidade de, se demandado, aplicar logo oficial da CONTRATANTE, com área de impressão mínima de 3,00 x 2,72 cm, através de sistema de gravação direta como aplicação em laser, não sendo admitido o uso de adesivagem, serigrafias ou adaptações semelhantes. A gravação deverá ser feita apenas na parte inferior do laptop, visando medidas de segurança;		
8. O computador deverá possuir fenda de encaixe padrão "Kensington" ou “Noble Wedge” para utilização de cabo de aço do mesmo tipo;		
9. Deve ser fornecido com fonte de carregamento/alimentação do mesmo fabricante e compatível com o equipamento, com potência suficiente para suportar todos os dispositivos internos em suas configurações máximas permitidas, além de possibilitar o pleno carregamento da bateria do equipamento;		
10. A fonte de alimentação deve possuir eficiência igual ou superior a 85%, com 50% da carga de trabalho e que implemente PFC (Power Factor Correction);		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
11. A fonte deve possuir tensão de entrada 110 e 220 Volts de forma automática;		
12. A fonte deve fornecer uma alimentação mínima de 65W para o equipamento;		
13. Os plugues de conexão à rede elétrica devem seguir o padrão NBR 14136:2002.		
15. BATERIA		
1. Deve ser integrada ao corpo do equipamento, (não destacável);		
2. Potência mínima de 39 wh;		
3. Deve possuir no mínimo 3 (três) células de carregamento; 1. Deve ser capaz de manter o equipamento funcionando ininterruptamente por no mínimo 11 (onze) horas, conforme o padrão de teste do aplicativo MobileMark 2018.		
16. SISTEMA OPERACIONAL E SOFTWARES COMPLEMENTARES		
1. Deve acompanhar o equipamento licença OEM do sistema operacional Microsoft Windows 11 Professional de 64 bits, ou versão mais recente, no idioma Português Brasil;		
2. O equipamento deve ser entregue com o Windows 11 Professional 64 bits, ou versão mais recente instalado;		
3. Cada equipamento deve incluir uma licença específica de software dedicado para: • Controle: Funções de bloqueio e desbloqueio remoto. • Inventário: Gestão detalhada de hardware e software do equipamento. • Rastreabilidade: Recursos de geolocalização integrados.		
4. O software de controle e monitoramento deve possuir a funcionalidade de persistência, garantindo a preservação do cliente do software e de suas funcionalidades, mesmo após a perda total de dados ou formatação do disco rígido, utilizando tecnologia de residência em firmware;		
5. A interface de controle e monitoramento dos equipamentos deve ser baseada em nuvem, sem a necessidade de licenças adicionais além daquelas atribuídas a cada equipamento;		
6. A licença do software dedicado deve ter cobertura mínima equivalente ao período de garantia do equipamento, de 60 (sessenta) meses, e deve estar plenamente operacional a partir da aceitação definitiva do equipamento pela CONTRATANTE;		
7. Os equipamentos poderão ser entregues com imagem de instalação do sistema operacional e softwares customizada e previamente fornecida pela CONTRATANTE, conforme especificado no Termo de Referência.		
17. COMPATIBILIDADE		

DESCRIÇÃO	PARECER	OBSERVAÇÕES
1. Deve ser apresentado o certificado de compatibilidade dos equipamentos com o sistema operacional Windows 11 x64 obtido junto à Microsoft. Deverá constar no Microsoft Hardware Compatibility List (HCL) para o sistema operacional exigido e ofertado. 1. A comprovação da compatibilidade será efetuada pela apresentação do documento Hardware Compatibility Test Report emitido especificamente para o modelo no sistema operacional ofertado, ou pela indicação no site da Microsoft;	□	
2. O equipamento deverá possuir certificado de homologação comprovando a compatibilidade do mesmo com, pelo menos, uma distribuição de Linux. A comprovação da compatibilidade será efetuada pela apresentação de documento emitido especificamente para o modelo ofertado;	□	
3. O equipamento, na configuração ofertada, deve possuir certificado de conformidade contra incidentes elétricos e de combustão dos materiais (IEC/EN 60950) e de imunidade eletromagnética (IEC/EN 61000), comprovado através de certificados ou do relatório de avaliação de conformidade nos moldes da portaria 170/2012 vigente do INMETRO, ou similar Internacional.	□	
18. OUTROS REQUISITOS		
1. Todas as partes do computador devem ter coloração neutra em gradações de preto ou prata, mantendo o padrão e cor;	□	
2. Deverá acompanhar maleta, pasta, mochila ou similar, para transporte com segurança, de tamanho suficiente para acondicionar o equipamento e seus acessórios (fonte de alimentação e cabos), confeccionada em material resistente e impermeável;	□	
3. Equipamento deverá ser novo, partes e peças, de primeiro uso, que deverão ser acondicionados em embalagem individual adequada, garantindo a máxima proteção durante o transporte e a armazenagem;	□	
4. Informar marca e modelo dos componentes utilizados na solução e apresentar prospecto com as características técnicas do equipamento e da placa mãe, processador, memórias, interfaces de rede, fonte de alimentação e unidade de armazenamento, incluindo especificação de marca, modelo, e outros elementos que de forma inequívoca identifiquem e constatem as configurações, possíveis expansões e upgrades, comprovando-os através de certificados, manuais técnicos, folders e demais literaturas técnicas editadas pelos fabricantes;	□	
5. Todos os equipamentos deverão ser entregues idênticos, ou seja, todos os componentes externos e internos deverão ter os mesmos modelo e marca;	□	
6. O equipamento proposto deverá estar em linha de produção na data da proposta, com todas as funcionalidades exigidas neste Termo plenamente disponíveis durante toda a vigência do contrato;	□	
7. Não serão aceitos produtos descontinuados por seus fabricantes, não devendo constar em listas de end-of-sale, end-of-support ou end-of-life do fabricante, ou seja, não poderão ter previsão de descontinuidade de fornecimento, suporte ou vida;	□	
8. O equipamento em pleno funcionamento deve atender à norma NBR 10152, quanto à emissão de ruído ambiente em escritórios de atividades diversas, conforme laudo técnico gerado por entidade especializada, que deverá acompanhar a proposta;	□	
9. Deverá ter compatibilidade eletromagnética e de radiofrequência IEC 61000 comprovado através de certificado ou relatório de avaliação de conformidade emitido por órgão credenciado pelo INMETRO ou internacional equivalente;	□	

DESCRIÇÃO	PARECER	OBSERVAÇÕES
10. Deverá ter compatibilidade com o padrão DMI 2.0 (Desktop Management Interface) ou mais recente da DMTF (Desktop Management Task Force), comprovado através de documentação expedida pelo fabricante do equipamento ou comprovação de que o fabricante do equipamento é membro do consórcio DMTF listado em uma das categorias BOARD ou LEADERSHIP;		
11. Deverá ter compatibilidade com a norma TPM Specification Version 2.0 especificadas pelo TCG (Trsted Computing Group), devendo o fabricante ser membro de uma das categorias listadas no site http://www.trustedcomputinggroup.org/about_tcg/tcg_members;		
12. Deverá ter compatibilidade com EPEAT na nova categoria Bronze, comprovada através de atestados ou certidões que mostrem que o equipamento é aderente ao padrão de eficiência energética EPEAT, emitido por instituto credenciado junto ao INMETRO ou equivalente internacional. 1. Será admitida como comprovação também, a indicação que o equipamento consta no site www.epeat.net na nova categoria Bronze;		
13. Não deverão conter substâncias perigosas como mercúrio (Hg), chumbo (Pb), cromo hexavalente (Cr(VI)), cádmio (Cd), bifenil polibromados (PBBs), éteres difenil-polibromados (PBDEs) em concentração acima da recomendada na diretiva RoHS (Restriction of Certain Hazardous Substances);		
14. Os equipamentos deverão pertencer à linha corporativa, não sendo aceitos equipamentos destinados ao uso da linha doméstica. 1. A comprovação deverá ser apresentada junto com a proposta;		
15. Não serão aceitos equipamentos que contenham lacres de violação de garantia por abertura, que inviabilizem a inspeção dos componentes a qualquer momento;		
16. **Garantia de 60 (sessenta) meses on-site**, prestado pelo fabricante ou pela assistência técnica autorizada do mesmo. **Para as baterias, será admitido garantia mínima de 36 (trinta e seis) meses**. Nos meses que restarem para completar o prazo total de garantia, a **FORNECEDORA** se obriga a dispor de bateria para venda em caso de eventual necessidade, e a realizar o suporte e assistências técnica sem ônus para a **CONTRATANTE**.		

3. Conclusão

Após análise da documentação apresentada pela licitante **TORINO INFORMÁTICA LTDA.**, referente ao **Item 3 – MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14"**, o conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica **OPINA** pela aceitabilidade do produto ofertado.

É o parecer.

Manaus, 30 de julho de 2025.

FRANCISCO ELVISLÂNIO PEREIRA
Agente de apoio - Manutenção/Informática

WALESKA GRACIEME ANDRADE MARQUES DE OLIVEIRA
Agente Técnico - Analista de Banco de Dados

Documento assinado eletronicamente por **Francisco Elvislânio Pereira**, **Agente de Apoio - Administrativo**, em 30/07/2025, às 14:02, conforme art. 1º, III, "b", da Lei 11.419/2006.

Documento assinado eletronicamente por **Waleska Gracieme Andrade Marques de Oliveira**, **Agente Técnico - Analista de Banco de Dados**, em 30/07/2025, às 14:02, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1686055** e o código CRC **02BD486F**.

Sistema de Cadastramento Unificado de Fornecedores - SICAF

Declaração

Declaramos para os fins exigidos na legislação, conforme documentação registrada no SICAF, que a situação do fornecedor no momento é a seguinte:

Dados do Fornecedor

CNPJ:	**03.619.767/0005-15**	DUNS®:	**920295254**
Razão Social:	**TORINO INFORMATICA LTDA..**		
Nome Fantasia:			
Situação do Fornecedor:	**Credenciado**	Data de Vencimento do Cadastro:	**07/07/2025**
Natureza Jurídica:	**SOCIEDADE EMPRESÁRIA LIMITADA**		
MEI:	**Não**		
Porte da Empresa:	**Demais**		

Ocorrências e Impedimentos

Ocorrência:	**Consta**
Impedimento de Licitar:	**Nada Consta**
Ocorrências Impeditivas indiretas:	**Nada Consta**
Vínculo com "Serviço Público":	**Nada Consta**

Níveis cadastrados:

Automática: a certidão foi obtida através de integração direta com o sistema emissor. Manual: a certidão foi inserida manualmente pelo fornecedor.

I - Credenciamento

II - Habilitação Juridica

III - Regularidade Fiscal e Trabalhista Federal

Receita Federal e PGFN	Validade:	**22/11/2025**	**Automática**
FGTS	Validade:	**07/07/2025**	**Automática**
Trabalhista **(http://www.tst.jus.br/certidao)**	Validade:	**30/11/2025**	**Automática**

IV - Regularidade Fiscal Estadual/Distrital e Municipal

Receita Estadual/Distrital	Validade:	**02/09/2025**
Receita Municipal	Validade:	**27/07/2025**

VI - Qualificação Econômico-Financeira

	Validade:	**30/06/2026**

REPÚBLICA FEDERATIVA DO BRASIL

CADASTRO NACIONAL DA PESSOA JURÍDICA

NÚMERO DE INSCRIÇÃO	COMPROVANTE DE INSCRIÇÃO E DE SITUAÇÃO CADASTRAL	DATA DE ABERTURA
03.619.767/0005-15 **FILIAL**		**13/06/2017**

NOME EMPRESARIAL
TORINO INFORMATICA LTDA..

TÍTULO DO ESTABELECIMENTO (NOME DE FANTASIA)	PORTE
********	**DEMAIS**

CÓDIGO E DESCRIÇÃO DA ATIVIDADE ECONÔMICA PRINCIPAL
46.51-6-01 - Comércio atacadista de equipamentos de informática

CÓDIGO E DESCRIÇÃO DAS ATIVIDADES ECONÔMICAS SECUNDÁRIAS
46.42-7-02 - Comércio atacadista de roupas e acessórios para uso profissional e de segurança do trabalho
46.49-4-01 - Comércio atacadista de equipamentos elétricos de uso pessoal e doméstico
46.47-8-01 - Comércio atacadista de artigos de escritório e de papelaria
46.73-7-00 - Comércio atacadista de material elétrico
46.69-9-99 - Comércio atacadista de outras máquinas e equipamentos não especificados anteriormente; partes e peças
77.33-1-00 - Aluguel de máquinas e equipamentos para escritórios
62.04-0-00 - Consultoria em tecnologia da informação
62.02-3-00 - Desenvolvimento e licenciamento de programas de computador customizáveis
62.01-5-01 - Desenvolvimento de programas de computador sob encomenda
82.19-9-01 - Fotocópias
46.19-2-00 - Representantes comerciais e agentes do comércio de mercadorias em geral não especializado
46.51-6-02 - Comércio atacadista de suprimentos para informática
95.11-8-00 - Reparação e manutenção de computadores e de equipamentos periféricos
52.11-7-99 - Depósitos de mercadorias para terceiros, exceto armazéns gerais e guarda-móveis
43.21-5-00 - Instalação e manutenção elétrica

CÓDIGO E DESCRIÇÃO DA NATUREZA JURÍDICA
206-2 - Sociedade Empresária Limitada

LOGRADOURO	NÚMERO	COMPLEMENTO
AV SEISCENTOS	**SN**	**QUADRA15 MODULO 10 SETOR INDUSTRIAL**

CEP	BAIRRO/DISTRITO	MUNICÍPIO	UF
29.161-399	**TERMINAL INTERMODAL DA SERRA**	**SERRA**	**ES**

ENDEREÇO ELETRÔNICO	TELEFONE
DENISE@GRUPOTORINO.COM.BR	**(15) 3233-9320/ (15) 3238-9520**

ENTE FEDERATIVO RESPONSÁVEL (EFR)
*****

SITUAÇÃO CADASTRAL	DATA DA SITUAÇÃO CADASTRAL
ATIVA	**13/06/2017**

MOTIVO DE SITUAÇÃO CADASTRAL

SITUAÇÃO ESPECIAL	DATA DA SITUAÇÃO ESPECIAL
********	********

Aprovado pela Instrução Normativa RFB nº 2.119, de 06 de dezembro de 2022.

Emitido no dia **01/07/2025** às **15:29:34** (data e hora de Brasília). Página: **1/1**

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JUCESP PROTOCOLO
2.424.015/25-9

DÉCIMA SÉTIMA (17) ALTERAÇÃO CONTRATUAL e CONSOLIDAÇÃO DAS CLÁUSULAS DO CONTRATO SOCIAL: EMPRESA: TORINO INFORMÁTICA LTDA.

Pelo presente instrumento particular de **ALTERAÇÃO CONTRATUAL**, os adiante assinados,

DENISE DO AMARAL RISSIO, brasileira, casada no regime de comunhão parcial de bens, empresária, nascida aos 02.11.1955, natural de Pindamonhangaba-SP., portadora da Cédula de Identidade RG n. 6.438.259 exp. pelo SSP/SP., e do CPF n.246.137.578-00, residente e domiciliada à Rua Angelina Parolina Zocca, 82 – Bairro de Santa Rosália – Sorocaba- SP., cep. n. 18090.090, e

RODRIGO DO AMARAL RISSIO, brasileiro, divorciado, empresário, nascido aos 29.06.1981, natural de São Paulo-SP., portador da Cédula de Identidade RG n. 27.954.969-6, exp. pelo SSP/SP., e do CPF n. 220.807.218-95 residente e domiciliado à Rua Angelina Parolina Zocca, 82 – Bairro de Santa Rosália – Sorocaba- SP., cep. n. 18090.090, e

ÚNICOS sócios da **sociedade empresária limitada**, que gira sob a denominação social **de TORINO INFORMÁTICA LTDA.**, com **MATRIZ** no endereço à **Rua Rita de Carvalho Monteiro, 110, 120 e 130 – Retiro São João – Sorocaba-SP., cep. nº 18085-750; FILIAL Nº 01,** com endereço na **Avenida Seiscentos, Terminal Intermodal da Serra, Serra/ES, cep. 29161-399**, podendo abrir novas filiais e sucursais em qualquer ponto do país, conforme contrato social firmado em 20.01.2000, arquivado na **JUCESP MATRIZ sob NIRE n. 35216195101** em 01.02.2000 e **FILIAL nº 01 registrada na JUCEES sob NIRE: 32900520864 em 13/06/2017, FILIAL Nº 02 registrada no NIRE 53920046715 em 09.04.2025,** e posteriores alterações contratuais, **sendo a última firmada aos 05.04.2025**, igualmente arquivada na **JUCESP sob nº 111.151/25-9 em 09.04.2025,** inscrita no **CNPJ MATRIZ sob n. 03.619.767/0001-91, CNPJ FILIAL n. 01 sob n. 03.619.767/0005-15, e FILIAL n. 02 sob n. 03.619.767/0006-04.**

Estando entre si, justos e combinados, resolvem alterar o referido contrato social, nos termos seguintes:

01) Os sócios, estando de comum acordo, **resolvem constituir uma FILIAL**, que terá o endereço à **Avenida São Bernardo do Campo, 175, Jardim Leocadia – Sorocaba-SP., cep. 18085-310. A filial ora constituída será designada como FILIAL nº 03.** A filial ora constituída terá os seguintes ramos de atividade: **PRINCIPAL: a) Comércio no atacado de Equipamentos e Produtos para Informática, Eletrônica, Elétrica, Programas de Computador e Produtos Similares e afins; SECUNDARIAS: b) Comercio de Toner Especial de Segurança; c) Prestação de Serviços de Gerenciamento, Desenvolvimento e Licenciamento de Programas para Computador Customizáveis, e Reparação e Manutenção de Computadores, Sistemas Periféricos, Sistemas de Computação, Equipamentos para Informática, Eletrônica, Elétrica, e Produtos Similares e afins; d) Comércio no atacado de Material para Escritório em Geral, papel e suprimentos para copiadoras reprográficas e heliográficas, e) Comércio no atacado de Materiais Hidráulicos e Elétricos; f) Comércio no atacado de Materiais para Construção em geral; g) Comércio no atacado de Tubos, registros, conexões e materiais para canalização de gases em geral; h) Manutenção de equipamentos para canalização de gases; i) Comércio no Atacado de Produtos de Segurança e E.P.I em geral; j) Locação de equipamentos e**

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 559

máquinas para escritórios; i) Consultoria em tecnologia da informação; m) Montagem, Reengenharia, projetos em equipamentos para impressão e equipamentos para informática em geral; n) Representação Comercial de Qualquer Espécie; o) Prestação de serviços de Cópias em Geral, xerográficas, ploter, encadernação e plastificação, Reprodução de Documentos e Impressão a Laser; p) Prestação de Serviços de Depósitos de Mercadorias para Terceiros (CNAE 5211-7/99); q) Assessoria e Consultoria em Informática (CNAE 6204-0/00); r) Suporte Técnico em Informática, Inclusive Instalação, Configuração e Manutenção (CNAE 6209-1/00; s) Instalação e Montagem de Aparelhos, Máquinas e Equipamentos, Inclusive Montagem (CNAE 6209-1/00; t) Fabricação de Equipamentos para Informática (CNAE 2621-3/00); A FILIAL ora constituída não terá destaque do capital social da sociedade.

02) Resolvem também alterar o ramo de atividade da MATRIZ, acrescentando às existentes, as seguintes novas atividades: a) Assessoria e Consultoria em Informática (CNAE 6204-0/00); b) Suporte Técnico em Informática, Inclusive Instalação, Configuração e Manutenção (CNAE 6209-1/00; c) Instalação e Montagem de Aparelhos, Máquinas e Equipamentos, Inclusive Montagem (CNAE 6209-1/00; d) Fabricação de Equipamentos para Informática (CNAE 2621-3/00). Em consequência altera-se a redação da cláusula 02, no item que descreve as atividades da MATRIZ, que passará a ser a seguinte:

.....

"MATRIZ: PRINCIPAL: a) Comércio no atacado de Equipamentos e Produtos para Informática, Eletrônica, Elétrica, Programas de Computador e Produtos Similares e afins, SECUNDARIAS: b) Comercio de Toner Especial de Segurança; c) Prestação de Serviços de Gerenciamento, Desenvolvimento e Licenciamento de Programas para Computador Customizáveis, e Reparação e Manutenção de Computadores, Sistemas Periféricos, Sistemas de Computação, Equipamentos para Informática, Eletrônica, Elétrica, e Produtos Similares e afins; d) Comércio no atacado de Material para Escritório em Geral, papel e suprimentos para copiadoras reprográficas e heliográficas, e) Comércio no atacado de Materiais Hidráulicos e Elétricos; f) Comércio no atacado de Materiais para Construção em geral; g) Comércio no atacado de Tubos, registros, conexões e materiais para canalização de gases em geral; h) Manutenção de equipamentos para canalização de gases; i) Comércio no Atacado de Produtos de Segurança e E.P.I em geral; j) Locação de equipamentos e máquinas para escritórios; l) Consultoria em tecnologia da informação; m) Montagem, Reengenharia, projetos em equipamentos para impressão e equipamentos para informática em geral; n) Representação Comercial de Qualquer Espécie; o) Prestação de serviços de Cópias em Geral, xerográficas, ploter, encadernação e plastificação, Reprodução de Documentos e Impressão a Laser; p) Prestação de Serviços de Depósitos de Mercadorias para Terceiros (CNAE 5211-7/99); q) Assessoria e Consultoria em Informática (CNAE 6204-0/00); r) Suporte Técnico em Informática, Inclusive Instalação, Configuração e Manutenção (CNAE 6209-1/00; s) Instalação e Montagem de Aparelhos, Máquinas e Equipamentos, Inclusive Montagem (CNAE 6209-1/00; t) Fabricação de Equipamentos para Informática (CNAE 2621-3/00)."

.....

03) A presente alteração modifica onde couber, as cláusulas do contrato de constituição da sociedade. Todas as demais cláusulas do contrato não modificadas pelo presente instrumento, permanecem em pleno vigor.

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04) Em seguida, **considerando-se as modificações promovidas pela presente alteração contratual, e ainda, que a sociedade pretende manter permanentemente atualizado** o seu instrumento de constituição, os sócios resolvem, neste ato, celebrar a presente **CONSOLIDAÇÃO DAS CLÁUSULAS DO CONTRATO SOCIAL**, nos seguintes termos:

Cláusula 01 - A **sociedade** que pelo presente contrato formam os adiante assinados, é **empresária limitada**, terá a sua **MATRIZ** com endereço à **Rua Rita de Carvalho Monteiro, 110, 120 e 130 – Retiro São João – Sorocaba-SP., cep. nº 18085-750; FILIAL Nº 01** com endereço na **Avenida Seiscentos, SN, Quadra 15, Módulo 10, Setor Industrial, Terminal Intermodal da Serra, Serra/ES, CEP: 29.161-399, FILIAL Nº 02, com endereço à Quadra 01 – Bloco F - Salas 1.502 e 1.503, Asa Norte - Edifício América Office Tower – Brasília – DF – Cep. 70711-905, e FILIAL Nº 03 com endereço à Avenida São Bernardo do Campo, 175, Jardim Leocadia – Sorocaba-SP., cep. 18085-310,** podendo abrir novas filiais e sucursais em qualquer ponto do país, conforme contrato social firmado em 20.01.2000, arquivado na **JUCESP MATRIZ sob NIRE n. 35216195101** em 01.02.2000 e **FILIAL nº 01 registrada na JUCEES sob NIRE: 32900520864 em 13/06/2017, FILIAL Nº 02 registrada no NIRE 53920046715 em 09.04.2025,** e posteriores alterações contratuais, **sendo a última firmada aos 05.04.2025**, igualmente arquivada na **JUCESP sob nº 111.151/25-9 em 09.04.2025**, inscrita no **CNPJ MATRIZ sob n. 03.619.767/0001-91, CNPJ FILIAL n. 01 sob n. 03.619.767/0005-15, e FILIAL n. 02 sob n. 03.619.767/0006-04,** dela fazendo parte como sócios quotistas, **Denise do Amaral Rissio** e **Rodrigo do Amaral Rissio**, supra qualificados:

Cláusula 02 - A sociedade terá os seguintes **ramos de atividade**:
MATRIZ: PRINCIPAL: a) Comércio no atacado de Equipamentos e Produtos para Informática, Eletrônica, Elétrica, Programas de Computador e Produtos Similares e afins, SECUNDARIAS: b) Comercio de Toner Especial de Segurança; c) Prestação de Serviços de Gerenciamento, Desenvolvimento e Licenciamento de Programas para Computador Customizáveis, e Reparação e Manutenção de Computadores, Sistemas Periféricos, Sistemas de Computação, Equipamentos para Informática, Eletrônica, Elétrica, e Produtos Similares e afins; d) Comércio no atacado de Material para Escritório em Geral, papel e suprimentos para copiadoras reprográficas e heliográficas, e) Comércio no atacado de Materiais Hidráulicos e Elétricos; f) Comércio no atacado de Materiais para Construção em geral; g) Comércio no atacado de Tubos, registros, conexões e materiais para canalização de gases em geral; h) Manutenção de equipamentos para canalização de gases; i) Comércio no Atacado de Produtos de Segurança e E.P.I em geral; j) Locação de equipamentos e máquinas para escritórios; l) Consultoria em tecnologia da informação; m) Montagem, Reengenharia, projetos em equipamentos para impressão e equipamentos para informática em geral; n) Representação Comercial de Qualquer Espécie; o) Prestação de serviços de Cópias em Geral, xerográficas, ploter, encadernação e plastificação, Reprodução de Documentos e Impressão a Laser; p) Prestação de Serviços de Depósitos de Mercadorias para Terceiros (CNAE 5211-7/99); q) Assessoria e Consultoria em Informática (CNAE 6204-0/00); r) Suporte Técnico em Informática, Inclusive Instalação, Configuração e Manutenção (CNAE 6209-1/00; s) Instalação e Montagem de Aparelhos, Máquinas e Equipamentos, Inclusive Montagem (CNAE 6209-1/00; t) Fabricação de Equipamentos para Informática (CNAE 2621-3/00).

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FILIAL Nº 01: PRINCIPAL: a) Comércio no atacado de Equipamentos e Produtos para Informática, Eletrônica, Elétrica, Programas de Computador e Produtos Similares e afins; SECUNDARIAS: b) Comercio de Toner Especial de Segurança; c) Prestação de Serviços de Gerenciamento, Desenvolvimento e Licenciamento de Programas para Computador Customizáveis, e Reparação e Manutenção de Computadores, Sistemas Periféricos, Sistemas de Computação, Equipamentos para Informática, Eletrônica, Elétrica, e Produtos Similares e afins; d) Comércio no atacado de Material para Escritório em Geral, papel e suprimentos para copiadoras reprográficas e heliográficas, e) Comércio no atacado de Materiais Hidráulicos e Elétricos; f) Comércio no atacado de Materiais para Construção em geral; g) Comércio no atacado de Tubos, registros, conexões e materiais para canalização de gases em geral; h) Manutenção de equipamentos para canalização de gases; i) Comércio no Atacado de Produtos de Segurança e E.P.I em geral; j) Locação de equipamentos e máquinas para escritórios; l) Consultoria em tecnologia da informação; m) Montagem, Reengenharia, projetos em equipamentos para impressão e equipamentos para informática em geral; n) Representação Comercial de Qualquer Espécie; o) Prestação de serviços de Cópias em Geral, xerográficas, ploter, encadernação e plastificação, Reprodução de Documentos e Impressão a Laser; p) Prestação de Serviços de Depósitos de Mercadorias para Terceiros (CNAE 5211-7/99); e

FILIAL Nº 02: PRINCIPAL: a) Prestação de Serviços de Representantes Comerciais e Agentes do Comercio de Mercadorias em Geral, não Especializado (CNAE 4619-2/00); SECUNDÁRIAS: Prestação de Serviços de Reparação e Manutenção de Equipamentos Eletroeletrônicos de Uso Pessoal e Domestico (CNAE 9521-5/00); c) Prestação de Serviços de Reparação e Manutenção de Equipamentos de Comunicação (CNAE 9512-6/00); d) Prestação de Serviços de Reparação e Manutenção de Computadores e de Equipamentos Periféricos (CNAE 9511-8/00); e) Prestação de Serviços de Reparação de Equipamentos e Produtos não Especificados Anteriormente (CNAE 3319-8/00).

FILIAL Nº 03: PRINCIPAL: a) Comércio no atacado de Equipamentos e Produtos para Informática, Eletrônica, Elétrica, Programas de Computador e Produtos Similares e afins; SECUNDARIAS: b) Comercio de Toner Especial de Segurança; c) Prestação de Serviços de Gerenciamento, Desenvolvimento e Licenciamento de Programas para Computador Customizáveis, e Reparação e Manutenção de Computadores, Sistemas Periféricos, Sistemas de Computação, Equipamentos para Informática, Eletrônica, Elétrica, e Produtos Similares e afins; d) Comércio no atacado de Material para Escritório em Geral, papel e suprimentos para copiadoras reprográficas e heliográficas, e) Comércio no atacado de Materiais Hidráulicos e Elétricos; f) Comércio no atacado de Materiais para Construção em geral; g) Comércio no atacado de Tubos, registros, conexões e materiais para canalização de gases em geral; h) Manutenção de equipamentos para canalização de gases; i) Comércio no Atacado de Produtos de Segurança e E.P.I em geral; j) Locação de equipamentos e máquinas para escritórios; l) Consultoria em tecnologia da informação; m) Montagem, Reengenharia, projetos em equipamentos para impressão e equipamentos para informática em geral; n) Representação Comercial de Qualquer Espécie; o) Prestação de serviços de Cópias em Geral, xerográficas, ploter, encadernação e plastificação, Reprodução de Documentos e Impressão a Laser; p) Prestação de Serviços de Depósitos de Mercadorias para Terceiros (CNAE 5211-7/99); q) Assessoria e Consultoria em Informática (CNAE 6204-0/00); r) Suporte Técnico em Informática, Inclusive Instalação, Configuração e Manutenção (CNAE 6209-1/00; s) Instalação e Montagem de Aparelhos, Máquinas e

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Equipamentos, Inclusive Montagem (CNAE 6209-1/00; t) Fabricação de Equipamentos para Informática (CNAE 2621-3/00);

Cláusula 03 - A sociedade girara sob a **denominação social de TORINO INFORMÁTICA LTDA.,** da qual os sócios e administradores usarão somente em negócios da firma, nos termos deste contrato e de conformidade com a Lei.

Cláusula 04 - A **administração da sociedade, a sua representação ativa e passiva, e a assinatura pela sociedade,** serão exercidas **única e exclusivamente** pela sócia **DENISE DO AMARAL RISSIO**, que poderá receber retiradas pró-labore, nos termos do contrato social da empresa, e nos limites da Lei;

§ primeiro – Os administradores declaram sob as penas da Lei, que não estão impedidos de exercer a administração da sociedade, por lei especial ou em virtude de condenação criminal, ou por se encontrarem sob os efeitos dela, a pena que vede, ainda que temporariamente, o acesso a cargos públicos; ou por crime falimentar, de prevaricação, peita ou suborno, concussão, peculato, ou contra a economia popular, contra o sistema financeiro nacional, contra normas de defesa da concorrência, contra as relações de consumo, fé pública ou a propriedade, nos termos do parágrafo único do artigo 1.011 da Lei nº 10.406/2002 (Código Civil);

§ segundo – É vedado aos administradores fazer uso da firma para a prestação de garantia, fiança, aval ou a qualquer outro título de favor, em negócios que sejam estranhos ao objeto social da sociedade;

§ terceiro – Os administradores respondem solidariamente perante a sociedade e aos terceiros prejudicados, por culpa no desempenho de suas funções.

Cláusula 05 - A sociedade poderá nomear administradores não sócios, designadas em ato em separado ou no contrato social;

§ único – A designação dos administradores não sócios dependerá da aprovação da unanimidade dos sócios, enquanto o capital não estiver integralizado, e de dois terços, no mínimo, após a integralização do capital, nos termos do artigo 1.061 do Decreto nº 10.406/2002 (código Civil);

Cláusula 06 - O **capital social** da sociedade será na importância de **R$ 2.000.000,00,** (dois milhões mil reais), dividido em **2.000.000,** (dois milhões) de quotas no valor nominal de **R$ 1,00** (um real) cada uma, totalmente integralizado neste ato, à vista, em moeda corrente no país, com recursos particulares dos sócios na seguinte proporção: A sócia **DENISE DO AMARAL RISSIO** entrará com **R$ 1.600.000,00** (um milhão e seiscentos mil reais), ou **1.600.000** (um milhão e seiscentas mil) quotas, e o sócio **RODRIGO DO AMARAL RISSIO** entrará com **R$ 400.000,00** (quatrocentos mil reais), ou **400.000** (quatrocentas mil) quotas. Em consequência a **composição do capital social** da empresa será a seguinte:

a) Denise do Amaral Rissio.....80%.....1.600.000 quotas.....R$ 1.600.000,00
b) Rodrigo do Amaral Rissio.....20%..... 400.000 quotas.....R$ 400.000,00
totais.....100%.....2.000.000 quotas.....R$ 2.000.000,00

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§ único: Fica entendido que, a responsabilidade de cada sócio é restrita ao valor de suas quotas, mas todos respondem solidariamente pela integralização do capital social, nos termos do artigo 1.052 da Lei nº 10.406/2002 (Código Civil);

Cláusula 07 - As **quotas da sociedade são individuais** e não poderão ser cedidas ou transferidas sem o expresso consentimento da sociedade, cabendo o direito de preferência para adquiri-las, ao sócio remanescente;

Cláusula 08 - Caso qualquer dos sócios **desejar retirar-se da sociedade,** devera comunicar a sua decisão aos demais mediante notificação escrita, com antecedência mínima de trinta (30) dias, sendo seus haveres apurados mediante Balanço especial, levantado no termino desse prazo, e pagos conforme acordo que será firmado entre as partes; levando-se em conta os interesses da sociedade e dos sócios, nesta ordem;

Cláusula 09 - Fica entendido que até dois anos depois de averbada a modificação do contrato, responde o cedente solidariamente com o cessionário, perante a sociedade e terceiros, pelas obrigações que tinha como sócio, nos termos do § único do artigo 1.003 da Lei 10.406/2002 – (Código Civil);

Cláusula 10 - Na hipótese da totalidade das quotas sociais **concentrarem-se em nome de um único sócio,** a sociedade não se dissolvera. O sócio remanescente devera admitir um novo sócio dentro do prazo de cento e oitenta (180) dias para recompor-se o numero mínimo de sócios á sociedade. Na hipótese da não admissão dentro do prazo estipulado nesta clausula, a sociedade se extinguirá;

Cláusula 11 - Ressalvado o disposto no parágrafo único da clausula 05 deste instrumento, as deliberações dos sócios serão tomadas;

a) Pelos votos correspondentes, no mínimo, a três quartos do capital social, nas decisões que versem sobre a modificação do contrato social e a incorporação, fusão, dissolução ou extinção da sociedade ou a cessação do estado de liquidação;

b) Pelos votos correspondentes a mais da metade do capital social, nas decisões que versem sobre a designação dos administradores, quando efetuada em ato em separado, a destituição dos administradores, o modo da remuneração dos administradores, quando não estabelecidas em contrato, e o pedido de concordata;

c) Pela maioria dos votos presentes às reuniões, para a aprovação das contas da administração, nomeação e destituição de liquidantes e o julgamento de suas contas, e para os demais casos previstos na Lei e no Contrato, se este não exigir maioria mais elevada;

§ primeiro - Nos termos do § quinto do artigo 1.072 da Lei 10.406/2002, as deliberações tomadas de conformidade com a Lei e o contrato vinculam todos os sócios, ainda que ausentes ou dissidentes;

§ segundo - **O sócio dissidente da deliberação social poderá manifestar a sua discordância**, no prazo subseqüente de trinta (30) dias do registro da alteração, com o exercício de seu direito de retirada, procedendo-se ao pagamento de seus direitos, na forma estabelecida neste contrato;

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Cláusula 12 - na hipótese de um ou mais sócios realizarem atos de inegável gravidade, que coloquem em risco a continuidade da empresa, a maioria dos sócios, representativa de mais da metade do capital social, poderá excluí-los da sociedade, mediante alteração no contrato social, nos termos do artigo 1.085, ressalvado o disposto no artigo 1.030, ambos da Lei 10.406/2002;

§ único - A exclusão prevista nesta cláusula somente poderá ser determinada em reunião especialmente convocada para esse fim, com a ciência do acusado em tempo hábil para permitir ou seu comparecimento, e o exercício de seu direito de defesa;

Cláusula 13 - A duração da sociedade será **por tempo indeterminado**;

Cláusula 14 - Para suas despesas particulares, a título de **retirada pró-labore**, cada administrador retirara mensalmente a quantia equivalente ao máximo permitido pela Legislação do Imposto de Renda como despesa redutível; entretanto, essa quantia poderá ser alterada pelo acordo entre os sócios, e o respectivo assentamento nos livros contábeis e fiscais da empresa, de conformidade com as normas legais em vigor;

Cláusula 15 - Ao fim de cada ano social, em 31 de dezembro, efetuar-se-á o levantamento do **Balanço Geral do Ativo e do Passivo**, e os Lucros ou Prejuízos verificados serão distribuídos ou suportados pelos sócios, na proporção de suas quotas de capital; A destinação do resultado será decidida pelos sócios, em cada exercício;

§ único - Havendo acordo entre os sócios nos termos deste contrato, a distribuição dos lucros poderá ser realizada sem observar-se a proporcionalidade do percentual de cada sócio no montante do capital social;

Cláusula 16 - Até o dia 30 de abril do ano seguinte ao do encerramento do exercício, os administradores deverão apresentar aos demais sócios a prestação de contas de sua administração, apresentando-lhe o Balanço Patrimonial, o inventário de mercadorias e a Demonstração do Resultado econômico, por reunião que deverá ser convocada nos termos deste contrato;

Cláusula 17 - Fica entendido que os sócios poderão, a qualquer tempo, examinar os livros e documentos, o estado de caixa e da carteira da sociedade, mediante pedido encaminhado ao administrador, com prazo mínimo de dez (10) dias. O exame deverá ser realizado na sede da sociedade.

Cláusula 18 - **Qualquer dos sócios poderá retirar-se da sociedade,** mediante notificação aos demais sócios, com antecedência mínima de sessenta (60) dias. Os seus haveres serão apurados mediante Balanço especial que será levantado para esse fim, e pagos conforme acordo que será firmado entre as partes, considerando-se no acordo de pagamentos, os interesses da sociedade e dos sócios, nesta ordem;

Cláusula 19 - **Na hipótese da dissolução da sociedade**, qualquer dos sócios terá preferência na aquisição do acervo social, em igualdade de condições com terceiros interessados, fixando-se o prazo de trinta (30) dias para que os interessados se manifestem expressamente sobre tal preferência. Findo esse prazo, ou caso haja renúncia expressa dos sócios sobre tal condição, eleger-se-á por maioria de quotas o liquidante que no prazo máximo de um (01) ano levara a termo a liquidação, dela prestando contas aos demais sócios, na forma

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da legislação pertinente a matéria. O liquidante perceberá remuneração pelo seu trabalho, conforme acordo entre os sócios;

Cláusula 20 - No caso do falecimento de qualquer um dos sócios, ocorrerá a liquidação de suas quotas do capital social, conforme dispõe o "caput" do artigo 1.028 do Código Civil, e atendidas as seguintes condições:

§ primeiro - Da mesma forma prevista naquele no "caput" do artigo 1.028, fica estabelecido entre os sócios que, na hipótese da cessação da sociedade conjugal do(s) sócio(s), ou na ocorrência da incapacidade física ou mental de qualquer dos sócios, devidamente comprovada, e que não permita a continuidade de suas obrigações e funções na sociedade, igualmente ocorrerá a liquidação de suas quotas sociais.

§ segundo - Também fica entendido que em todas as hipóteses previstas no "caput" e no seu Parágrafo primeiro, a sociedade não se dissolverá, continuando as suas atividades normais, adaptando o seu tipo societário à nova composição social, se necessário for.

§ terceiro - Em todas essas situações acima descritas, os herdeiros do sócio falecido, ou os titulares dos direitos do sócio incapaz ou divorciado, terão direito aos créditos correspondentes aos valores das quotas sociais que eram de propriedade do "de cujus", ou sócio incapaz ou divorciado, cujo montante será apurado mediante Balanço Contábil especial que será levantado para esse fim, na data da ocorrência do fato, apurando-se o valor do patrimônio líquido contábil, o qual deverá ter anuência de todos os sócios remanescentes, sobre o qual será calculado o valor proporcional às quotas cabíveis aos herdeiros ou aos titulares dos direitos do sócio incapaz ou divorciado, e que serão pagas em até 60 (sessenta) parcelas de igual valor, mensais e consecutivas, vencendo-se a primeira 60 (sessenta) dias após a data do fato.

Cláusula 21 - **Qualquer dos sócios poderá convocar Reuniões**, em caso de urgência, discussão de assunto relevante ou de importância para a sociedade.

Cláusula 22 - A reunião realizada para a resolução de outros assuntos de interesse da sociedade, previstos ou não neste instrumento, será instalada com a participação de sócios que componham, em primeira convocação, três quartos do capital social da sociedade, e em segunda convocação, com qualquer número, nos termos do artigo 1.074 e parágrafos da Lei 10.406/2002 (Código Civil), devendo ser transcrita em ata, firmada por todos os presentes, e da qual deverá ser dada ciência aos sócios ausentes;

§ primeiro - A convocação das Reuniões deverá ser efetuada na forma do artigo 1.152 e parágrafos da Lei 10.406/2002 – (Código Civil), ou através de carta com A. R. aos sócios, via protocolo na empresa, quando serão informados os assuntos objetos da pauta;

§ segundo - Dispensam-se as formalidades da convocação, previstas no artigo 1.152 e parágrafos da Lei 10.406/2002 (Código Civil), quando todos os sócios comparecerem ou se declararem, por escrito, cientes do local, data, hora e ordem do dia.

§ terceiro - A reunião tornar-se-á dispensável quando todos os sócios decidirem por escrito, sobre a matéria que seria delas objeto.

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Cláusula 23 - Os sócios declaram sob as penas da Lei, que estão em pleno gozo de sua capacidade civil, podendo exercer a atividade de empresário, não estando incursos em nenhum dos crimes previstos em Lei, que os impeçam de participar desta sociedade.

Cláusula 24 - As dúvidas e omissões originadas do presente contrato, serão decididas com a aplicação subsidiária das normas da Lei nº 6.404/76 (Lei das Sociedades Anônimas), nas demais disposições da Lei 10.406/02, e em outros textos legais que lhes forem aplicáveis;

Cláusula 25 - Fica desde já eleito o **Foro da Comarca de Sorocaba - SP** para julgamento de qualquer ação fundada no presente instrumento, com renuncia expressa de qualquer outro, por mais privilegiado que seja;

E como assim contratam, obrigam-se a cumprir fielmente em todos os seus termos as cláusulas acima, e fazem o presente instrumento na presença das duas testemunhas adiante, em três vias de igual teor, que serão registradas na **JUCESP**, na forma da Lei.

Sorocaba, 12 de junho de 2.025

DENISE DO AMARAL RISSIO

RODRIGO DO AMARAL RISSIO:22080721895

RODRIGO DO AMARAL RISSIO

Testemunhas:

Adriana Penteadura Martins
RG. nº 24.637.515-2 - SSP/SP

Márcia Dini Oliveira de Mello
RG nº 13.809.062-2 exp. pelo SSP/SP

Visto em 12 de junho de 2.025.

Dr. José Dini Filho – OAB-SP 44.426.

JUCESP 03 JUL. 2025 SECRETARIA DE DESENVOLVIMENTO ECONÔMICO - JUCESP
ELOIZIO C. SOARES JUNIOR SECRETÁRIO GERAL EM EXERCÍCIO
CERTIFICO O REGISTRO SOB O NÚMERO 229.663/25-4
JUCESP

JUCESP 03 JUL. 2025 SECRETARIA DE DESENVOLVIMENTO ECONÔMICO - JUCESP NIRE FILIAL
ELOIZIO C. SOARES JUNIOR SECRETÁRIO GERAL EM EXERCÍCIO
CERTIFICO O REGISTRO SOB O NÚMERO 3590685347-7
JUCESP

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 567

Pedro Bento Alves Filho
OFICIAL / TABELIÃO DE NOTAS
R. BONIFÁCIO DE OLIVEIRA CASSU, 204
TEL/FAX. (15) 3235-5200
DISTRITO DE ÉDEN

DISTRITO DE ÉDEN
SOROCABA - SP
COMARCA DE SOROCABA
PEDRO BENTO ALVES FILHO

Nicolly Almeida Barreira
Escrevente Autorizada

Livro nº 193 / Página nº 394

PRIMEIRO TRASLADO

PROCURAÇÃO BASTANTE QUE FAZ:

TORINO INFORMÁTICA LTDA.

NA FORMA ABAIXO:

S A I B A M, quantos este público instrumento de procuração bastante virem que no ano de dois mil e vinte e cinco (2025), aos oito (08) dias do mês de julho, neste Oficial de Registro Civil das Pessoas Naturais e Tabelião de Notas do Distrito de Éden, Município e Comarca de Sorocaba, Estado de São Paulo, perante mim, ESCREVENTE AUTORIZADA, que este subscreve, compareceu como outorgante ***TORINO INFORMÁTICA LTDA.***, pessoa jurídica legalmente constituída como Sociedade empresária limitada, com sede nesta cidade, na Rua Rita de Carvalho Monteiro, nº 110, 120 e 130, Bairro Retiro São João, inscrita no CNPJ/MF sob o nº 03.619.767/0001-91, com seu Contrato Social Consolidado em sua 17ª Alteração Contratual, datada de 12 de junho de 2025, registrada na Junta Comercial do Estado de São Paulo - JUCESP sob o nº 229.663/25-4, em sessão de 03 de julho de 2025, cujas cópias reprográficas devidamente autenticadas, juntamente com a ficha cadastral simplificada emitida via internet pela mesma JUCESP, aos 08 de julho de 2025, autenticidade nº 271554406, ficam nestas Notas arquivadas em pasta própria de nº 148, fls. 033/040, estando neste ato representada conforme poderes contidos na cláusula 04, da referida Alteração Contratual por sua única sócia, ***DENISE DO AMARAL RISSIO***, portadora da CI. RG. nº 6.438.259-SSP/SP e inscrita no CPF/MF sob o nº 246.137.578-00, brasileira, casada, empresária, residente e domiciliada nesta cidade, na Rua Angelina Parolina Zocca, nº 82, Bº Santa Rosália; declarando ela sob inteira responsabilidade de lei civil e criminal, não haver qualquer outra alteração contratual posterior a acima mencionada e arquivada nestas Notas, que altere a representação da citada empresa, reconhecida como a própria de mim, ESCREVENTE AUTORIZADA, através dos documentos acima citados e ora exibidos do que dou fé. E perante mim por ela me foi dito que por este público instrumento e na melhor forma de direito, nomeia e constitui seus bastante procuradores: o sócio, Sr. ***RODRIGO DO AMARAL RISSIO***, portador da CI. RG. nº 27.954.969-6-SSP/SP e inscrito no CPF/MF sob o nº 220.807.218-95, brasileiro, solteiro, maior, comerciante, residente e domiciliado nesta cidade, na rua Angelina Parolina Zocca, nº 82, Bº Santa Rosália; o Sr. ***CLAUDIO RISSIO***, portador da CI.RG. nº 6.171.569-SSP/SP e inscrito no CPF/MF. sob o nº 012.273.898/50, brasileiro, casado, perito judicial, residente e domiciliado nesta cidade, na Rua Angelina Parolina Zocca, n. 82, Bairro Santa Rosália; e ***ISAIAS DE OLIVEIRA CAMPOS***, portador da cédula de identidade RG nº 9.371.605-9-SSP/SP e inscrito no CPF/MF sob o nº 010.631.818-79, brasileiro, casado, administrador, residente e domiciliado nesta cidade, na Rua Renato Lucci, nº 171, Jardim das Estrelas, a quem confere poderes para **agindo em conjunto ou isoladamente, independentemente da ordem de nomeação**, representar a

Nicolly Almeida Barreira
Escrevente Autorizada
R Bonifacio De Oliveira Cassu 204 Eden - Sorocaba - SP
Fone: 15-3235-5200
OFICIAL DE REGISTRO CIVIL DAS PESSOAS NATURAIS E TABELIÃO DE NOTAS DO DISTRITO DE ÉDEN - COMARCA DE SOROCABA/SP
Rua Bonifácio de Oliveira Cassu - 204
AUTENTICAÇÃO
AU1139AD0227145

1139260215533 4.000046820-4

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 568

OFICIAL DE REGISTRO CIVIL DAS PESSOAS NATURAIS E TABELIÃO DO DISTRITO DE ÉDEN, COMARCA DE SOROCABA/SP
Pedro Bento Alves Filho
OFICIAL / TABELIÃO
R. BONIFÁCIO DE OLIVEIRA CASSÚ, 294
TEL/FAX. (15) 3235-5200
CNPJ/MF 50.805.266/0001-60
DISTRITO DE ÉDEN

REPÚBLICA FEDERATIVA DO BRASIL
Estado de São Paulo

outorgante em Licitações, Concorrências Públicas, Concorrências Particulares, Tomadas de Preços, e Vendas em geral, públicas e particulares, aceitar/recusar adesões a Atas de Registro de Preços e o que de direito, podendo para tanto dito procurador, requerer, apresentar, juntar e retirar documentos, prestar compromissos, fazer declarações, satisfazer toda e qualquer exigência dos órgãos, apresentar documentos para credenciamento, apresentar propostas de preços, participando de todos os atos decorrentes de licitação, participar do ato da abertura de envelopes podendo ainda, dito procurador, dar opiniões, ofertar valores em pregões, falar em nome da firma outorgante, fazer as declarações necessárias, apresentar propostas, concordar e/ou discordar com atos, acompanhar processo, apresentar provas, satisfazer exigências, preencher guias e formulários perante aos órgãos públicos Federais, Estaduais, Municipais e autarquias, podendo assinar e requerer o que de direito e preciso for, inclusive assinar contratos,juntar e retirar documentos; podendo ainda, representá-la nas repartições públicas em geral, autarquias, de economia mista, Tabeliães de Protestos, Receita Federal, Ministério do Trabalho, JUCESP, Posto Fiscal, Procuradoria da Fazenda Nacional, Fazenda Nacional (INSS), Ministério do Trabalho, Sindicatos de qualquer natureza, concessionárias de serviços públicos, Prefeituras e onde mais for preciso, podendo assinar e requerer o que de direito, prestar e receber informações, alegar, transigir, firmar acordos e compromissos; enfim, praticar todos os demais atos necessários ao fiel cumprimento da presente procuração, podendo inclusive substabelecer no todo ou em parte, **a qual terá validade por um periodo de 03 (três) anos, contados a partir desta data.** E, de como assim disse e me pediu, lhe lavrei este instrumento o qual feito, lhe sendo lido em voz alta, aceita e assina. Eu, (a.) NICOLLY ALMEIDA BEZERRA, ESCREVENTE AUTORIZADA, digitei. Eu, (a.) PEDRO BENTO ALVES FILHO, Oficial/Tabelião, subscrevo e assino em público e raso. (aa) DENISE DO AMARAL RISSIO. NICOLLY ALMEIDA BEZERRA. PEDRO BENTO ALVES FILHO. NADA MAIS. Selada na forma da Lei. Trasladada em seguida e está conforme. O REFERIDO É VERDADE E DOU FÉ.

Selo digital: 1117971TR00000002135644250 (Para conferir a procedência deste documento efetue a leitura do QR Code impresso ou acesse o endereço eletrônico https://selodigital.tjsp.jus.br).

Em test° _____ da verdade.

NICOLLY ALMEIDA BEZERRA
ESCREVENTE AUTORIZADA

Nicolly Almeida Bezerra
Escrevente Autorizada

OFICIAL DE REGISTRO CIVIL DAS PESSOAS NATURAIS E TABELIÃO DO DISTRITO DE ÉDEN, COMARCA DE SOROCABA/SP
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Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 569

Pedro Bento Alves Filho
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R. BONIFÁCIO DE OLIVEIRA CASSÚ, 204
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CNPJ/MF 50.805.266/0001-60
DISTRITO DE EDEN

Nicolly Almeida Bezerra
Escrevente Autorizada

DISTRITO DE ÉDEN
SOROCABA - SP
COMARCA DE SOROCABA
PEDRO BENTO ALVES FILHO

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Ao Oficial R$ 186,30
Ao Estado R$ 53,52
Sec.Faz. R$ 36,62
ISS R$ 3,76
Min.Pub. R$ 9,04
R.Civil R$ 9,51
Tr.Justiça R$ 12,92
Sta.Casa R$ 1,69
Total R$ 315,95
Recolhidos p/guia nº 154/2025

Nicolly Almeida Bezerra
Escrevente Autorizada

OFICIAL DE REGISTRO CIVIL DAS PESSOAS NATURAIS E TABELIÃO DE NOTAS DO DISTRITO DE ÉDEN, COMARCA DE SOROCABA
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R. BONIFÁCIO DE OLIVEIRA CASSÚ, 204
TEL/FAX. (15) 3235-5200
CNPJ/MF 50.805.266/0001-60
DISTRITO DE EDEN

AU1139A[illegible]227162

SOROCABA 08 JUL. 2025

REPÚBLICA FEDERATIVA DO BRASIL

VALIDO EM TODO TERRITÓRIO NACIONAL, QUALQUER ADULTERAÇÃO, RASURA OU EMENDA, INVALIDA ESTE DOCUMENTO

União Internacional do Notariado Latino (Fundado em 1948)

1139260215533 4.000046821-2

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 570

EM BRANCO

EM BRANCO



REPÚBLICA FEDERATIVA DO BRASIL
MINISTÉRIO DAS CIDADES
DEPARTAMENTO NACIONAL DE TRÂNSITO
CARTEIRA NACIONAL DE HABILITAÇÃO

SP

NOME
DENISE DO AMARAL RISSIO

DOC. IDENTIDADE / ÓRG. EMISSOR / UF
64386269 SSP/SP

CPF
246.137.578-00

DATA NASCIMENTO
02/11/1965

FILIAÇÃO
ABEL FERNANDES DO AMARAL
DIRCE MARTINS DO AMARAL

PERMISSÃO
[redacted]

ACC
[redacted]

CAT. HAB.
B

Nº REGISTRO
01546895123

VALIDADE
27/05/2024

1ª HABILITAÇÃO
15/01/1975

OBSERVAÇÕES

LOCAL
SOROCABA, SP

DATA EMISSÃO
01/06/2019

SÃO PAULO

VÁLIDA EM TODO O TERRITÓRIO NACIONAL
18749465O9

PROIBIDO PLASTIFICAR
18749465O9

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 572

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MINISTÉRIO DA FAZENDA
Secretaria da Receita Federal

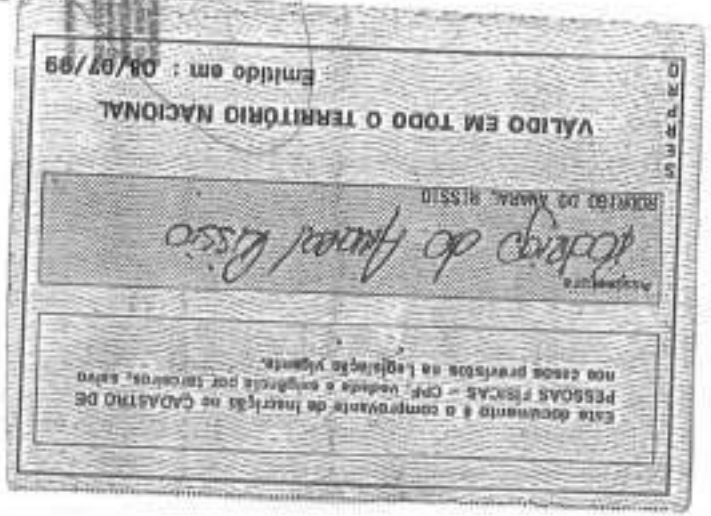
CPF – CADASTRO DE PESSOAS FÍSICAS

Nome
RODRIGO DO AMARAL RISSIO

Nº de Inscrição
220807218-95

Data do Nascimento
29/06/81


1139AC11393B


VÁLIDO EM TODO O TERRITÓRIO NACIONAL

Emitido em : 08/07/99

RODRIGO DO AMARAL RISSIO

Assinatura

Rodrigo do Amaral Rissio

Este documento é o comprovante de inscrição no CADASTRO DE PESSOAS FÍSICAS – CPF. Verifique a exatidão por ocasião de uso, sendo nos casos previstos na legislação vigente.

1 9 NOV 2012


REPÚBLICA FEDERATIVA DO BRASIL
ESTADO DE SÃO PAULO
SECRETARIA DA SEGURANÇA PÚBLICA 1200-5
INSTITUTO DE IDENTIFICAÇÃO RICARDO GUMBLETON DAUNT

Rodrigo do Amaral Rissio
ASSINATURA DO TITULAR

UMI

CARTEIRA DE IDENTIDADE


1139AC11393Z


VÁLIDA EM TODO O TERRITÓRIO NACIONAL

27.954.969-6 DATA DE EXPEDIÇÃO 25/SET/91

RODRIGO DO AMARAL RISSIO

CLAUDIO RISSIO

E DENISE DO AMARAL RISSIO

S.PAULO -SP 29/JUN/1981

SÃO PAULO SP
MOOCA
CN#LV.A022/FLS.0231/N.025996

LEI Nº 7.116 DE 29/08/83

1 9 NOV 2012

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (17111813) SEI 2025.001317 / pg. 574

MINISTÉRIO DA FAZENDA
Secretaria da Receita Federal do Brasil
Procuradoria-Geral da Fazenda Nacional

CERTIDÃO NEGATIVA DE DÉBITOS RELATIVOS AOS TRIBUTOS FEDERAIS E À DÍVIDA ATIVA DA UNIÃO

Nome: TORINO INFORMATICA LTDA..
CNPJ: 03.619.767/0001-91

Ressalvado o direito de a Fazenda Nacional cobrar e inscrever quaisquer dívidas de responsabilidade do sujeito passivo acima identificado que vierem a ser apuradas, é certificado que não constam pendências em seu nome, relativas a créditos tributários administrados pela Secretaria da Receita Federal do Brasil (RFB) e a inscrições em Dívida Ativa da União (DAU) junto à Procuradoria-Geral da Fazenda Nacional (PGFN).

Esta certidão é válida para o estabelecimento matriz e suas filiais e, no caso de ente federativo, para todos os órgãos e fundos públicos da administração direta a ele vinculados. Refere-se à situação do sujeito passivo no âmbito da RFB e da PGFN e abrange inclusive as contribuições sociais previstas nas alíneas 'a' a 'd' do parágrafo único do art. 11 da Lei nº 8.212, de 24 de julho de 1991.

A aceitação desta certidão está condicionada à verificação de sua autenticidade na Internet, nos endereços <http://rfb.gov.br> ou <http://www.pgfn.gov.br>.

Certidão emitida gratuitamente com base na Portaria Conjunta RFB/PGFN nº 1.751, de 2/10/2014.
Emitida às 18:12:56 do dia 11/04/2025 <hora e data de Brasília>.
Válida até 08/10/2025.
Código de controle da certidão: **29BA.AF6F.7115.B2ED**
Qualquer rasura ou emenda invalidará este documento.

Voltar Imprimir

CAIXA ECONÔMICA FEDERAL

Certificado de Regularidade do FGTS - CRF

Inscrição: 03.619.767/0005-15
Razão Social: TORINO INFORMATICA LTDA
Endereço: AV 600 SN QD 15 MOD10 ST IND / DTIMS / SERRA / ES / 29161-419

A Caixa Econômica Federal, no uso da atribuição que lhe confere o Art. 7, da Lei 8.036, de 11 de maio de 1990, certifica que, nesta data, a empresa acima identificada encontra-se em situação regular perante o Fundo de Garantia do Tempo de Servico - FGTS.

O presente Certificado não servirá de prova contra cobrança de quaisquer débitos referentes a contribuições e/ou encargos devidos, decorrentes das obrigações com o FGTS.

Validade:16/07/2025 a 14/08/2025

Certificação Número: 2025071619060911795971

Informação obtida em 28/07/2025 10:18:19

A utilização deste Certificado para os fins previstos em Lei esta condicionada a verificação de autenticidade no site da Caixa: **www.caixa.gov.br**

Habilitação TORINO INFORMATICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 576

PODER JUDICIÁRIO
JUSTIÇA DO TRABALHO

CERTIDÃO NEGATIVA DE DÉBITOS TRABALHISTAS

Nome: TORINO INFORMATICA LTDA.. (MATRIZ E FILIAIS)
CNPJ: 03.619.767/0005-15
Certidão nº: 30543294/2025
Expedição: 03/06/2025, às 09:00:28
Validade: 30/11/2025 - 180 (cento e oitenta) dias, contados da data de sua expedição.

Certifica-se que **TORINO INFORMATICA LTDA.. (MATRIZ E FILIAIS)**, inscrito(a) no CNPJ sob o nº **03.619.767/0005-15**, **NÃO CONSTA** como inadimplente no Banco Nacional de Devedores Trabalhistas.
Certidão emitida com base nos arts. 642-A e 883-A da Consolidação das Leis do Trabalho, acrescentados pelas Leis ns.° 12.440/2011 e 13.467/2017, e no Ato 01/2022 da CGJT, de 21 de janeiro de 2022.
Os dados constantes desta Certidão são de responsabilidade dos Tribunais do Trabalho.
No caso de pessoa jurídica, a Certidão atesta a empresa em relação a todos os seus estabelecimentos, agências ou filiais.
A aceitação desta certidão condiciona-se à verificação de sua autenticidade no portal do Tribunal Superior do Trabalho na Internet (http://www.tst.jus.br).
Certidão emitida gratuitamente.

INFORMAÇÃO IMPORTANTE
Do Banco Nacional de Devedores Trabalhistas constam os dados necessários à identificação das pessoas naturais e jurídicas inadimplentes perante a Justiça do Trabalho quanto às obrigações estabelecidas em sentença condenatória transitada em julgado ou em acordos judiciais trabalhistas, inclusive no concernente aos recolhimentos previdenciários, a honorários, a custas, a emolumentos ou a recolhimentos determinados em lei; ou decorrentes de execução de acordos firmados perante o Ministério Público do Trabalho, Comissão de Conciliação Prévia ou demais títulos que, por disposição legal, contiver força executiva.

PREFEITURA MUNICIPAL DA SERRA
Secretaria Municipal da Fazenda

CEP: 29176-439 - RUA MAESTRO ANTONIO CICERO, N° 111 CACAROCA Serra ES

Certidão Negativa de Débitos

N° da Certidão: 12014737/2025 **Data Geração:11/06/2025** **Data Validade:11/08/2025**

CERTIFICAMOS, que não constam em nome do sujeito passivo identificado, nesta data, débitos com a Fazenda Pública Municipal, ressalvando o direito do município de cobrar quaisquer débitos que vierem a ser conhecidos e apurados após a expedição.

Essa certidão com base no art. 178 da Lei 3833, de 29 de dezembro de 2011, Código Tributário Municipal (CTM).

Identificação

CRC	**8333930 Crc Original: 8333930 Situação: Ativo**
Razão Social/Nome	**TORINO INFORMATICA LTDA..**
CNPJ / CPF	**03.619.767/0005-15**
Inscrição Estadual/RG	
Endereço	**29161-399 - AVENIDA SEISCENTOS, QUADRA 15 MODULO 10;SETOR INDUSTRIAL ;**
Bairro	**TERMINAL INTERMODAL DA SERRA Cidade Serra Estado ES**

Serra, Terça-feira, 22 de Julho de 2025

N° da Certidão: 12014737/2025

Inscrição: 8333930

Tanto a veracidade da informação quanto a manutenção da condição de não devedor poderá ser verificada na seguinte página da Internet:
http://www.serra.es.gov.br/

ATENÇÃO: Qualquer rasura ou emenda **INVALIDARÁ** este documento.

Estado do Espírito Santo
Secretaria de Estado da Fazenda
Subsecretaria de Estado da Receita

CERTIDÃO POSITIVA DE DÉBITO FISCAL COM EFEITO DE NEGATIVA

Número: 20250000813132 **Validade:** 02/09/2025

01 - IDENTIFICAÇÃO DO REQUERENTE **CNPJ:** 03.619.767/0005-15

Nome/Razão Social: TORINO INFORMATICA LTDA..

02 - DÉBITOS

Constam débitos fiscais lançados nos processos abaixo relacionados para os quais a exigibilidade está suspensa nos termos do artigo 151 e seus incisos do Código Tributário Nacional, cobrança executiva em curso, com penhora ou com garantia efetivada.

AUTO DE INFRACAO	50888699	EXIGIBILIDADE SUSPENSA	TITULAR

03 - DECLARAÇÃO

Conforme disposto no artigo 206 do Código Tributário Nacional, este documento tem os mesmos efeitos da Certidão Negativa expedida de acordo com o artigo 205 do referido código, por constarem nos registros da Secretaria de Estado da Fazenda, em nome do contribuinte, somente débitos nas situações acima especificadas.

As informações cadastrais registradas acima correspondem aos dados no sistema de cadastro da Secretaria de Estado da Fazenda. Caso haja divergência comparecer imediatamente a Agência da Receita Estadual a que estiver circunscrito o requerente.

Data: 04 de Junho de 2025

AGÊNCIA VIRTUAL

Autenticação eletrônica: 0022.D13D.2EC0.8066

Impresso em: 04/06/2025 às 09:07:51

PODER JUDICIÁRIO
TRIBUNAL DE JUSTIÇA DO ESTADO DO ESPÍRITO SANTO
R. Des. Homero Mafra, 60 Enseada do Suá, Vitória - ES | CEP: 29.050-275 | Tel: (27) 3334-2000.

CERTIDÃO NEGATIVA DE PRIMEIRA INSTÂNCIA
NATUREZA DE RECUPERAÇÃO JUDICIAL E EXTRAJUDICIAL (FALÊNCIA E CONCORDATA)

Dados da Certidão

Razão Social: TORINO INFORMATICA LTDA

CNPJ:	03.619.767/0005-15		
Data de Expedição:	14/07/2025 11:30:01	**Validade:**	30 DIAS
N° da Certidão:	**** 2024830555 ****		
-- ENDEREÇO --			
Município:	*- NÃO INFORMADO -*	**Bairro:**	*- NÃO INFORMADO -*
Logradouro:	*- NÃO INFORMADO -*	**Número:**	*- NÃO INFORMADO -*
Complemento:	*- NÃO INFORMADO -*	**CEP:**	*- NÃO INFORMADO -*
-- CONTATO --			
Email:	*- NÃO INFORMADO -*	**Telefone Fixo:**	*- NÃO INFORMADO -*
		Telefone Celular:	*- NÃO INFORMADO -*

CERTIFICA que, consultando a base de dados do Sistema de Gerenciamento de Processos do Poder Judiciário do Estado do Espírito Santo (E-Jud, SIEP, PROJUDI e PJe) até a presente data e hora, **NADA CONSTA** contra o solicitante .

Observações

a. Certidão expedida gratuitamente através da Internet;
b. Os dados do(a) solicitante acima informados são de sua responsabilidade, devendo a titularidade ser conferida pelo interessado e/ou destinatário;
c. O prazo de validade desta certidão é de 30 (trinta) dias, contados da data da expedição, conforme disposto no art. 467 do Código de Normas da Corregedoria Geral da Justiça. Após essa data será necessária a emissão de uma nova certidão;
d. A autenticidade desta certidão poderá ser confirmada na página do Tribunal de Justiça do Estado do Espírito Santo - www.tjes.jus.br -, utilizando o número da certidão acima identificado;
e. Em relação as comarcas da entrância especial (Vitória/Vila Velha/Cariacica/Serra/Viana), as ações de: execução fiscal estadual, falência e recuperação judicial, e auditoria militar, tramitam, apenas, no juízo de Vitória;
f. As ações de natureza cível abrangem inclusive aquelas que tramitam nas varas de Órfãos e Sucessões (Tutela, Curatela, Interdição,...), Juizado Especial Cível, Juizado Especial da Fazenda Pública, Execução Fiscal e Execução Patrimonial (observado o item **e**);
g. As ações de natureza criminal abrangem, dentre outras: as de auditoria militar e de juizados especiais criminais;
h. As matérias atinentes as varas de família e infância e juventude são objeto de certidão específica;
i. A base de dados do sistema de gerenciamento processual (1ª INSTÂNCIA: eJUD, SIEP, PROJUDI, PJe-1G; 2ª INSTÂNCIA: Sistema de Segunda Instância, PJe-2G) contém o registro de todos os processos distribuídos no Judiciário do Estado do Espírito Santo, com exceção do SEEU;
j. A certidão negativa referente ao Sistema Eletrônico de Execução Unificado – SEEU deverá ser requerida ao Cartório do Ofício de Distribuidor da Comarca, conforme Ato Normativo Conjunto n°. 009/2021.

Habilitação TORINO INFORMATICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 580

PODER JUDICIÁRIO

TRIBUNAL DE JUSTIÇA DO ESTADO DE SÃO PAULO

CERTIDÃO ESTADUAL DE DISTRIBUIÇÕES CÍVEIS

CERTIDÃO Nº: 2770371 **FOLHA: 1/1**

A autenticidade desta certidão poderá ser confirmada pela internet no site do Tribunal de Justiça.

A Diretoria de Serviço Técnico de Informações Cíveis do(a) Comarca de São Paulo - Capital, no uso de suas atribuições legais,

CERTIFICA E DÁ FÉ que, pesquisando os registros de distribuições de **PEDIDOS DE FALÊNCIA, CONCORDATAS, RECUPERAÇÕES JUDICIAIS E EXTRAJUDICIAIS**, anteriores a 11/07/2025, verificou **NADA CONSTAR** como réu/requerido/interessado em nome de: **********

TORINO INFORMATICA LTDA, CNPJ: 03.619.767/0001-91, conforme indicação constante do pedido de certidão.**********

Esta certidão não aponta ordinariamente os processos em que a pessoa cujo nome foi pesquisado figura como autor (a). São apontados os feitos com situação em tramitação já cadastrados no sistema informatizado referentes a todas as Comarcas/Foros Regionais e Distritais do Estado de São Paulo.

A data de informatização de cada Comarca/Foro pode ser verificada no Comunicado SPI nº 22/2019.

Esta certidão considera os feitos distribuídos na 1ª Instância, mesmo que estejam em Grau de Recurso.

Não existe conexão com qualquer outra base de dados de instituição pública ou com a Receita Federal que verifique a identidade do NOME/RAZÃO SOCIAL com o CPF/CNPJ. A conferência dos dados pessoais fornecidos pelo pesquisado é de responsabilidade exclusiva do destinatário da certidão.

A certidão em nome de pessoa jurídica considera os processos referentes à matriz e às filiais e poderá apontar feitos de homônimos não qualificados com tipos empresariais diferentes do nome indicado na certidão (EIRELI, S/C, S/S, EPP, ME, MEI, LTDA).

Não é necessária a complementação com a certidão do sistema eproc.

Esta certidão só tem validade mediante assinatura digital.

Esta certidão é sem custas.

São Paulo, 14 de julho de 2025.

PEDIDO N°: ***0088081602***

ASSINATURA TJSP SAJ DIGITAL

TORINO INFORMÁTICA LTDA
CNPJ: 03.619.767/0001-91 Inscrição Estadual: 669.369.347-110

JUCESP PROTOCOLO
0.607.620/24-9

TERMO DE ABERTURA

Nome da Empresa.....: TORINO INFORMATICA LTDA

Endereço.....: Avenida RITA DE CARVALHO MONTEIRO, 120

Complemento.....: Numero 130

Cidade.....: Sorocaba

CEP.....: 18.085-750

Bairro.....: RETIRO SÃO JOAO

Estado.....: SP

Registrado na Junta.....: 35216195101

Data do Registro.....: 01/02/2000

Inscrição Estadual.....: 669.369.347-110

Inscrição Municipal.....:

CNPJ.....: 03.619.767/0001-91

Encerramento Exercício Social: 31/12/2023

Sorocaba (SP), 01 de janeiro de 2023

DENISE DO AMARAL RISSIO
Sócia Administradora
CPF: 246.137.578-00

JOSÉ DINI FILHO
CRC: 1-SP-087764/O-3 - Técnico Contábil
CPF: 405.473.708-06

DRE

Valores expressos em Reais (R$)

Discriminação	Periodo de 01/2023 a 12/2023 DRE	Periodo de 01/2023 a 12/2023 Valores do Exercicio
RECEITA OPERACIONAL BRUTA		
RECEITA OPERACIONAL BRUTA		
VENDAS DE MERCADORIAS	411.291.747,18	411.291.747,18
SERVIÇOS MERCADO INTERNO	2.263.563,04	2.263.563,04
***** Total RECEITA OPERACIONAL BRUTA**	**413.555.310,22**	**413.555.310,22**
***** Total RECEITA OPERACIONAL BRUTA**	**413.555.310,22**	**413.555.310,22**
(-) DEDUÇÕES DA RECEITA BRUTA		
VENDAS CANCELADAS		
(-) CANCELAMENTOS E DEVOLUÇÕES	(15.739.031,90)	(15.739.031,90)
***** Total VENDAS CANCELADAS**	**(15.739.031,90)**	**(15.739.031,90)**
IMPOSTOS INCIDENTES SOBRE VENDAS E SERVIÇOS		
(-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVIÇOS	(83.295.746,56)	(83.295.746,56)
***** Total IMPOSTOS INCIDENTES SOBRE VENDAS E SERVIÇOS**	**(83.295.746,56)**	**(83.295.746,56)**
***** Total (-) DEDUÇÕES DA RECEITA BRUTA**	**(99.034.778,46)**	**(99.034.778,46)**
(=) RECEITA OPERACIONAL LIQUIDA		
***** Total (=) RECEITA OPERACIONAL LIQUIDA**	**314.520.531,76**	**314.520.531,76**
(-) CUSTO DOS PRODUTOS/MERCADORIAS/SERVIÇOS		
CUSTO DAS MERCADORIAS VENDIDAS	(272.622.233,63)	(272.622.233,63)
***** Total (-) CUSTO DOS PRODUTOS/MERCADORIAS/SERVIÇOS**	**(272.622.233,63)**	**(272.622.233,63)**
(=) LUCRO BRUTO		
***** Total (=) LUCRO BRUTO**	**41.898.298,13**	**41.898.298,13**
(+/-) DESPESAS OPERACIONAIS		
DE VENDAS		
DESPESAS COM VEÍCULOS	(61.534,02)	(61.534,02)
DESPESAS GERAIS	(3.561.331,41)	(3.561.331,41)
***** Total DE VENDAS**	**(3.622.865,43)**	**(3.622.865,43)**
ADMINISTRATIVAS		
DESPESAS COM PESSOAL	(2.408.481,92)	(2.408.481,92)
OCUPAÇÃO	(792.538,20)	(792.538,20)
DEPRECIAÇÕES E AMORTIZAÇÕES	(339.552,59)	(339.552,59)
UTILIDADES E SERVIÇOS	(225.278,40)	(225.278,40)
DESPESAS COM VEÍCULOS	(58.977,02)	(58.977,02)
DESPESAS GERAIS	(32.317.955,91)	(32.317.955,91)
DESPESAS NÃO DEDUTIVEIS	(649.129,75)	(649.129,75)
***** Total ADMINISTRATIVAS**	**(36.791.913,79)**	**(36.791.913,79)**
DESPESAS FINANCEIRAS		
DESPESAS FINANCEIRAS	(5.876.643,84)	(5.876.643,84)
***** Total DESPESAS FINANCEIRAS**	**(5.876.643,84)**	**(5.876.643,84)**
(-) RECEITAS FINANCEIRAS		
RECEITAS FINANCEIRAS	11.212.134,07	11.212.134,07
***** Total (-) RECEITAS FINANCEIRAS**	**11.212.134,07**	**11.212.134,07**
DESPESAS TRIBUTARIAS		
DESPESAS TRIBUTÁRIAS	(359.873,89)	(359.873,89)
***** Total DESPESAS TRIBUTARIAS**	**(359.873,89)**	**(359.873,89)**
***** Total (+/-) DESPESAS OPERACIONAIS**	**(35.439.162,88)**	**(35.439.162,88)**

DRE

Valores expressos em Reais (R$)

Discriminação	Periodo de 01/2023 a 12/2023 DRE	Periodo de 01/2023 a 12/2023 Valores do Exercicio
(=) LUCRO OPERACIONAL LIQUIDO		
***** Total (=) LUCRO OPERACIONAL LIQUIDO**	**6.459.135,25**	**6.459.135,25**
OUTROS RESULTADOS OPERACIONAIS		
OUTRAS RECEITAS OPERACIONAIS		
RECEITAS OPERACIONAIS DIVERSAS	21.389.187,40	21.389.187,40
RECEITAS	256.503,00	256.503,00
***** Total OUTRAS RECEITAS OPERACIONAIS**	**21.645.690,40**	**21.645.690,40**
OUTRAS DESPESAS OPERACIONAIS		
CUSTOS	(114.300,00)	(114.300,00)
***** Total OUTRAS DESPESAS OPERACIONAIS**	**(114.300,00)**	**(114.300,00)**
***** Total OUTROS RESULTADOS OPERACIONAIS**	**21.531.390,40**	**21.531.390,40**
RESULTADO ANTES DA CS E IR		
***** Total RESULTADO ANTES DA CS E IR**	**27.990.525,65**	**27.990.525,65**
PROVISÃO PARA CONTRIBUIÇÃO SOCIAL		
CSLL	(1.891.944,63)	(1.891.944,63)
***** Total PROVISÃO PARA CONTRIBUIÇÃO SOCIAL**	**(1.891.944,63)**	**(1.891.944,63)**
PROVISÃO PARA IMPOSTO DE RENDA		
IRPJ	(5.237.401,77)	(5.237.401,77)
***** Total PROVISÃO PARA IMPOSTO DE RENDA**	**(5.237.401,77)**	**(5.237.401,77)**
(=) LUCRO LIQUIDO DO EXERCICIO		
***** Total (=) LUCRO LIQUIDO DO EXERCICIO**	**20.861.179,25**	**20.861.179,25**

DENISE DO AMARAL RISSIO
Sócia Administradora
CPF: 246.137.578-03

JOSÉ DINI FILHO
CRC: 1-SP-067164/O-3 - Técnico Contábil
CPF: 405.473.708-06

BALANÇO PATRIMONIAL

Valores expressos em Reais (R$)

ATIVO	277.511.377,66	PASSIVO	227.511.321,66
CIRCULANTE	221.326.050,82	CIRCULANTE	102.546.859,91
DISPONÍVEL	62.956.554,64	INSTITUIÇÕES FINANCEIRAS	11.219.435,89
BENS NUMERÁRIOS	92,81	Empréstimos	11.219.435,89
DEPÓSITOS BANCÁRIOS A VISTA	107.380,00	FORNECEDORES	79.562.689,78
APLICAÇÕES DE LIQUIDEZ IMEDIATA	62.849.081,83	FORNECEDORES NACIONAIS	79.562.689,78
CLIENTES	46.784.993,79	OBRIGAÇÕES TRIBUTÁRIAS	3.827.333,82
DUPLICATAS A RECEBER	46.784.993,79	IMPOSTOS E CONTRIBUIÇÕES A RECOLHER	3.773.957,10
OUTROS CRÉDITOS	46.973.479,84	TRIBUTOS RETIDOS A RECOLHER	53.376,72
ADIANTAMENTOS A TERCEIROS	182.185,20	OBRIGAÇÕES TRABALHISTAS E PREVIDENCIÁRIAS	123.276,30
ADIANTAMENTOS A FUNCIONARIOS	21.696,64	OBRIGAÇÕES COM O PESSOAL	68.283,94
TRIBUTOS A RECUPERAR	42.506.783,20	OBRIGAÇÕES PREVIDENCIÁRIAS	54.992,36
OUTROS CREDITOS	4.262.805,78	OUTRAS OBRIGAÇÕES	7.814.204,12
ESTOQUES	64.585.200,54	ADIANTAMENTOS DE CLIENTES	2.055.100,75
ESTOQUES DIVERSOS	64.585.200,54	CONTAS A PAGAR	215.007,98
DESPESAS PAGAS ANTECIPADAMENTE	25.830,21	PROVISÃO PARA IRPJ E CSLL	5.544.095,39
DESPESAS DE MESES SEGUINTES	25.830,21	NÃO CIRCULANTE	3.628.143,80
NÃO CIRCULANTE	5.219.601,96	OBRIGAÇÕES A LONGO PRAZO	3.628.143,80
REALIZÁVEL A LONGO PRAZO	3.171,37	INSTITUIÇÕES FINANCEIRAS	3.628.143,80
OUTROS CREDITOS	3.171,37	EMPRÉSTIMOS	3.628.143,80
IMOBILIZADO	5.216.430,59	PATRIMÔNIO LÍQUIDO	120.376.648,27
IMÓVEIS	3.150.000,00	CAPITAL SOCIAL	2.000.000,00
BENS EM OPERAÇÃO	2.954.654,11	CAPITAL SUBSCRITO	2.000.000,00
IMOBILIZADO EM ANDAMENTO	777.750,89	RESERVAS DE LUCROS	81.203.284,45
(-) DEPRECIAÇÃO/AMORTIZAÇÃO/EXAUSTÃO ACUMULADA	(1.665.973,61)	LUCROS E PREJUÍZOS ACUMULADOS	37.167.443,82
ATIVO COMPENSATÓRIO	965.669,68	LUCROS E PREJUÍZOS ACUMULADOS	37.167.443,82
DEMONSTRAÇÕES DIVERSAS	965.669,68	PASSIVO COMPENSATÓRIO	965.669,68
		DEMONSTRAÇÕES DIVERSAS	965.669,68

DENISE DO AMARAL RISSIO
Sócia Administradora
CPF: 246.137.578-00

JOSÉ DINI FILHO
CRC: 1-SP-067764/O-3 - Técnico Contábil
CPF: 405.473.708-06

TORINO INFORMATICA LTDA.
CNPJ:03.619.767/0001-91

Período: Janeiro a Dezembro de 2023

TRANSCRIÇÃO DO BALANÇO PATRIMONIAL ENCERRADO EM 31/12/2023

ATIVO		PASSIVO	
1. ATIVO CIRCULANTE (AC)	**221.323.690,02**	**1. PASSIVO CIRCULANTE (PC)**	**100.491.759,16**
DISPONÍVEL	62.956.554,64	**2. PASSIVO NÃO CIRCULANTE (PNC)**	**3.628.143,80**
REALIZÁVEL A CURTO PRAZO	46.784.993,79		
ESTOQUES	64.563.200,34	**3. RESULTADOS DE EXERCÍCIOS FUTUROS**	**2.055.100,75**
OUTROS CREDITOS	46.989.201,04		
		4. PATRIMONIO LIQUIDO (PL)	**120.370.648,27**
2. ATIVO NÃO CIRCULANTE (ANC)	**5.219.601,96**	CAPITAL INTEGRALIZADO	2.000.000,00
3. PERMANENTE (AP)	**5.215.430,59**	RESERVAS DE CAPITAL	-
REALIZÁVEL A LONGO PRAZO	3.171,37	RESERVAS DE INCENTIVOS FISCAIS	81.203.204,45
INVESTIMENTOS	777.750,09	RESERVAS DE LUCROS	-
IMOBILIZADO	**6.104.654,11**	RESULTADO EXERCICIO	6.250.013,06
		(+) LUCROS ACUMULADOS	30.917.430,76
(-) DEPRECIAÇÃO	1.665.973,61	(-) PREJUIZOS ACUMULADOS	-
4. ATIVO COMPENSATÓRIO	965.669,68	**5. PASSIVO COMPENSATÓRIO**	965.669,68
TOTAL DO ATIVO (AT)	**227.511.321,66**	**TOTAL DO PASSIVO**	**227.511.321,66**

ÍNDICE DE LIQUIDEZ GERAL ILG = (AC + ANC) / (PC + PNC) =	2,18
ÍNDICE DE SOLVÊNCIA IS = (AC + ANC + AP) / (PC + PNC) =	2,23
ÍNDICE DE LIQUIDEZ CORRENTE ILC = AC / PC =	2,20
ÍNDICE DE ENDIVIDAMENTO IE = (PC + PNC) / (AC + ANC + AP) =	0,45
GRAU DE ENDIVIDAMENTO DO PATRIMONIO LIQUIDO GEPL = (PC + PNC) / PL =	0,86
QUOC.ENTRE PATR. LIQ. E CAP.INTEGR.	60,19
QUOCIENTE PL/PC + PNC	1,16
AP/PL=	0,04
PC/(PC+PNC)=	0,97

TORINO INFORMÁTICA LTDA
Denise do Amaral Rissio
Sócia Administradora
CPF Nº 246.137.578-00

DINI E TREVISAN ASS.CONT.TRAB. LTDA.
Jose Dini Filho
TEC. CRC 067.764/O-3SP
CPF Nº 405.473.708-06

Dini e Trevisan
ASSESSORIA CONTÁBIL

TORINO INFORMATICA LTDA
CNPJ: 03.619.767/0001-91
NOTAS EXPLICATIVAS AS DEMONSTRAÇÕES FINANCEIRAS DO EXERCÍCIO FINDO EM 31.12.2023

1) CONTEXTO OPERACIONAL

A empresa tem como principal atividade o **Comercio atacadista de produtos de informática.**

2) APRESENTAÇÃO DAS DEMONSTRAÇÕES FINANCEIRAS

As demonstrações financeiras foram elaboradas com base nas práticas contábeis de acordo com a **ITG 2000(R1) – ESCRITURAÇÃO CONTÁBIL.**

3) PRINCIPAIS PRÁTICAS CONTÁBEIS

A) Apuração do Resultado, ativos e passivos circulantes e não-circulantes;

B) Duplicatas a Receber somam em 31.12.2023 o valor de R$ 46.784.993,79;

C) Outros Créditos a Receber somam em 31.12.2023 o valor de R$ 46.973.470,84;

D) O resultado é apurado pelo regime de competência;

Os ativos e passivos circulantes e não circulantes, quando aplicável incluem os encargos incorridos e auferidos até a data do balanço e são reduzidos, mediante provisão aos seus valores prováveis de realização.

E) ESTOQUES

Os estoques de matérias-primas e produtos para revenda estão avaliados pelo valor médio das compras diminuídos dos impostos e somam em 31.12.2023 o valor de R$ 64.585.200,54.

F) IMOBILIZADO

Registrado ao custo de aquisição, as depreciações são computadas pelo método LINEAR com base em taxas que levam em consideração a vida útil do bem.

G) IMPOSTO DE RENDA E CONTRIBUIÇÃO SOCIAL

Imposto de renda, calculado a alíquota de 15% sobre o lucro tributável acrescido do adicional de 10%, cujo o calor do faturamento ultrapasse o valor do limite do trimestre. Contribuição Social calculada a alíquota de 9% sobre o lucro Contábil.

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 587

H) TRIBUTOS A RECUPERAR: Os valores relativos a tributos a recuperar constituem créditos legítimos da empresa, derivados de sua incidência nas operações com órgãos públicos.

4) IMOBILIZADO

Taxa de Depreciação Anual	**Bem**	**31.12.2023**
Veículos	20%	1.872.257,91
Maquinários	10%	303.054,31
Moveis e Utensílios	10%	380.254,62
Instalações	10%	85.428,36
Equipamentos de Informática	20%	213.443,87
Imóveis		3.150.000,00
TOTAL ATIVO		6.004.439,07

5) PASSIVO CIRCULANTE E NÃO CIRCULANTE:

Empréstimos e Financiamentos: Os valores lançados nas contas de Empréstimos e Financiamentos, tanto no Passivo Circulante, quando no Passivo Não Circulante, estão conciliados, e os pagamentos estão absolutamente em dia, possuindo a empresa saldos ativos, que suportam o seu pagamento integral a qualquer momento.

6) CAPITAL SOCIAL

O capital social subscrito e integralizado é de R$ 2.000.0000,00 (Dois milhões de Reais), totalmente de origem nacional, quotas no valor de R$ 1.000,00 (Hum mil reais) cada.

7) RELATÓRIO DO AUDITOR INDEPENDENTE

Seguindo as boas práticas da administração, e no sentido de tornar transparente a sua situação econômica e financeira para o mercado, seus clientes e fornecedores, a Torino Informática LTDA. contratou a empresa ACR AUDITORIA E CONTABILIDADE SS LTDA., para realizar a auditoria externa e independente de sua contabilidade. Como resultado a auditoria produziu um relatório de quarenta e três (43) páginas, das quais transcrevemos o seu parecer, que vai em anexo. Informamos que a versão completa do relatório está registrado na Jucesp como documento de interesse da empresa.

DECLARAÇÃO DE CONFORMIDADE:

As demonstrações financeiras são de responsabilidade da Administração, e foram elaboradas de acordo com as práticas contábeis adotadas no Brasil, e as normas

emitidas pelo Conselho Federal de Contabilidade (CFC), as quais abrangem a Legislação Societária, os Pronunciamentos, as Orientações e as Interpretações emitidas pelo Comitê de Pronunciamentos Contábeis (CPC).

A Diretoria declara que as Demonstrações Contábeis da sociedade **TORINO INFORMÁTICA LTDA.**, do período compreendido entre 01 de janeiro de 2023 e 31 de dezembro de 2023, apresentam adequadamente a posição patrimonial e financeira, o desempenho e os fluxos de caixa da entidade, com observância aos Princípios Gerais da Contabilidade. As demonstrações contábeis, foram elaboradas segundo o regime de competência e estão representadas em real, a moeda nacional Brasileira.

José Dini Filho

Contador: CRC: 1SP067764/O-3

Denise do Amaral Rissio

CPF.246.137.578-00

auditores independentes

RELATÓRIO DO AUDITOR INDEPENDENTE SOBRE AS DEMONSTRAÇÕES FINANCEIRAS

Aos Diretores da
TORINO INFORMÁTICA LTDA
Sorocaba - SP

Opinião

Examinamos as demonstrações financeiras da **Torino Informática Ltda ("Empresa")**, que compreendem o balanço patrimonial em 31 de dezembro de 2023 e as respectivas demonstrações do resultado, do resultado abrangente, das mutações do patrimônio líquido, dos fluxos de caixa e do valor adicionado para o exercício findo nessa data, bem como as correspondentes notas explicativas, compreendendo as políticas contábeis significativas e outras informações elucidativas.

Em nossa opinião, as demonstrações financeiras acima referidas apresentam adequadamente, em todos os aspectos relevantes, a posição patrimonial e financeira da Empresa em 31 de dezembro de 2023, o desempenho de suas operações e os seus fluxos de caixa para o exercício findo nessa data, de acordo com as práticas contábeis adotadas no Brasil.

Base para opinião

Nossa auditoria foi conduzida de acordo com as normas brasileiras e internacionais de auditoria. Nossas responsabilidades, em conformidade com tais normas, estão descritas na seção a seguir intitulada "Responsabilidade do auditor pela auditoria das demonstrações financeiras". Somos independentes em relação à Empresa, de acordo com os princípios éticos relevantes previstos no Código de Ética Profissional do Contador e nas normas profissionais emitidas pelo Conselho Federal de Contabilidade, e cumprimos com as demais responsabilidades éticas de acordo com essas normas. Acreditamos que a evidência de auditoria obtida é suficiente e apropriada para fundamentar nossa opinião.

Principais assuntos de auditoria

Principais assuntos de auditoria são aqueles que, em nosso julgamento profissional, foram os mais significativos em nossa auditoria do exercício corrente. Esses assuntos foram tratados no contexto de nossa auditoria das demonstrações financeiras como um todo e na formação de nossa opinião sobre essas demonstrações financeiras e, portanto, não expressamos uma opinião separada sobre esses assuntos.

Outros assuntos

a-) Demonstrações do valor adicionado

As demonstrações do valor adicionado (DVA) referentes ao exercício de 31 de dezembro de 2023, elaboradas sob a responsabilidade da administração da Empresa, e apresentadas como informação gerencial, foram submetidas a procedimentos de auditoria executados em conjunto com a auditoria das demonstrações financeiras da empresa. Para a formação de nossa opinião, avaliamos se essas demonstrações estão conciliadas com as demonstrações financeiras e registros contábeis, conforme aplicável, e se sua forma e conteúdo estão de acordo com os critérios definidos no Pronunciamento Técnico CPC 09 – Demonstração do Valor Adicionado. Em nossa opinião, essas demonstrações do valor adicionado foram adequadamente elaboradas, em todos os aspectos relevantes, segundo os critérios definidos nesse Pronunciamento Técnico e são consistentes em relação às demonstrações contábeis tomadas em conjunto.

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 590

b-) Auditoria dos valores correspondentes ao exercício anterior

As demonstrações financeiras do exercício findo em 31 de dezembro de 2022, apresentadas para fins de comparação com o exercício findo em 31 de dezembro de 2023, foram revisadas por nós e emitimos relatório sem modificação de opinião em 31 de março de 2023.

Outras informações que acompanham as Demonstrações Financeiras e o Relatório dos Auditores

A administração da Empresa é responsável por essas outras informações que compreendem o Relatório da Administração. Nossa opinião sobre as demonstrações financeiras não abrange o relatório da administração e não expressamos qualquer forma de conclusão de auditoria sobre esse relatório.

Em conexão com a auditoria das demonstrações financeiras, nossa responsabilidade é a de ler o Relatório da Administração e, ao fazê-lo, considerar se esse relatório está de forma relevante, inconsistente com as demonstrações financeiras ou com nosso conhecimento obtido na auditoria ou, de outra forma, aparenta estar distorcido de forma relevante. Se, com base no trabalho realizado, concluirmos que há distorção relevante no Relatório da Administração, somos requeridos a comunicar esse fato. Não temos nada a relatar a este respeito.

Responsabilidade da Administração e da governança pelas demonstrações financeiras

A Administração é responsável pela elaboração das demonstrações financeiras de acordo com as práticas contábeis vigentes no Brasil e pelos controles internos que ela determinou como necessários para permitir a elaboração dessas demonstrações financeiras livres de distorção relevante, independentemente se causada por fraude ou erro.

Na elaboração das demonstrações financeiras, a Administração é responsável pela avaliação da capacidade de a Empresa continuar operando, divulgando, quando aplicável, os assuntos relacionados com a sua continuidade operacional e o uso dessa base contábil na elaboração das demonstrações financeiras, a não ser que a Administração pretenda liquidar a Empresa ou cessar suas operações, ou não tenha nenhuma alternativa realista para evitar o encerramento das operações.

Os responsáveis pela governança da Empresa são aqueles com responsabilidade pela supervisão do processo de elaboração das demonstrações financeiras.

Responsabilidade do auditor pela auditoria das demonstrações financeiras

Nossos objetivos são obter segurança razoável de que as demonstrações financeiras, tomadas em conjunto, estão livres de distorção relevante, independentemente se causadas por fraude ou erro, e emitir relatório de auditoria contendo nossa opinião. Segurança razoável é um alto nível de segurança, mas não uma garantia de que a auditoria realizada de acordo com as normas brasileiras e internacionais de auditoria, sempre detecta as eventuais distorções relevantes existentes. As distorções podem ser decorrentes de fraude ou erro e são consideradas relevantes quando, individualmente ou em conjunto, possam influenciar, dentro de uma perspectiva razoável, as decisões econômicas dos usuários tomadas com base nas referidas demonstrações financeiras.

Como parte da auditoria realizada, de acordo com as normas brasileiras e internacionais de auditoria, exercemos julgamento profissional e mantemos ceticismo profissional ao longo da auditoria. Além disso:

- Identificamos e avaliamos os riscos de distorção relevante nas demonstrações financeiras, independentemente se causada por fraude ou erro, planejamos e executamos procedimentos de auditoria em resposta a tais riscos, bem como obtemos evidência de auditoria apropriada e suficiente para fundamentar nossa opinião. O risco de não detecção de distorção relevante resultante de fraude é maior do que o proveniente de erro, já que a fraude pode envolver o ato de burlar os controles internos, conluio, falsificação, omissão ou representações falsas intencionais.

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 591

auditores independentes

- Obtemos entendimento dos controles internos relevantes para a auditoria para planejarmos procedimentos de auditoria apropriados nas circunstâncias, mas não com o objetivo de expressarmos opinião sobre a eficácia dos controles internos da Companhia.

- Avaliamos a adequação das políticas contábeis utilizadas e a razoabilidade das estimativas contábeis e respectivas divulgações feitas pela administração.

- Concluímos sobre a adequação de uso, pela Administração, da base contábil de continuidade operacional e, com base nas evidências de auditoria obtidas, se existe incerteza relevante em relação a eventos ou condições que possam levantar dúvida significativa em relação a capacidade de continuidade operacional da Empresa. Se concluirmos que existe incerteza relevante, devemos chamar atenção em nosso relatório de auditoria para as respectivas divulgações nas demonstrações financeiras ou incluir modificação em nossa opinião, se as divulgações foram inadequadas. Nossas conclusões fundamentadas nas evidências de auditoria obtidas até a data de nosso relatório. Todavia, eventos ou condições futuras podem levar a Empresa a não mais se manter em continuidade operacional.

- Avaliamos a apresentação geral, a estrutura e o conteúdo das demonstrações financeiras, inclusive as divulgações e se as demonstrações financeiras representam as correspondentes transações e os eventos de maneira compatível com o objeto de apresentação adequada.

Comunicamo-nos com os responsáveis pela governança e respeito, entre outros aspectos, do alcance planejado, da época da auditoria e das constatações significativas de auditoria, inclusive as eventuais deficiências significativas nos controles internos que identificamos durante nossos trabalhos.

Sorocaba (SP), 29 de março de 2024.-

ACR AUDITORIA E CONTABILIDADE SOCIEDADE SIMPLES L:17325769000182

Assinado de forma digital por ACR AUDITORIA E CONTABILIDADE SOCIEDADE SIMPLES L:17325769000182
Dados: 2024.04.18 16:38:38 -03'00'

ACR AUDITORIA E CONTABILIDADE S/S LTDA
CRC2SP035035/O-0

ANTONIO CARLOS RUBINATO:98586807834

Assinado de forma digital por ANTONIO CARLOS RUBINATO:98586807834
Dados: 2024.04.18 16:38:58 -03'00'

Antonio Carlos Rubinato
Contador - CRC1SP111745/O-5
IBRACON nº 5.092 – 23/08/2016

JESSICA CHRISTINA MORENO GREGORIO RUBINATO:38661091802

Assinado de forma digital por JESSICA CHRISTINA MORENO GREGORIO RUBINATO:38661091802
Dados: 2024.04.18 16:39:20 -03'00'

Jéssica Christina Moreno G. Rubinato
Contadora-CRC1SP297849/0-9Registro Reg. no Registro - CNAI nº 6.424 – 18/11/2019

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 592

TORINO INFORMÁTICA LTDA
CNPJ: 03.619.767/0001-91 Inscrição Estadual: 669.369.347-110

Período: 01/01/2023 a 31/12/2023

TERMO DE ENCERRAMENTO

Nome da Empresa.....: TORINO INFORMATICA LTDA

Endereço.....: Avenida RITA DE CARVALHO MONTEIRO, 120

Complemento.....: Numero 130

Cidade.....: Sorocaba

CEP.....: 18.085-750

Bairro.....: RETIRO SÃO JOAO

Estado.....: SP

Registrado na Junta.....: 35216195101

Data do Registro.....: 01/02/2000

Inscrição Estadual.....: 669.369.347-110

Inscrição Municipal.....:

CNPJ.....: 03.619.767/0001-91

Encerramento Exercício Social: 31/12/2023

Sorocaba (SP), 31 de dezembro de 2023

DENISE DO AMARAL RISSIO
Sócia Administradora
CPF: 246.137.578-00

JOSÉ DINI FILHO
CRC: 1-SP-067764/O-3 - Técnico Contábil
CPF: 405.473.708-05

JUCESP
25 ABR. 2024
SINCRONIZADA SOROCABA
SECRETARIA DE DESENVOLVIMENTO ECONÔMICO - JUCESP
CERTIFICO O REGISTRO SOB O NÚMERO
MARIA CRISTINA FREI
SECRETÁRIA GERAL
159.650/24-0
JUCESP

JUCESP PROTOCOLO
0 607.615/24-2

ATA DE REUNIÃO DE SÓCIOS PARA A APROVAÇÃO DAS CONTAS DA ADMINISTRAÇÃO
Realizada aos 22 de Abril de 2024.

EMPRESA TORINO INFORMÁTICA LTDA
NIRE 35216195101
CNPJ n.º 03.619.767/0001-91

Aos vinte e dois dias do mês de abril do ano de dois mil e vinte e quatro, às dez horas, na cidade de Sorocaba, Estado de São Paulo, Rua Rita de Carvalho Monteiro, n. 120/130, Bairro Retiro São João, CEP 18085-750, na sede da sociedade empresária, **TORINO INFORMÁTICA LTDA**, que é regida sob o tipo jurídico de sociedade limitada, nos termos da Lei nº. 10.406/2002, com contrato social registrado na Junta Comercial do Estado de São Paulo – JUCESP, **sob NIRE 35216195101, inscrita no CNPJ sob n.º03.619.767/0001-91,** compareceram e reuniram-se a sócia **administradora DENISE DO AMARAL RISSIO**, brasileira, casada no regime de comunhão parcial de bens, empresária, nascida aos 02.11.1955 natural Pindamonhangaba-SP, portadora da Cédula de Identidade RG n. 6.438.259 exp. pelo SSP/SP., e do CPF n. 246.137.578-00, residente e domiciliada à Rua Angelina Parolina Zocca , 82 – Bairro de Santa Rosália - Sorocaba-SP., CEP. n. 18090.090, e o sócio **RODRIGO DO AMARAL RISSIO**, brasileiro, divorciado, maior, empresário, nascido aos 29.06.1981, natural de São Paulo-SP., portador da Cédula de Identidade RG n. 27.954.969-6, exp. pelo SSP/SP., e do CPF n. 220.807.218-95 residente domiciliado à Rua Angelina Parolina Zocca, 82 - Bairro de Santa Rosália – Sorocaba – SP., CEP. n. 18090.090 que representam a totalidade do capital social da empresa. Os sócios acima nomeados, declararam-se cientes do local, data, hora e do inteiro teor da ordem do dia, dispensando as formalidades da convocação, previstas na Lei. De comum acordo, escolhem a sócia **DENISE DO AMARAL RISSIO**, para a Presidência desta Reunião, e o sócio **RODRIGO DO AMARAL RISSIO**, para Secretário, para compor a mesa diretora da Reunião. Iniciados os trabalhos, foram apresentados o balanço patrimonial e o de resultado econômico, referentes ao **exercício social de dois mil e vinte e três**, encerrados em trinta e um de dezembro do referido ano. A sócia administradora **DENISE DO AMARAL RISSIO**, prestou contas justificadas de sua administração, esclarecendo todas as dúvidas suscitadas, que foram entendidas e aceitas por todos os presentes. Após a leitura dos documentos constantes da ordem do dia, as contas de administração foram postas em discussão e votação, sendo examinados todos os livros e documentos, sendo aprovadas pelo sócio quotista **RODRIGO DO AMARAL RISSIO**, unanimemente, sem quaisquer reservas ou restrições. Com a aprovação das contas da administração cumpriu-se o objetivo da reunião, e dada a palavra aos presentes, inexistiu qualquer manifestação, sendo encerrada a Reunião, e lavrada a presente ata que, após lida e aprovada, foi assinada por todos os sócios presentes, quotista e administradora, que será apresentada ao Registro Público de Empresas Mercantis, na Junta Comercial do Estado de São Paulo, para o seu arquivamento na forma da Lei.

Presidente: _____
DENISE DO AMARAL RISSIO

Secretário: _____
RODRIGO DO AMARAL RISSIO

JUCESP
25 ABR. 2024
SECRETARIA DE DESENVOLVIMENTO ECONÔMICO – JUCESP
MARIA CRISTINA FREI
SECRETÁRIA GERAL
159.649/24-9
JUCESP

MINISTÉRIO DA FAZENDA
SECRETARIA DA RECEITA FEDERAL DO BRASIL
SISTEMA PÚBLICO DE ESCRITURAÇÃO DIGITAL – Sped Versão: 10.1.8

RECIBO DE ENTREGA DE ESCRITURAÇÃO CONTÁBIL DIGITAL

IDENTIFICAÇÃO DO TITULAR DA ESCRITURAÇÃO

NIRE	CNPJ	
35216195101	03.619.767/0001-91	

NOME EMPRESARIAL
TORINO INFORMATICA LTDA

IDENTIFICAÇÃO DA ESCRITURAÇÃO

FORMA DA ESCRITURAÇÃO CONTÁBIL	PERÍODO DA ESCRITURAÇÃO
Livro Diário (Completo - sem escrituração Auxiliar)	01/01/2023 a 31/12/2023
NATUREZA DO LIVRO	**NÚMERO DO LIVRO**
LIVRO DIARIO DIGITAL	24

IDENTIFICAÇÃO DO ARQUIVO (HASH)
96.7E.38.F2.57.88.0B.75.7F.B5.BF.27.CC.6C.2B.DF.72.AD.DA.41

ESTE LIVRO FOI ASSINADO COM OS SEGUINTES CERTIFICADOS DIGITAIS:

QUALIFICAÇÃO DO SIGNATARIO	CPF/CNPJ	NOME	Nº SÉRIE DO CERTIFICADO	VALIDADE	RESPONSÁVEL LEGAL
Contador	40547370806	JOSE DINI FILHO:40547370806	610035458371771699 6	06/06/2023 a 05/06/2024	Não
Procurador	40547370806	JOSE DINI FILHO:40547370806	610035458371771699 6	06/06/2023 a 05/06/2024	Sim

NÚMERO DO RECIBO:

96.7E.38.F2.57.88.0B.75.7F.B5.BF.27.
CC.6C.2B.DF.72.AD.DA.41-9

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em 29/04/2024 às 14:59:49

09.2B.E8.68.E4.9A.00.AD
37.26.44.3A.1C.28.CB.B4

Considera-se autenticado o livro contábil a que se refere este recibo, dispensando-se a autenticação de que trata o art. 39 da Lei nº 8.934/1994. Este recibo comprova a autenticação.

BASE LEGAL: Decreto nº 1.800/1996, com a alteração do Decreto nº 8.683/2016, e arts. 39, 39-A, 39-B da Lei nº 8.934/1994 com a alteração da Lei Complementar nº 1247/2014.

TERMOS DE ABERTURA E ENCERRAMENTO

Entidade:	TORINO INFORMATICA LTDA
Período da Escrituração:	01/01/2023 a 31/12/2023
CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	24

TERMO DE ABERTURA

Nome Empresarial	TORINO INFORMATICA LTDA
NIRE	35216195101
CNPJ	03.619.767/0001-91
Número de Ordem	24
Natureza do Livro	LIVRO DIARIO DIGITAL
Município	Sorocaba
Data do arquivamento dos atos constitutivos	01/02/2000
Data de arquivamento do ato de conversão de sociedade simples em sociedade empresária	
Data de encerramento do exercício social	31/12/2023
Quantidade total de linhas do arquivo digital	189681

TERMO DE ENCERRAMENTO

Nome Empresarial	TORINO INFORMATICA LTDA
Natureza do Livro	LIVRO DIARIO DIGITAL
Número de ordem	24
Quantidade total de linhas do arquivo digital	189681
Data de inicio	01/01/2023
Data de término	31/12/2023

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número 96.7E.38.F2.57.88.0B.75.7F.B5.BF.27.CC.6C.2B.DF.72.AD.DA.41-9, nos termos do Decreto nº 8.683/2016.

Este relatório foi gerado pelo Sistema Público de Escrituração Digital – Sped

BALANÇO PATRIMONIAL

Entidade:	TORINO INFORMATICA LTDA
Período da Escrituração:	01/01/2023 a 31/12/2023
CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	24
Período Selecionado:	01 de Janeiro de 2023 a 31 de Março de 2023

Descrição	Nota	Saldo Inicial	Saldo Final
ATIVO		R$ 197.335.021,18	R$ 202.694.993,25
CIRCULANTE		R$ 194.264.800,90	R$ 198.909.111,63
DISPONÍVEL		R$ 52.379.742,94	R$ 39.364.053,64
BENS NUMERÁRIOS		R$ 92,81	R$ 92,81
DEPÓSITOS BANCÁRIOS A VISTA		R$ 384.502,54	R$ 89.500,36
APLICAÇÕES DE LIQUIDEZ IMEDIATA		R$ 51.995.147,59	R$ 39.274.460,47
CLIENTES		R$ 65.786.923,35	R$ 71.016.853,87
DUPLICATAS A RECEBER		R$ 65.786.923,35	R$ 71.016.853,87
OUTROS CRÉDITOS		R$ 42.248.116,11	R$ 42.749.478,94
TÍTULOS A RECEBER		R$ 50.000,00	R$ 50.000,00
ADIANTAMENTOS A TERCEIROS		R$ 17.498,20	R$ 0,00
ADIANTAMENTOS A FUNCIONARIOS		R$ 43.195,19	R$ 41.636,74
LUCROS DISTRIBUIDOS NO EXERCÍCIO		R$ 0,00	R$ 270.000,00
TRIBUTOS A RECUPERAR		R$ 37.804.775,06	R$ 38.055.194,54
OUTROS CREDITOS		R$ 4.332.647,66	R$ 4.332.647,66
ESTOQUES		R$ 33.850.018,50	R$ 45.778.725,18
ESTOQUES DIVERSOS		R$ 33.850.018,50	R$ 45.778.725,18
NÃO CIRCULANTE		R$ 2.104.550,60	R$ 2.820.211,94
REALIZÁVEL A LONGO PRAZO		R$ 725.163,68	R$ 827.918,00
OUTROS CREDITOS		R$ 25.173,52	R$ 127.927,84
CRÉDITOS FISCAIS		R$ 699.990,16	R$ 699.990,16
IMOBILIZADO		R$ 1.379.386,92	R$ 1.992.293,94
IMÓVEIS		R$ 800.000,00	R$ 800.000,00
BENS EM OPERAÇÃO		R$ 2.135.307,69	R$ 2.496.978,69
IMOBILIZADO EM ANDAMENTO		R$ 97.850,25	R$ 97.850,25
(-) (-) DEPRECIAÇÃO/AMORTIZAÇÃO/EXAUSTÃO ACUMULADA		R$ (1.653.771,02)	R$ (1.402.535,00)
ATIVO COMPENSATÓRIO		R$ 965.669,68	R$ 965.669,68
DEMONSTRAÇÕES DIVERSAS		R$ 965.669,68	R$ 965.669,68
PASSIVO		R$ 197.335.021,18	R$ 202.694.993,25
CIRCULANTE		R$ 84.034.781,94	R$ 76.749.095,04
INSTITUIÇÕES FINANCEIRAS		R$ 15.004.690,54	R$ 13.715.626,57
Emprestimos		R$ 15.004.490,54	R$ 13.715.426,57
FINANCIAMENTOS A CURTO PRAZO - OUTROS		R$ 200,00	R$ 200,00
FORNECEDORES		R$ 62.531.058,66	R$ 53.924.079,59
FORNECEDORES NACIONAIS		R$ 62.531.058,66	R$ 53.924.079,59
OBRIGAÇÕES TRIBUTÁRIAS		R$ 3.531.423,72	R$ 3.420.180,00
IMPOSTOS E CONTRIBUIÇÕES A RECOLHER		R$ 3.510.627,93	R$ 3.385.139,13
TRIBUTOS RETIDOS A RECOLHER		R$ 20.795,79	R$ 35.040,87
OBRIGAÇÕES TRABALHISTAS E PREVIDENCIÁRIAS		R$ 92.032,58	R$ 99.492,65
OBRIGAÇÕES COM O PESSOAL		R$ 51.619,19	R$ 57.807,59
OBRIGAÇÕES PREVIDENCIÁRIAS		R$ 40.413,39	R$ 41.685,06
OUTRAS OBRIGAÇÕES		R$ 2.875.576,44	R$ 5.589.716,23
ADIANTAMENTOS DE CLIENTES		R$ 1.282.240,40	R$ 197.547,51
CONTAS A PAGAR		R$ 350.634,64	R$ 98.169,19
PROVISÃO PARA IRPJ E CSLL		R$ 1.242.701,40	R$ 5.293.999,53
NÃO CIRCULANTE		R$ 10.947.306,39	R$ 9.193.798,74
OBRIGAÇÕES A LONGO PRAZO		R$ 10.947.306,39	R$ 9.193.798,74
INSTITUIÇÕES FINANCEIRAS		R$ 10.947.306,39	R$ 9.193.798,74
EMPRÉSTIMOS		R$ 10.947.306,39	R$ 9.193.798,74
PATRIMÔNIO LÍQUIDO		R$ 101.387.263,17	R$ 115.786.429,79
CAPITAL SOCIAL		R$ 2.000.000,00	R$ 2.000.000,00
CAPITAL SUBSCRITO		R$ 2.000.000,00	R$ 2.000.000,00
RESERVAS DE LUCROS		R$ 66.592.038,25	R$ 66.592.038,25
LUCROS E PREJUÍZOS ACUMULADOS		R$ 32.795.224,92	R$ 47.194.391,54
LUCROS E PREJUÍZOS ACUMULADOS		R$ 32.795.224,92	R$ 32.795.224,92
LUCROS E PREJUÍZOS DO EXERCÍCIO		R$ 0,00	R$ 14.399.166,62
PASSIVO COMPENSATÓRIO		R$ 965.669,68	R$ 965.669,68
DEMONSTRAÇÕES DIVERSAS		R$ 965.669,68	R$ 965.669,68

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número 96.7E.38.F2.57.88.0B.75.7F.B5.BF.27.CC.6C.2B.DF.72.AD.DA.41-9, nos termos do Decreto nº 8.683/2016.

Este relatório foi gerado pelo Sistema Público de Escrituração Digital – Sped

Versão 10.1.8 do Visualizador

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 597

DEMONSTRAÇÃO DE RESULTADO DO EXERCÍCIO

Entidade:	TORINO INFORMATICA LTDA
Período da Escrituração:	01/01/2023 a 31/12/2023
CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	24
Período Selecionado:	01 de Janeiro de 2023 a 31 de Março de 2023

Descrição	Nota	Saldo anterior	Saldo atual
RECEITA OPERACIONAL BRUTA		R$ 222.438.523,91	R$ 132.337.376,88
RECEITA OPERACIONAL BRUTA		R$ 222.438.523,91	R$ 132.337.376,88
VENDAS DE MERCADORIAS		R$ 222.132.992,91	R$ 131.204.832,72
SERVIÇOS MERCADO INTERNO		R$ 305.531,00	R$ 1.132.544,16
(-) (-) DEDUÇÕES DA RECEITA BRUTA		R$ (50.099.185,39)	R$ (30.062.290,04)
(-) VENDAS CANCELADAS		R$ (8.019.430,12)	R$ (1.845.888,52)
(-) (-) CANCELAMENTOS E DEVOLUÇÕES		R$ (8.019.430,12)	R$ (1.845.888,52)
(-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVICOS		R$ (42.079.755,27)	R$ (28.216.401,52)
(-) (-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVICOS		R$ (42.079.755,27)	R$ (28.216.401,52)
(-) (-) CUSTO DOS PRODUTOS/MERCADORIAS/SERVICOS		R$ (151.212.257,91)	R$ (90.324.226,06)
(-) CUSTO DAS MERCADORIAS VENDIDAS		R$ (151.212.257,91)	R$ (90.324.226,06)
(-) (+/-) DESPESAS OPERACIONAIS		R$ (10.917.739,31)	R$ (2.433.874,54)
(-) DE VENDAS		R$ (1.305.221,82)	R$ (1.426.393,08)
(-) DESPESAS COM VEÍCULOS		R$ (14.193,22)	R$ (12.984,82)
(-) DESPESAS GERAIS		R$ (1.291.028,60)	R$ (1.413.408,26)
(-) ADMINISTRATIVAS		R$ (10.270.177,86)	R$ (7.615.694,75)
(-) DESPESAS COM PESSOAL		R$ (528.391,51)	R$ (458.035,58)
(-) OCUPAÇÃO		R$ (191.052,18)	R$ (201.474,32)
(-) DEPRECIAÇÕES E AMORTIZAÇÕES		R$ (45.091,87)	R$ (46.213,98)
(-) UTILIDADES E SERVIÇOS		R$ (68.540,42)	R$ (51.195,16)
(-) DESPESAS COM VEÍCULOS		R$ 0,00	R$ (56.877,69)
(-) DESPESAS GERAIS		R$ (9.304.050,00)	R$ (6.653.300,69)
(-) DESPESAS NÃO DEDUTÍVEIS		R$ (133.051,88)	R$ (148.597,33)
(-) DESPESAS FINANCEIRAS		R$ (1.495.387,59)	R$ (1.442.575,23)
(-) DESPESAS FINANCEIRAS		R$ (1.495.387,59)	R$ (1.442.575,23)
(-) RECEITAS FINANCEIRAS		R$ 2.237.085,29	R$ 8.218.473,14
RECEITAS FINANCEIRAS		R$ 2.237.085,29	R$ 8.218.473,14
(-) DESPESAS TRIBUTARIAS		R$ (84.037,33)	R$ (167.684,62)
(-) DESPESAS TRIBUTÁRIAS		R$ (84.037,33)	R$ (167.684,62)
OUTROS RESULTADOS OPERACIONAIS		R$ 10.381.306,09	R$ 9.400.650,45
OUTRAS RECEITAS OPERACIONAIS		R$ 10.381.306,09	R$ 9.514.950,45
RECEITAS OPERACIONAIS DIVERSAS		R$ 10.381.306,09	R$ 9.269.447,45
RECEITAS		R$ 0,00	R$ 245.503,00
(-) OUTRAS DESPESAS OPERACIONAIS		R$ 0,00	R$ (114.300,00)
(-) CUSTOS		R$ 0,00	R$ (114.300,00)
(-) PROVISÃO PARA CONTRIBUIÇÃO SOCIAL		R$ (764.309,57)	R$ (1.197.653,84)
(-) CSLL		R$ (764.309,57)	R$ (1.197.653,84)
(-) PROVISÃO PARA IMPOSTO DE RENDA		R$ (2.117.082,15)	R$ (3.320.816,23)
(-) IRPJ		R$ (2.117.082,15)	R$ (3.320.816,23)
(=) RESULTADO DO EXERCÍCIO		R$ 17.709.255,67	R$ 14.399.166,62

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número 96.7E.38.F2.57.88.0B.75.7F.B5.BF.27.CC.6C.2B.DF.72.AD.DA.41-9, nos termos do Decreto nº 8.683/2016.

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Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 598

MÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813)

DEMONSTRAÇÃO DAS MUTAÇÕES DO PATRIMÔNIO LÍQUIDO

Entidade:	TORINO INFORMATICA LTDA				
Período da Escrituração:	01/01/2023 a 31/12/2023	CNP	03.619.767/0001-91	Número de Ordem do Livro:	24
Período Selecionado:	01 de Janeiro de 2023 a 31 de Março de 2023				

Histórico	Código de Aglutinação das Contas de Patrimônio Líquido				Total (R$)
	Capital Social (R$)	Reservas de Lucros - Doações Subvenções P/Investim (R$)	Lucros Acumulados (R$)	Lucros do Exercício (R$)	
Saldo Inicial em 01.01.2023	2.000.000,00	66.592.038,25	32.795.224,92	0,00	101.387.263,17
Lucro Líquido do Exercício				14.399.166,62	14.399.166,62
Saldo Final em 31.03.2023	2.000.000,00	66.592.038,25	32.795.224,92	14.399.166,62	115.786.429,79
Notas					

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número 96.7E.38.F2.57.88.0B.75.7F.B5.BF.27.CC.6C.2B.DF.72.AD.DA.41-9, nos termos do Decreto nº 8.683/2016.

BALANÇO PATRIMONIAL

Entidade:	TORINO INFORMATICA LTDA
Período da Escrituração:	01/01/2023 a 31/12/2023
CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	24
Período Selecionado:	01 de Abril de 2023 a 30 de Junho de 2023

Descrição	Nota	Saldo Inicial	Saldo Final
ATIVO		R$ 202.694.993,25	R$ 175.469.533,57
CIRCULANTE		R$ 198.909.111,63	R$ 170.149.442,48
DISPONÍVEL		R$ 39.364.053,64	R$ 32.974.421,77
BENS NUMERÁRIOS		R$ 92,81	R$ 92,81
DEPÓSITOS BANCÁRIOS A VISTA		R$ 89.500,36	R$ 84.237,12
APLICAÇÕES DE LIQUIDEZ IMEDIATA		R$ 39.274.460,47	R$ 32.890.091,84
CLIENTES		R$ 71.016.853,87	R$ 48.116.056,18
DUPLICATAS A RECEBER		R$ 71.016.853,87	R$ 48.116.056,18
OUTROS CRÉDITOS		R$ 42.749.478,94	R$ 44.870.757,34
TÍTULOS A RECEBER		R$ 50.000,00	R$ 50.000,00
ADIANTAMENTOS A TERCEIROS		R$ 0,00	R$ 92.917,14
ADIANTAMENTOS A FUNCIONARIOS		R$ 41.636,74	R$ 61.306,08
LUCROS DISTRIBUIDOS NO EXERCÍCIO		R$ 270.000,00	R$ 540.000,00
TRIBUTOS A RECUPERAR		R$ 38.055.194,54	R$ 39.876.393,48
OUTROS CREDITOS		R$ 4.332.647,66	R$ 4.250.140,64
ESTOQUES		R$ 45.778.725,18	R$ 44.188.207,19
ESTOQUES DIVERSOS		R$ 45.778.725,18	R$ 44.188.207,19
NÃO CIRCULANTE		R$ 2.820.211,94	R$ 4.354.421,41
REALIZÁVEL A LONGO PRAZO		R$ 827.918,00	R$ 9.686,36
OUTROS CREDITOS		R$ 127.927,84	R$ 9.686,36
CRÉDITOS FISCAIS		R$ 699.990,16	R$ 0,00
IMOBILIZADO		R$ 1.992.293,94	R$ 4.344.735,05
IMÓVEIS		R$ 800.000,00	R$ 3.150.000,00
BENS EM OPERAÇÃO		R$ 2.496.978,69	R$ 2.499.822,24
IMOBILIZADO EM ANDAMENTO		R$ 97.850,25	R$ 159.957,13
(-) (-) DEPRECIAÇÃO/AMORTIZAÇÃO/EXAUSTÃO ACUMULADA		R$ (1.402.535,00)	R$ (1.465.044,32)
ATIVO COMPENSATÓRIO		R$ 965.669,68	R$ 965.669,68
DEMONSTRAÇÕES DIVERSAS		R$ 965.669,68	R$ 965.669,68
PASSIVO		R$ 202.694.993,25	R$ 175.469.533,57
CIRCULANTE		R$ 76.749.095,04	R$ 57.557.554,50
INSTITUIÇÕES FINANCEIRAS		R$ 13.715.626,57	R$ 19.600.972,51
Emprestimos		R$ 13.715.426,57	R$ 19.600.972,51
FINANCIAMENTOS A CURTO PRAZO - OUTROS		R$ 200,00	R$ 0,00
FORNECEDORES		R$ 53.924.079,59	R$ 29.034.501,65
FORNECEDORES NACIONAIS		R$ 53.924.079,59	R$ 29.034.501,65
OBRIGAÇÕES TRIBUTÁRIAS		R$ 3.420.180,00	R$ 3.326.959,39
IMPOSTOS E CONTRIBUIÇÕES A RECOLHER		R$ 3.385.139,13	R$ 3.271.747,42
TRIBUTOS RETIDOS A RECOLHER		R$ 35.040,87	R$ 55.211,97
OBRIGAÇÕES TRABALHISTAS E PREVIDENCIÁRIAS		R$ 99.492,65	R$ 123.601,05
OBRIGAÇÕES COM O PESSOAL		R$ 57.807,59	R$ 67.873,22
OBRIGAÇÕES PREVIDENCIÁRIAS		R$ 41.685,06	R$ 55.727,83
OUTRAS OBRIGAÇÕES		R$ 5.589.716,23	R$ 5.471.519,90
ADIANTAMENTOS DE CLIENTES		R$ 197.547,51	R$ 0,00
CONTAS A PAGAR		R$ 98.169,19	R$ 177.520,37
PROVISÃO PARA IRPJ E CSLL		R$ 5.293.999,53	R$ 5.293.999,53
NÃO CIRCULANTE		R$ 9.193.798,74	R$ 6.335.499,78
OBRIGAÇÕES A LONGO PRAZO		R$ 9.193.798,74	R$ 6.335.499,78
INSTITUIÇÕES FINANCEIRAS		R$ 9.193.798,74	R$ 6.335.499,78
EMPRÉSTIMOS		R$ 9.193.798,74	R$ 6.335.499,78
PATRIMÔNIO LÍQUIDO		R$ 115.786.429,79	R$ 110.610.809,61
CAPITAL SOCIAL		R$ 2.000.000,00	R$ 2.000.000,00
CAPITAL SUBSCRITO		R$ 2.000.000,00	R$ 2.000.000,00
RESERVAS DE LUCROS		R$ 66.592.038,25	R$ 66.592.038,25
LUCROS E PREJUÍZOS ACUMULADOS		R$ 47.194.391,54	R$ 42.018.771,36
LUCROS E PREJUÍZOS ACUMULADOS		R$ 32.795.224,92	R$ 32.012.727,74
LUCROS E PREJUÍZOS DO EXERCÍCIO		R$ 14.399.166,62	R$ 10.006.043,62
PASSIVO COMPENSATÓRIO		R$ 965.669,68	R$ 965.669,68
DEMONSTRAÇÕES DIVERSAS		R$ 965.669,68	R$ 965.669,68

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Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 600

DEMONSTRAÇÃO DE RESULTADO DO EXERCÍCIO

Entidade:	TORINO INFORMATICA LTDA
Período da Escrituração:	01/01/2023 a 31/12/2023
CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	24
Período Selecionado:	01 de Abril de 2023 a 30 de Junho de 2023

Descrição	Nota	Saldo anterior	Saldo atual
RECEITA OPERACIONAL BRUTA		R$ 132.337.376,88	R$ 77.310.148,51
RECEITA OPERACIONAL BRUTA		R$ 132.337.376,88	R$ 77.310.148,51
VENDAS DE MERCADORIAS		R$ 131.204.832,72	R$ 76.870.840,54
SERVIÇOS MERCADO INTERNO		R$ 1.132.544,16	R$ 439.307,97
(-) (-) DEDUÇÕES DA RECEITA BRUTA		R$ (30.062.290,04)	R$ (16.494.541,93)
(-) VENDAS CANCELADAS		R$ (1.845.888,52)	R$ (349.002,82)
(-) (-) CANCELAMENTOS E DEVOLUÇÕES		R$ (1.845.888,52)	R$ (349.002,82)
(-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVICOS		R$ (28.216.401,52)	R$ (16.145.539,11)
(-) (-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVICOS		R$ (28.216.401,52)	R$ (16.145.539,11)
(-) (-) CUSTO DOS PRODUTOS/MERCADORIAS/SERVICOS		R$ (90.324.226,06)	R$ (53.469.385,28)
(-) CUSTO DAS MERCADORIAS VENDIDAS		R$ (90.324.226,06)	R$ (53.469.385,28)
(-) (+/-) DESPESAS OPERACIONAIS		R$ (2.433.874,54)	R$ (16.188.280,94)
(-) DE VENDAS		R$ (1.426.393,08)	R$ (845.080,73)
(-) DESPESAS COM VEÍCULOS		R$ (12.984,82)	R$ (16.130,83)
(-) DESPESAS GERAIS		R$ (1.413.408,26)	R$ (828.949,90)
(-) ADMINISTRATIVAS		R$ (7.615.694,75)	R$ (14.522.630,59)
(-) DESPESAS COM PESSOAL		R$ (458.035,58)	R$ (623.998,62)
(-) OCUPAÇÃO		R$ (201.474,32)	R$ (197.397,34)
(-) DEPRECIAÇÕES E AMORTIZAÇÕES		R$ (46.213,98)	R$ (62.509,32)
(-) UTILIDADES E SERVIÇOS		R$ (51.195,16)	R$ (69.072,73)
DESPESAS COM VEÍCULOS		R$ (56.877,69)	R$ 0,00
(-) DESPESAS GERAIS		R$ (6.653.300,69)	R$ (13.446.284,57)
(-) DESPESAS NÃO DEDUTÍVEIS		R$ (148.597,33)	R$ (123.368,01)
(-) DESPESAS FINANCEIRAS		R$ (1.442.575,23)	R$ (1.639.638,59)
(-) DESPESAS FINANCEIRAS		R$ (1.442.575,23)	R$ (1.639.638,59)
(-) RECEITAS FINANCEIRAS		R$ 8.218.473,14	R$ 925.394,25
RECEITAS FINANCEIRAS		R$ 8.218.473,14	R$ 925.394,25
(-) DESPESAS TRIBUTARIAS		R$ (167.684,62)	R$ (106.325,28)
(-) DESPESAS TRIBUTÁRIAS		R$ (167.684,62)	R$ (106.325,28)
OUTROS RESULTADOS OPERACIONAIS		R$ 9.400.650,45	R$ 4.448.936,64
OUTRAS RECEITAS OPERACIONAIS		R$ 9.514.950,45	R$ 4.448.936,64
RECEITAS OPERACIONAIS DIVERSAS		R$ 9.269.447,45	R$ 4.448.936,64
RECEITAS		R$ 245.503,00	R$ 0,00
OUTRAS DESPESAS OPERACIONAIS		R$ (114.300,00)	R$ 0,00
CUSTOS		R$ (114.300,00)	R$ 0,00
PROVISÃO PARA CONTRIBUIÇÃO SOCIAL		R$ (1.197.653,84)	R$ 0,00
CSLL		R$ (1.197.653,84)	R$ 0,00
PROVISÃO PARA IMPOSTO DE RENDA		R$ (3.320.816,23)	R$ 0,00
IRPJ		R$ (3.320.816,23)	R$ 0,00
(-) (=) RESULTADO DO EXERCÍCIO		R$ 14.399.166,62	R$ (4.393.123,00)

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Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 601

INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI

DEMONSTRAÇÃO DAS MUTAÇÕES DO PATRIMÔNIO LÍQUIDO

Entidade:	TORINO INFORMATICA LTDA				
Período da Escrituração:	01/01/2023 a 31/12/2023	CNP	03.619.767/0001-91	Número de Ordem do Livro:	24
Período Selecionado:	01 de Abril de 2023 a 30 de Junho de 2023				

Histórico	Código de Aglutinação das Contas de Patrimônio Líquido					Total (R$)
	Capital Social (R$)	Reservas de Lucros - Doações Subvenções P/Investim (R$)	Lucros Acumulados (R$)	Lucros do Exercício (R$)	(-) Prejuízos do Execício (R$)	
Saldo Inicial em 01.04.2023	2.000.000,00	66.592.038,25	32.795.224,92	14.399.166,62	0,00	115.786.429,79
TRANSFERENCIA REF. SALDO ANTERIOR BLOQUEIO DE DEPOSITO			(-)82.507,02			(-)82.507,02
TRANSFERENCIA REF. SALDO DEVEDOR CREDITOS FISCAIS IRPJ			(-)699.990,16			(-)699.990,16
Lucro Líquido do Exercício				2.724.216,75		2.724.216,75
Prejuízo Líquido do Exercício					(-)7.117.339,75	(-)7.117.339,75
Saldo Final em 30.06.2023	2.000.000,00	66.592.038,25	32.012.727,74	17.123.383,37	(-)7.117.339,75	110.610.809,61
Notas						

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BALANÇO PATRIMONIAL

Entidade:	TORINO INFORMATICA LTDA
Período da Escrituração:	01/01/2023 a 31/12/2023
CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	24
Período Selecionado:	01 de Julho de 2023 a 30 de Setembro de 2023

Descrição	Nota	Saldo Inicial	Saldo Final
ATIVO		R$ 175.469.533,57	R$ 158.897.880,29
CIRCULANTE		R$ 170.149.442,48	R$ 152.837.489,47
DISPONÍVEL		R$ 32.974.421,77	R$ 32.924.089,82
BENS NUMERÁRIOS		R$ 92,81	R$ 92,81
DEPÓSITOS BANCÁRIOS A VISTA		R$ 84.237,12	R$ 101.981,03
APLICAÇÕES DE LIQUIDEZ IMEDIATA		R$ 32.890.091,84	R$ 32.822.015,98
CLIENTES		R$ 48.116.056,18	R$ 28.822.125,02
DUPLICATAS A RECEBER		R$ 48.116.056,18	R$ 28.822.125,02
OUTROS CRÉDITOS		R$ 44.870.757,34	R$ 45.582.164,61
TÍTULOS A RECEBER		R$ 50.000,00	R$ 0,00
ADIANTAMENTOS A TERCEIROS		R$ 92.917,14	R$ 141.891,72
ADIANTAMENTOS A FUNCIONARIOS		R$ 61.306,08	R$ 39.979,52
LUCROS DISTRIBUIDOS NO EXERCÍCIO		R$ 540.000,00	R$ 810.000,00
TRIBUTOS A RECUPERAR		R$ 39.876.393,48	R$ 40.340.152,73
OUTROS CREDITOS		R$ 4.250.140,64	R$ 4.250.140,64
ESTOQUES		R$ 44.188.207,19	R$ 45.495.352,86
ESTOQUES DIVERSOS		R$ 44.188.207,19	R$ 45.495.352,86
DESPESAS PAGAS ANTECIPADAMENTE		R$ 0,00	R$ 13.757,16
DESPESAS DE MESES SEGUINTES		R$ 0,00	R$ 13.757,16
NÃO CIRCULANTE		R$ 4.354.421,41	R$ 5.094.721,14
REALIZÁVEL A LONGO PRAZO		R$ 9.686,36	R$ 58.306,11
OUTROS CREDITOS		R$ 9.686,36	R$ 58.306,11
IMOBILIZADO		R$ 4.344.735,05	R$ 5.036.415,03
IMÓVEIS		R$ 3.150.000,00	R$ 3.150.000,00
BENS EM OPERAÇÃO		R$ 2.499.822,24	R$ 2.954.654,11
IMOBILIZADO EM ANDAMENTO		R$ 159.957,13	R$ 486.432,87
(-) (-) DEPRECIAÇÃO/AMORTIZAÇÃO/EXAUSTÃO ACUMULADA		R$ (1.465.044,32)	R$ (1.554.671,95)
ATIVO COMPENSATÓRIO		R$ 965.669,68	R$ 965.669,68
DEMONSTRAÇÕES DIVERSAS		R$ 965.669,68	R$ 965.669,68
PASSIVO		R$ 175.469.533,57	R$ 158.897.880,29
CIRCULANTE		R$ 57.557.554,50	R$ 39.051.375,19
INSTITUIÇÕES FINANCEIRAS		R$ 19.600.972,51	R$ 10.492.449,45
Emprestimos		R$ 19.600.972,51	R$ 10.492.449,45
FORNECEDORES		R$ 29.034.501,65	R$ 19.895.262,08
FORNECEDORES NACIONAIS		R$ 29.034.501,65	R$ 19.895.262,08
OBRIGAÇÕES TRIBUTÁRIAS		R$ 3.326.959,39	R$ 3.081.237,49
IMPOSTOS E CONTRIBUIÇÕES A RECOLHER		R$ 3.271.747,42	R$ 3.059.917,33
TRIBUTOS RETIDOS A RECOLHER		R$ 55.211,97	R$ 21.320,16
OBRIGAÇÕES TRABALHISTAS E PREVIDENCIÁRIAS		R$ 123.601,05	R$ 103.923,96
OBRIGAÇÕES COM O PESSOAL		R$ 67.873,22	R$ 59.992,30
OBRIGAÇÕES PREVIDENCIÁRIAS		R$ 55.727,83	R$ 43.931,66
OUTRAS OBRIGAÇÕES		R$ 5.471.519,90	R$ 5.478.502,21
CONTAS A PAGAR		R$ 177.520,37	R$ 184.502,68
PROVISÃO PARA IRPJ E CSLL		R$ 5.293.999,53	R$ 5.293.999,53
NÃO CIRCULANTE		R$ 6.335.499,78	R$ 4.704.028,88
OBRIGAÇÕES A LONGO PRAZO		R$ 6.335.499,78	R$ 4.704.028,88
INSTITUIÇÕES FINANCEIRAS		R$ 6.335.499,78	R$ 4.704.028,88
EMPRÉSTIMOS		R$ 6.335.499,78	R$ 4.704.028,88
PATRIMÔNIO LÍQUIDO		R$ 110.610.809,61	R$ 114.176.806,54
CAPITAL SOCIAL		R$ 2.000.000,00	R$ 2.000.000,00
CAPITAL SUBSCRITO		R$ 2.000.000,00	R$ 2.000.000,00
RESERVAS DE LUCROS		R$ 66.592.038,25	R$ 66.592.038,25
LUCROS E PREJUÍZOS ACUMULADOS		R$ 42.018.771,36	R$ 45.584.768,29
LUCROS E PREJUÍZOS ACUMULADOS		R$ 32.012.727,74	R$ 32.012.727,74
LUCROS E PREJUÍZOS DO EXERCÍCIO		R$ 10.006.043,62	R$ 13.572.040,55
PASSIVO COMPENSATÓRIO		R$ 965.669,68	R$ 965.669,68
DEMONSTRAÇÕES DIVERSAS		R$ 965.669,68	R$ 965.669,68

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número 96.7E.38.F2.57.88.0B.75.7F.B5.BF.27.CC.6C.2B.DF.72.AD.DA.41-9, nos termos do Decreto nº 8.683/2016.

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Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 603

DEMONSTRAÇÃO DE RESULTADO DO EXERCÍCIO

Entidade:	TORINO INFORMATICA LTDA		
Período da Escrituração:	01/01/2023 a 31/12/2023	CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	24		
Período Selecionado:	01 de Julho de 2023 a 30 de Setembro de 2023		

Descrição	Nota	Saldo anterior	Saldo atual
RECEITA OPERACIONAL BRUTA		R$ 77.310.148,51	R$ 66.670.185,06
RECEITA OPERACIONAL BRUTA		R$ 77.310.148,51	R$ 66.670.185,06
VENDAS DE MERCADORIAS		R$ 76.870.840,54	R$ 66.170.489,76
SERVIÇOS MERCADO INTERNO		R$ 439.307,97	R$ 499.695,30
(-) (-) DEDUÇÕES DA RECEITA BRUTA		R$ (16.494.541,93)	R$ (13.853.062,88)
(-) VENDAS CANCELADAS		R$ (349.002,82)	R$ (353.363,63)
(-) (-) CANCELAMENTOS E DEVOLUÇÕES		R$ (349.002,82)	R$ (353.363,63)
(-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVICOS		R$ (16.145.539,11)	R$ (13.499.699,25)
(-) (-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVICOS		R$ (16.145.539,11)	R$ (13.499.699,25)
(-) (-) CUSTO DOS PRODUTOS/MERCADORIAS/SERVICOS		R$ (53.469.385,28)	R$ (43.902.859,78)
(-) CUSTO DAS MERCADORIAS VENDIDAS		R$ (53.469.385,28)	R$ (43.902.859,78)
(-) (+/-) DESPESAS OPERACIONAIS		R$ (16.188.280,94)	R$ (8.664.460,97)
(-) DE VENDAS		R$ (845.080,73)	R$ (684.660,48)
(-) DESPESAS COM VEÍCULOS		R$ (16.130,83)	R$ (13.948,25)
(-) DESPESAS GERAIS		R$ (828.949,90)	R$ (670.712,23)
(-) ADMINISTRATIVAS		R$ (14.522.630,59)	R$ (7.122.387,38)
(-) DESPESAS COM PESSOAL		R$ (623.998,62)	R$ (664.232,06)
(-) OCUPAÇÃO		R$ (197.397,34)	R$ (196.881,24)
(-) DEPRECIAÇÕES E AMORTIZAÇÕES		R$ (62.509,32)	R$ (119.527,63)
(-) UTILIDADES E SERVIÇOS		R$ (69.072,73)	R$ (51.042,38)
(-) DESPESAS COM VEÍCULOS		R$ 0,00	R$ (2.099,33)
(-) DESPESAS GERAIS		R$ (13.446.284,57)	R$ (5.837.407,30)
(-) DESPESAS NÃO DEDUTÍVEIS		R$ (123.368,01)	R$ (251.197,44)
(-) DESPESAS FINANCEIRAS		R$ (1.639.638,59)	R$ (1.754.066,34)
(-) DESPESAS FINANCEIRAS		R$ (1.639.638,59)	R$ (1.754.066,34)
(-) RECEITAS FINANCEIRAS		R$ 925.394,25	R$ 919.946,40
RECEITAS FINANCEIRAS		R$ 925.394,25	R$ 919.946,40
(-) DESPESAS TRIBUTARIAS		R$ (106.325,28)	R$ (23.293,17)
(-) DESPESAS TRIBUTÁRIAS		R$ (106.325,28)	R$ (23.293,17)
OUTROS RESULTADOS OPERACIONAIS		R$ 4.448.936,64	R$ 3.834.094,33
OUTRAS RECEITAS OPERACIONAIS		R$ 4.448.936,64	R$ 3.834.094,33
RECEITAS OPERACIONAIS DIVERSAS		R$ 4.448.936,64	R$ 3.823.094,33
RECEITAS		R$ 0,00	R$ 11.000,00
(-) PROVISÃO PARA CONTRIBUIÇÃO SOCIAL		R$ 0,00	R$ (138.679,10)
(-) CSLL		R$ 0,00	R$ (138.679,10)
(-) PROVISÃO PARA IMPOSTO DE RENDA		R$ 0,00	R$ (379.219,73)
(-) IRPJ		R$ 0,00	R$ (379.219,73)
(=) RESULTADO DO EXERCÍCIO		R$ (4.393.123,00)	R$ 3.565.996,93

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Versão 10.1.8 do Visualizador

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 604

RMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813)

DEMONSTRAÇÃO DAS MUTAÇÕES DO PATRIMÔNIO LÍQUIDO

Entidade:	TORINO INFORMATICA LTDA				
Período da Escrituração:	01/01/2023 a 31/12/2023	CNP	03.619.767/0001-91	Número de Ordem do Livro:	24
Período Selecionado:	01 de Julho de 2023 a 30 de Setembro de 2023				

Histórico	Código de Aglutinação das Contas de Patrimônio Líquido					Total (R$)
	Capital Social (R$)	Reservas de Lucros - Doações Subvenções P/Investim (R$)	Lucros Acumulados (R$)	Lucros do Exercício (R$)	(-) Prejuízos do Execício (R$)	
Saldo Inicial em 01.07.2023	2.000.000,00	66.592.038,25	32.012.727,74	17.123.383,37	(-)7.117.339,75	110.610.809,61
Lucro Líquido do Exercício				9.496.451,69		9.496.451,69
Prejuízo Líquido do Exercício					(-)5.930.454,76	(-)5.930.454,76
Saldo Final em 30.09.2023	2.000.000,00	66.592.038,25	32.012.727,74	26.619.835,06	(-)13.047.794,51	114.176.806,54
Notas						

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BALANÇO PATRIMONIAL

Entidade:	TORINO INFORMATICA LTDA
Período da Escrituração:	01/01/2023 a 31/12/2023
CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	24
Período Selecionado:	01 de Outubro de 2023 a 31 de Dezembro de 2023

Descrição	Nota	Saldo Inicial	Saldo Final
ATIVO		R$ 158.897.880,29	R$ 227.511.321,66
CIRCULANTE		R$ 152.837.489,47	R$ 221.326.050,02
DISPONÍVEL		R$ 32.924.089,82	R$ 62.956.554,64
BENS NUMERÁRIOS		R$ 92,81	R$ 92,81
DEPÓSITOS BANCÁRIOS A VISTA		R$ 101.981,03	R$ 107.380,00
APLICAÇÕES DE LIQUIDEZ IMEDIATA		R$ 32.822.015,98	R$ 62.849.081,83
CLIENTES		R$ 28.822.125,02	R$ 46.784.993,79
DUPLICATAS A RECEBER		R$ 28.822.125,02	R$ 46.784.993,79
OUTROS CRÉDITOS		R$ 45.582.164,61	R$ 46.973.470,84
ADIANTAMENTOS A TERCEIROS		R$ 141.891,72	R$ 182.185,20
ADIANTAMENTOS A FUNCIONARIOS		R$ 39.979,52	R$ 21.696,66
LUCROS DISTRIBUIDOS NO EXERCÍCIO		R$ 810.000,00	R$ 0,00
TRIBUTOS A RECUPERAR		R$ 40.340.152,73	R$ 42.506.783,20
OUTROS CREDITOS		R$ 4.250.140,64	R$ 4.262.805,78
ESTOQUES		R$ 45.495.352,86	R$ 64.585.200,54
ESTOQUES DIVERSOS		R$ 45.495.352,86	R$ 64.585.200,54
DESPESAS PAGAS ANTECIPADAMENTE		R$ 13.757,16	R$ 25.830,21
DESPESAS DE MESES SEGUINTES		R$ 13.757,16	R$ 25.830,21
NÃO CIRCULANTE		R$ 5.094.721,14	R$ 5.219.601,96
REALIZÁVEL A LONGO PRAZO		R$ 58.306,11	R$ 3.171,37
OUTROS CREDITOS		R$ 58.306,11	R$ 3.171,37
IMOBILIZADO		R$ 5.036.415,03	R$ 5.216.430,59
IMÓVEIS		R$ 3.150.000,00	R$ 3.150.000,00
BENS EM OPERAÇÃO		R$ 2.954.654,11	R$ 2.954.654,11
IMOBILIZADO EM ANDAMENTO		R$ 486.432,87	R$ 777.750,09
(-) (-) DEPRECIAÇÃO/AMORTIZAÇÃO/EXAUSTÃO ACUMULADA		R$ (1.554.671,95)	R$ (1.665.973,61)
ATIVO COMPENSATÓRIO		R$ 965.669,68	R$ 965.669,68
DEMONSTRAÇÕES DIVERSAS		R$ 965.669,68	R$ 965.669,68
PASSIVO		R$ 158.897.880,29	R$ 227.511.321,66
CIRCULANTE		R$ 39.051.375,19	R$ 102.546.859,91
INSTITUIÇÕES FINANCEIRAS		R$ 10.492.449,45	R$ 11.219.435,89
Emprestimos		R$ 10.492.449,45	R$ 11.219.435,89
FORNECEDORES		R$ 19.895.262,08	R$ 79.562.609,78
FORNECEDORES NACIONAIS		R$ 19.895.262,08	R$ 79.562.609,78
OBRIGAÇÕES TRIBUTÁRIAS		R$ 3.081.237,49	R$ 3.827.333,82
IMPOSTOS E CONTRIBUIÇÕES A RECOLHER		R$ 3.059.917,33	R$ 3.773.957,10
TRIBUTOS RETIDOS A RECOLHER		R$ 21.320,16	R$ 53.376,72
OBRIGAÇÕES TRABALHISTAS E PREVIDENCIÁRIAS		R$ 103.923,96	R$ 123.276,30
OBRIGAÇÕES COM O PESSOAL		R$ 59.992,30	R$ 68.283,94
OBRIGAÇÕES PREVIDENCIÁRIAS		R$ 43.931,66	R$ 54.992,36
OUTRAS OBRIGAÇÕES		R$ 5.478.502,21	R$ 7.814.204,12
ADIANTAMENTOS DE CLIENTES		R$ 0,00	R$ 2.055.100,75
CONTAS A PAGAR		R$ 184.502,68	R$ 215.007,98
PROVISÃO PARA IRPJ E CSLL		R$ 5.293.999,53	R$ 5.544.095,39
NÃO CIRCULANTE		R$ 4.704.028,88	R$ 3.628.143,80
OBRIGAÇÕES A LONGO PRAZO		R$ 4.704.028,88	R$ 3.628.143,80
INSTITUIÇÕES FINANCEIRAS		R$ 4.704.028,88	R$ 3.628.143,80
EMPRÉSTIMOS		R$ 4.704.028,88	R$ 3.628.143,80
PATRIMÔNIO LÍQUIDO		R$ 114.176.806,54	R$ 120.370.648,27
CAPITAL SOCIAL		R$ 2.000.000,00	R$ 2.000.000,00
CAPITAL SUBSCRITO		R$ 2.000.000,00	R$ 2.000.000,00
RESERVAS DE LUCROS		R$ 66.592.038,25	R$ 81.203.204,45
LUCROS E PREJUÍZOS ACUMULADOS		R$ 45.584.768,29	R$ 37.167.443,82
LUCROS E PREJUÍZOS ACUMULADOS		R$ 32.012.727,74	R$ 37.167.443,82
LUCROS E PREJUÍZOS DO EXERCÍCIO		R$ 13.572.040,55	R$ 0,00
PASSIVO COMPENSATÓRIO		R$ 965.669,68	R$ 965.669,68
DEMONSTRAÇÕES DIVERSAS		R$ 965.669,68	R$ 965.669,68

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Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 606

DEMONSTRAÇÃO DE RESULTADO DO EXERCÍCIO

Entidade:	TORINO INFORMATICA LTDA		
Período da Escrituração:	01/01/2023 a 31/12/2023	CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	24		
Período Selecionado:	01 de Outubro de 2023 a 31 de Dezembro de 2023		

Descrição	Nota	Saldo anterior	Saldo atual
RECEITA OPERACIONAL BRUTA		R$ 66.670.185,06	R$ 137.237.599,77
RECEITA OPERACIONAL BRUTA		R$ 66.670.185,06	R$ 137.237.599,77
VENDAS DE MERCADORIAS		R$ 66.170.489,76	R$ 137.045.584,16
SERVIÇOS MERCADO INTERNO		R$ 499.695,30	R$ 192.015,61
(-) (-) DEDUÇÕES DA RECEITA BRUTA		R$ (13.853.062,88)	R$ (38.624.883,61)
(-) VENDAS CANCELADAS		R$ (353.363,63)	R$ (13.190.776,93)
(-) (-) CANCELAMENTOS E DEVOLUÇÕES		R$ (353.363,63)	R$ (13.190.776,93)
(-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVICOS		R$ (13.499.699,25)	R$ (25.434.106,68)
(-) (-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVICOS		R$ (13.499.699,25)	R$ (25.434.106,68)
(-) (-) CUSTO DOS PRODUTOS/MERCADORIAS/SERVICOS		R$ (43.902.859,78)	R$ (84.925.762,51)
(-) CUSTO DAS MERCADORIAS VENDIDAS		R$ (43.902.859,78)	R$ (84.925.762,51)
(-) (+/-) DESPESAS OPERACIONAIS		R$ (8.664.460,97)	R$ (8.152.546,43)
(-) DE VENDAS		R$ (684.660,48)	R$ (666.731,14)
(-) DESPESAS COM VEÍCULOS		R$ (13.948,25)	R$ (18.470,12)
(-) DESPESAS GERAIS		R$ (670.712,23)	R$ (648.261,02)
(-) ADMINISTRATIVAS		R$ (7.122.387,38)	R$ (7.531.201,07)
(-) DESPESAS COM PESSOAL		R$ (664.232,06)	R$ (662.215,66)
(-) OCUPAÇÃO		R$ (196.881,24)	R$ (196.785,30)
(-) DEPRECIAÇÕES E AMORTIZAÇÕES		R$ (119.527,63)	R$ (111.301,66)
(-) UTILIDADES E SERVIÇOS		R$ (51.042,38)	R$ (53.968,13)
DESPESAS COM VEÍCULOS		R$ (2.099,33)	R$ 0,00
(-) DESPESAS GERAIS		R$ (5.837.407,30)	R$ (6.380.963,35)
(-) DESPESAS NÃO DEDUTÍVEIS		R$ (251.197,44)	R$ (125.966,97)
(-) DESPESAS FINANCEIRAS		R$ (1.754.066,34)	R$ (1.040.363,68)
(-) DESPESAS FINANCEIRAS		R$ (1.754.066,34)	R$ (1.040.363,68)
(-) RECEITAS FINANCEIRAS		R$ 919.946,40	R$ 1.148.320,28
RECEITAS FINANCEIRAS		R$ 919.946,40	R$ 1.148.320,28
(-) DESPESAS TRIBUTARIAS		R$ (23.293,17)	R$ (62.570,82)
(-) DESPESAS TRIBUTÁRIAS		R$ (23.293,17)	R$ (62.570,82)
OUTROS RESULTADOS OPERACIONAIS		R$ 3.834.094,33	R$ 3.847.708,98
OUTRAS RECEITAS OPERACIONAIS		R$ 3.834.094,33	R$ 3.847.708,98
RECEITAS OPERACIONAIS DIVERSAS		R$ 3.823.094,33	R$ 3.847.708,98
RECEITAS		R$ 11.000,00	R$ 0,00
(-) PROVISÃO PARA CONTRIBUIÇÃO SOCIAL		R$ (138.679,10)	R$ (555.611,69)
(-) CSLL		R$ (138.679,10)	R$ (555.611,69)
(-) PROVISÃO PARA IMPOSTO DE RENDA		R$ (379.219,73)	R$ (1.537.365,81)
(-) IRPJ		R$ (379.219,73)	R$ (1.537.365,81)
(=) RESULTADO DO EXERCÍCIO		R$ 3.565.996,93	R$ 7.289.138,70

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Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 607

INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2

DEMONSTRAÇÃO DAS MUTAÇÕES DO PATRIMÔNIO LÍQUIDO

Entidade:	TORINO INFORMATICA LTDA				
Período da Escrituração:	01/01/2023 a 31/12/2023	CNP	03.619.767/0001-91	Número de Ordem do Livro:	24
Período Selecionado:	01 de Outubro de 2023 a 31 de Dezembro de 2023				

Histórico	Código de Aglutinação das Contas de Patrimônio Líquido					Total (R$)
	Capital Social (R$)	Reservas de Lucros - Doações Subvenções P/Investim (R$)	Lucros Acumulados (R$)	Lucros do Exercício (R$)	(-) Prejuízos do Execício (R$)	
Saldo Inicial em 01.10.2023	2.000.000,00	66.592.038,25	32.012.727,74	26.619.835,06	(-)13.047.794,51	114.176.806,54
Lucro Líquido do Exercício				14.871.666,68		14.871.666,68
Prejuízo Líquido do Exercício					(-)7.582.527,98	(-)7.582.527,98
Transferencia Resultado Exercicio para Lucros Acumulados		14.611.166,20	26.880.335,54	(-)41.491.501,74		0,00
Transferencia Prejuizo do Exercicio			(-)20.630.322,49		20.630.322,49	0,00
Distribuicao de Lucros a Socios - DENISE DO AMARAL RISSIO			(-)555.296,97			(-)555.296,97
Distribuicao de Lucros a Socios - RODRIGO DO AMARAL RISSIO			(-)540.000,00			(-)540.000,00
Saldo Final em 31.12.2023	2.000.000,00	81.203.204,45	37.167.443,82	0,00	0,00	120.370.648,27
Notas						

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JUCESP PROTOCOLO
0.942.567/25-0

TORINO INFORMÁTICA LTDA
CNPJ: 03.619.767/0001-91 Inscrição Estadual: 669.369.347-110

TERMO DE ABERTURA

Nome da Empresa.....: TORINO INFORMATICA LTDA

Endereço.....: Avenida RITA DE CARVALHO MONTEIRO, 120

Complemento.....: Numero 130

Cidade.....: Sorocaba

CEP.....: 18.085-750

Bairro.....: RETIRO SÃO JOAO

Estado.....: SP

Registrado na Junta.....: 35218195101

Data do Registro.....: 01/02/2000

Inscrição Estadual.....: 669.369.347-110

Inscrição Municipal.....:

CNPJ.....: 03.619.767/0001-91

Encerramento Exercício Social: 31/12/2024

Sorocaba (SP), 01 de janeiro de 2024

DENISE DO AMARAL RISSIO
CPF
DATA

DENISE DO AMARAL RISSIO
Sócia Administradora
CPF: 246.137.578-00

JOSÉ DINI FILHO
CRC: 1-SP-067764/O-3 - Técnico Contábil
CPF: 405.473.708-06

DRE

Valores expressos em Reais (R$)

Discriminação	Período de 01/2024 a 12/2024 DRE	Período de 01/2024 a 12/2024 Valores do Exercício
RECEITA OPERACIONAL BRUTA		
RECEITA OPERACIONAL BRUTA		
VENDAS DE MERCADORIAS	576.278.063,39	576.278.063,39
SERVIÇOS MERCADO INTERNO	1.430.771,99	1.430.771,99
***** Total RECEITA OPERACIONAL BRUTA**	**577.708.835,38**	**577.708.835,38**
***** Total RECEITA OPERACIONAL BRUTA**	**577.708.835,38**	**577.708.835,38**
(-) DEDUÇÕES DA RECEITA BRUTA		
VENDAS CANCELADAS		
(-) CANCELAMENTOS E DEVOLUÇÕES	(37.943.207,00)	(37.943.207,00)
***** Total VENDAS CANCELADAS**	**(37.943.207,00)**	**(37.943.207,00)**
IMPOSTOS INCIDENTES SOBRE VENDAS E SERVIÇOS		
(-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVIÇOS	(118.350.006,91)	(118.350.006,91)
***** Total IMPOSTOS INCIDENTES SOBRE VENDAS E SERVIÇOS**	**(118.350.006,91)**	**(118.350.006,91)**
***** Total (-) DEDUÇÕES DA RECEITA BRUTA**	**(156.293.213,91)**	**(156.293.213,91)**
(=) RECEITA OPERACIONAL LIQUIDA		
***** Total (=) RECEITA OPERACIONAL LIQUIDA**	**421.415.621,47**	**421.415.621,47**
(-) CUSTO DOS PRODUTOS/MERCADORIAS/SERVIÇOS		
CUSTO DAS MERCADORIAS VENDIDAS	(344.396.285,92)	(344.396.285,92)
***** Total (-) CUSTO DOS PRODUTOS/MERCADORIAS/SERVIÇOS**	**(344.396.285,92)**	**(344.396.285,92)**
(=) LUCRO BRUTO		
***** Total (=) LUCRO BRUTO**	**77.019.335,55**	**77.019.335,55**
(+/-) DESPESAS OPERACIONAIS		
DE VENDAS		
DESPESAS COM VEÍCULOS	(77.600,95)	(77.600,95)
DESPESAS GERAIS	(9.193.450,06)	(9.193.450,06)
***** Total DE VENDAS**	**(9.271.057,01)**	**(9.271.057,01)**
ADMINISTRATIVAS		
DESPESAS COM PESSOAL	(2.684.438,28)	(2.684.438,28)
PROPAGANDA E PUBLICIDADE	(550,00)	(550,00)
OCUPAÇÃO	(797.301,00)	(797.301,00)
DEPRECIAÇÕES E AMORTIZAÇÕES	(442.065,79)	(442.065,79)
UTILIDADES E SERVIÇOS	(236.084,82)	(236.084,82)
DESPESAS GERAIS	(49.945.720,46)	(49.945.720,46)
DESPESAS NÃO DEDUTÍVEIS	(910.574,56)	(910.574,56)
***** Total ADMINISTRATIVAS**	**(55.017.314,91)**	**(55.017.314,91)**
COM VEICULOS		
DESPESAS GERAIS	(1.441,98)	(1.441,98)
***** Total COM VEICULOS**	**(1.441,98)**	**(1.441,98)**
DESPESAS FINANCEIRAS		
DESPESAS FINANCEIRAS	(19.991.361,35)	(19.991.361,35)
***** Total DESPESAS FINANCEIRAS**	**(19.991.361,35)**	**(19.991.361,35)**
(-) RECEITAS FINANCEIRAS		
RECEITAS FINANCEIRAS	3.539.333,32	3.539.333,32
***** Total (-) RECEITAS FINANCEIRAS**	**3.539.333,32**	**3.539.333,32**
DESPESAS TRIBUTARIAS		

DRE

Valores expressos em Reais (R$)

Discriminação	Periodo de 01/2024 a 12/2024 DRE	Periodo de 01/2024 a 12/2024 Valores do Exercício
DESPESAS TRIBUTÁRIAS	(1.388.802,94)	(1.388.802,94)
*** Total DESPESAS TRIBUTARIAS	(1.388.802,94)	(1.388.802,94)
*** Total (+/-) DESPESAS OPERACIONAIS	(82.130.644,87)	(82.130.644,87)
(=) PREJUIZO OPERACIONAL LIQUIDO		
*** Total (=) PREJUIZO OPERACIONAL LIQUIDO	5.111.308,32	5.111.308,32
OUTROS RESULTADOS OPERACIONAIS		
OUTRAS RECEITAS OPERACIONAIS		
RECEITAS OPERACIONAIS DIVERSAS	32.556.560,18	32.556.560,18
RECEITAS	240.000,00	240.000,00
*** Total OUTRAS RECEITAS OPERACIONAIS	32.796.560,18	32.796.560,18
OUTRAS DESPESAS OPERACIONAIS		
CUSTOS	(299.966,67)	(299.966,67)
*** Total OUTRAS DESPESAS OPERACIONAIS	(299.966,67)	(299.966,67)
*** Total OUTROS RESULTADOS OPERACIONAIS	32.496.593,51	32.496.593,51
RESULTADO ANTES DA CS E IR		
*** Total RESULTADO ANTES DA CS E IR	27.385.284,19	27.385.284,19
PROVISÃO PARA CONTRIBUIÇÃO SOCIAL		
CSLL	(1.049.810,79)	(1.049.810,79)
*** Total PROVISÃO PARA CONTRIBUIÇÃO SOCIAL	(1.049.810,79)	(1.049.810,79)
PROVISÃO PARA IMPOSTO DE RENDA		
IRPJ	(2.904.141,08)	(2.904.141,08)
*** Total PROVISÃO PARA IMPOSTO DE RENDA	(2.904.141,08)	(2.904.141,08)
(=) LUCRO LIQUIDO DO EXERCICIO		
*** Total (=) LUCRO LIQUIDO DO EXERCICIO	23.431.332,32	23.431.332,32

DENISE DO AMARAL RISSIO
CPF 346137578**
DATA 28/04/2025

DENISE DO AMARAL RISSIO
Sócia Administradora
CPF: 346.137.578-00

JOSÉ DINI FILHO
CRC: 1-SP-067764/O-3 - Técnico Contábil
CPF: 408.473.708-06

BALANÇO PATRIMONIAL

Valores expressos em Reais (R$)

ATIVO	331.098.692,22	PASSIVO	331.098.692,22
CIRCULANTE	323.926.391,61	CIRCULANTE	188.484.221,39
DISPONÍVEL	73.746.473,81	INSTITUIÇÕES FINANCEIRAS	95.028.340,07
BENS NUMERÁRIOS	92,81	Empréstimos	95.028.340,07
Caixa	92,81	Banco do Brasil S/A	10.000.000,00
DEPÓSITOS BANCÁRIOS A VISTA	246.329,88	Banco Itaú S/A	30.300.000,00
Banco Bandeirantes	1.054,76	Banco Santander S/A	3.428.210,88
Banco Banrisul	577,12	Caixa Econômica Federal	51.300.129,19
Banco Bradesco S/A	20.296,66	FORNECEDORES	87.143.384,79
Banco Itaú S/A	224.196,34	FORNECEDORES NACIONAIS	87.143.384,79
Caixa Economica Federal	205,00	OBRIGAÇÕES TRIBUTÁRIAS	3.869.827,53
APLICAÇÕES DE LIQUIDEZ IMEDIATA	73.500.051,12	IMPOSTOS E CONTRIBUIÇÕES A RECOLHER	3.827.066,99
Banco Bradesco S/A	1.482.264,89	ICMS a Recolher	764.770,97
Banco do Brasil Aplic Diaria	47.119.889,38	ICMS Substituição Tributária a Recolher	3.036.886,29
Banco do Brasil S/A	7.343.778,17	IRRF a Recolher	3.303,44
Banco Itaú S/A	6.886.441,72	IRRF sobre Trabalho Assalariado	16.534,22
Banco Safra Poupança	1.937,95	ISS a Recolher	5.572,07
Banco Safra S/A	815.170,53	TRIBUTOS RETIDOS A RECOLHER	42.760,54
Banco Santander	1.471.159,71	CSRF Retido a Recolher	41.118,94
Caixa Econômica	8.305.158,82	INSS Retido a Recolher	410,74
Caixa Economica Federal	74.249,95	ISS Retido a Recolher	1.230,86
CLIENTES	111.159.685,49	OBRIGAÇÕES TRABALHISTAS E	136.174,84
DUPLICATAS A RECEBER	111.159.685,49	OBRIGAÇÕES COM O PESSOAL	71.633,93
OUTROS CRÉDITOS	59.009.670,84	Salários e Ordenados a Pagar	67.839,90
ADIANTAMENTOS A TERCEIROS	1.158.445,13	Pró Labore a Pagar	2.513,36
Adiantamentos a Fornecedores	706.943,70	Pensão Alimentícia a Repassar	1.280,67
Adiantamentos de Importações	451.501,43	OBRIGAÇÕES PREVIDENCIÁRIAS	64.540,91
ADIANTAMENTOS A FUNCIONARIOS	15.104,02	INSS a Recolher	48.018,54
Adiantamentos de Férias	15.104,02	FGTS a Recolher	16.298,23
TRIBUTOS A RECUPERAR	53.026.872,13	Contribuição Sindical a Recolher	14,14
ICMS a Recuperar	9.282.535,25	Contr/CONFED/SIND/ASSIST	200,00
IRRF a Recuperar	12.770,09	PROVISÕES	10,00
PIS a Recuperar	165.070,07	Provisão Para 13o Salário	10,00
Cofins a Recuperar	339.421,23	OUTRAS OBRIGAÇÕES	2.306.494,16
CSLL a Recuperar	1.901,80	ADIANTAMENTOS DE CLIENTES	1.940.203,44
INSS a Recuperar	32.644,36	Faturamento Para Entrega Futura	1.940.203,44
IRRF Sobre Aplicações Financeiras	1.220.005,43	CONTAS A PAGAR	116.194,86
IR Retido	3.966.843,55	Energia Elétrica a Pagar	1.785,71
Pis Retido	5.699.332,97	Fretes a Pagar	98.887,54
Cofins Retido	26.468.882,02	Telefones a Pagar	15.521,61
CSRF a Recuperar	86.183,93	PROVISÃO PARA IRPJ E CSLL	250.095,86
CSLL Retido na Fonte	5.717.892,67	Provisão Para Imposto de Renda	250.095,86
Creditos ICMS - CIAP	31.833,10	NÃO CIRCULANTE	116.599,14
Outros Impostos a Recuperar	1.355,66	OBRIGAÇÕES A LONGO PRAZO	116.599,14
OUTROS CREDITOS	4.809.249,56	INSTITUIÇÕES FINANCEIRAS	116.599,14
Depósito Judicial	4.809.249,56	EMPRÉSTIMOS	116.599,14
ESTOQUES	79.979.677,19	Consorcios a Pagar	116.599,14
ESTOQUES DIVERSOS	79.979.677,19	PATRIMÔNIO LÍQUIDO	142.497.871,69
Mercadorias Para Revenda	74.667.848,22	CAPITAL SOCIAL	2.000.000,00
Estoque em Poder de Terceiros	5.311.828,97	CAPITAL SUBSCRITO	2.000.000,00
DESPESAS PAGAS ANTECIPADAMENTE	30.884,28	Capital Social	2.000.000,00
DESPESAS DE MESES SEGUINTES	30.884,28	RESERVAS DE LUCROS	81.203.204,45
Prêmios de Seguros a Apropriar	30.884,28	Reservas de Lucros - Doações Subvenções P/Investim	81.203.204,45
NÃO CIRCULANTE	7.172.300,61	LUCROS E PREJUÍZOS ACUMULADOS	59.294.667,24

BALANÇO PATRIMONIAL

Valores expressos em Reais (R$)

IMOBILIZADO	7.172.300,61	LUCROS E PREJUÍZOS ACUMULADOS	35.863.334,92
IMÓVEIS	5.650.000,00	Lucros Acumulados	35.863.334,92
Terrenos	2.500.000,00	LUCROS E PREJUÍZOS DO EXERCÍCIO	23.431.332,32
Imóveis	3.150.000,00	Lucros do Exercício	62.852.836,29
BENS EM OPERAÇÃO	2.504.704,11	(-) Prejuízos do Exercício	(39.421.503,97)
Linhas Telefônicas	215,04		
Equipamentos para Processamento de Dados	213.443,87		
Instalações	85.428,36		
Máquinas, Aparelhos e Equipamentos	303.054,31		
Marcas, Direitos e Patentes Industriais	100.000,00		
Móveis e Utensílios	380.254,62		
Veículos	1.422.307,91		
IMOBILIZADO EM ANDAMENTO	976.252,57		
Consórcios de Bens	44.875,68		
Consórcio de Bens - Santander	72.310,76		
Benfeitorias em Bens Próprios	859.066,13		
(-) DEPRECIAÇÃO/AMORTIZAÇÃO/EXAUSTÃO	(1.958.656,07)		
(-) Deprec. Aparelhos Telefônicos	(215,04)		
(-) Deprec. Equipamentos p/Processamento de Dados	(195.610,21)		
(-) Deprec. Instalações	(85.428,41)		
(-) Deprec. Máquinas, Aparelhos e Equipamentos	(86.950,58)		
(-) Deprec. Móveis e Utensílios	(367.039,05)		
(-) Deprec. Veículos	(873.937,22)		
(-) Depreciacao Outras Imobilizacoes	(349.475,56)		

DENISE DO AMARAL RISSIO
Sócia Administradora
CPF: 246.137.578-00

JOSÉ DINI FILHO
CRC: 1-SP-067764/O-3 - Técnico Contábil
CPF: 405.473.708-06

TRANSCRIÇÃO DO BALANÇO PATRIMONIAL ENCERRADO EM 31/12/2024

ATIVO		PASSIVO	
1, ATIVO CIRCULANTE (AC)	**323.926.391,61**	**1, PASSIVO CIRCULANTE (PC)**	**186.543.648,93**
DISPONÍVEL	73.746.473,81	**2, PASSIVO NÃO CIRCULANTE (PNC)**	**116.599,14**
REALIZÁVEL A CURTO PRAZO	(11.150.865,49		
ESTOQUES	-79.979.477,19	**3, RESULTADOS DE EXERCÍCIOS FUTUROS**	**1.940.203,44**
OUTROS CREDITOS	59.040.555,12		
		4, PATRIMONIO LIQUIDO (PL)	**142.498.240,71**
2, ATIVO NÃO CIRCULANTE (ANC)	**7.172.300,61**	CAPITAL INTEGRALIZADO	2.000.000,00
3, PERMANENTE (AP)	**7.172.300,61**		
REALIZÁVEL A LONGO PRAZO	-	RESERVAS DE CAPITAL	-
INVESTIMENTOS	976.252,57	RESERVAS DE INCENTIVOS FISCAIS	106.787.181,93
IMOBILIZADO	**8.154.704,11**	RESERVAS DE LUCROS	-
		RESULTADO EXERCICIO	(2.152.276,14)
		(+) LUCROS ACUMULADOS	35.863.334,92
(-) DEPRECIAÇÃO	1.958.656,07		
TOTAL DO ATIVO (AT)	**331.098.692,22**	**TOTAL DO PASSIVO**	**331.098.692,22**

ÍNDICE DE LIQUIDEZ GERAL	
ILG = (AC + ANC) / (PC + PNC) =	1,77
ÍNDICE DE SOLVÊNCIA	
IS = (AC + ANC + AP) / (PC + PNC) =	1,81
ÍNDICE DE LIQUIDEZ CORRENTE	
ILC = AC / PC =	1,74
ÍNDICE DE ENDIVIDAMENTO	
IE = (PC + PNC) / (AC + ANC + AP) =	0,55
GRAU DE ENDIVIDAMENTO DO PATRIMONIO LIQUIDO	
GEPL = (PC + PNC) / PL =	1,31
QUOC.ENTRE PATR. LIQ. E CAP.INTEGR.	71,25
QUOCIENTE PL/PC + PNC	0,76
AP/PL=	0,05
PC/(PC+PNC)=	1,00

DENISE DO AMARAL RISSO
CPF 24613757830 DATA 28/04/2025

TORINO INFORMÁTICA
Denise do Amaral
Sócia
CPF Nº 246.137.578-

DINI E TREVISAN ASS.CONT.TRAB. LTDA.
Jose Dini Filho
TEC. CRC 057.764/O-
CPF Nº 406.473.708-

Dini e Trevisan
ASSESSORIA CONTÁBIL

TORINO INFORMATICA LTDA
CNPJ: 03.619.767/0001-91
NOTAS EXPLICATIVAS AS DEMONSTRAÇÕES FINANCEIRAS DO EXERCÍCIO FINDO EM 31.12.2024

1) CONTEXTO OPERACIONAL

A empresa tem como principal atividade o **Comercio atacadista de produtos de informática.**

2) APRESENTAÇÃO DAS DEMONSTRAÇÕES FINANCEIRAS

As demonstrações financeiras foram elaboradas com base nas práticas contábeis de acordo com a **ITG 2000(R1) – ESCRITURAÇÃO CONTÁBIL.**

3) PRINCIPAIS PRÁTICAS CONTÁBEIS

A) Apuração do Resultado, ativos e passivos circulantes e não-circulantes;

B) Duplicatas a Receber somam em 31.12.2024 o valor de R$ 111.159.685,49;

C) Outros Créditos a Receber somam em 31.12.2024 o valor de R$ 59.009.670,84;

D) O resultado é apurado pelo regime de competência;

Os ativos e passivos circulantes e não circulantes, quando aplicável incluem os encargos incorridos e auferidos até a data do balanço e são reduzidos, mediante provisão aos seus valores prováveis de realização.

E) ESTOQUES

Os estoques de matérias-primas e produtos para revenda estão avaliados pelo valor médio das compras diminuídos dos impostos e somam em 31.12.2024 o valor de R$ 74.667.848,22.

Estoques em poder de terceiros sem previsão de entrega de mercadorias, em 31.12.2024 é de R$ 5.311.828,97.

F) IMOBILIZADO

Registrado ao custo de aquisição, as depreciações são computadas pelo método LINEAR com base em taxas que levam em consideração a vida útil do bem.

G) IMPOSTO DE RENDA E CONTRIBUIÇÃO SOCIAL

Imposto de renda, calculado a alíquota de 15% sobre o lucro tributável acrescido do adicional de 10%, cujo o calor do faturamento ultrapasse o valor do limite do trimestre. Contribuição Social calculada a alíquota de 9% sobre o lucro Contábil.

H) TRIBUTOS A RECUPERAR: Os valores relativos a tributos a recuperar constituem créditos legítimos da empresa, derivados de sua incidência nas operações com órgãos públicos.

4) IMOBILIZADO

Taxa de Depreciação Anual	**Bem**	**31.12.2024**
Veículos	20%	1.422.307,91
Maquinários	10%	303.054,31
Moveis e Utensílios	10%	380.254,62
Instalações	10%	85.428,36
Equipamentos de Informática	20%	213.443,87
Imóveis		3.150.000,00
Terrenos		2.500.000,00
TOTAL ATIVO		8.054.489,07

5) PASSIVO CIRCULANTE E NÃO CIRCULANTE:

Empréstimos e Financiamentos: Os valores lançados nas contas de Empréstimos e Financiamentos, tanto no Passivo Circulante, quando no Passivo Não Circulante, estão conciliados, e os pagamentos estão absolutamente em dia, possuindo a empresa saldos ativos, que suportam o seu pagamento integral a qualquer momento.

6) CAPITAL SOCIAL

O capital social subscrito e integralizado é de R$ 2.000.0000,00 (Dois milhões de Reais), totalmente de origem nacional, quotas no valor de R$ 1.000,00 (Hum mil reais) cada.

7) RELATÓRIO DO AUDITOR INDEPENDENTE

Seguindo as boas práticas da administração, e no sentido de tornar transparente a sua situação econômica e financeira para o mercado, seus clientes e fornecedores, a Torino Informática LTDA. contratou a empresa ACR AUDITORIA E CONTABILIDADE SS LTDA., para realizar a auditoria externa e independente de sua contabilidade. Como resultado a auditoria produziu um relatório de quarenta e quatro (44) páginas, das quais transcrevemos o seu parecer, que vai em anexo. Informamos que a versão completa do relatório está registrado na Jucesp como documento de interesse da empresa.

DECLARAÇÃO DE CONFORMIDADE:

As demonstrações financeiras são de responsabilidade da Administração, e foram elaboradas de acordo com as práticas contábeis adotadas no Brasil, e as normas emitidas pelo Conselho Federal de Contabilidade (CFC), as quais abrangem a Legislação Societária, os Pronunciamentos, as Orientações e as Interpretações emitidas pelo Comitê de Pronunciamentos Contábeis (CPC).

A Diretoria declara que as Demonstrações Contábeis da sociedade **TORINO INFORMÁTICA LTDA.,** do período compreendido entre 01 de janeiro de 2024 e 31 de dezembro de 2024, apresentam adequadamente a posição patrimonial e financeira, o desempenho e os fluxos de caixa da entidade, com observância aos Princípios Gerais da Contabilidade. As demonstrações contábeis, foram elaboradas segundo o regime de competência e estão representadas em real, a moeda nacional Brasileira.

DENISE DO AMARAL RISSIO
CPF 246137578[illegible] DATA 28/04/2025
SERPRO

José Dini Filho
Contador: CRC: 1SP067764/O-3

Denise do Amaral Rissio
CPF.246.137.578-00

TORINO INFORMÁTICA LTDA
CNPJ: 03.619.767/0001-91 Inscrição Estadual: 669.369.347-110

Período: 01/01/2024 a 31/12/2024

TERMO DE ENCERRAMENTO

Nome da Empresa.....: TORINO INFORMATICA LTDA

Endereço.....: Avenida RITA DE CARVALHO MONTEIRO, 120

Complemento.....: Numero 130

Cidade.....: Sorocaba

CEP.....: 18.085-750

Bairro.....: RETIRO SÃO JOAO

Estado.....: SP

Registrado na Junta.....: 35216195101

Data do Registro.....: 01/02/2000

Inscrição Estadual.....: 669.369.347-110

Inscrição Municipal.....:

CNPJ.....: 03.619.767/0001-91

Encerramento Exercício Social: 31/12/2024

Sorocaba (SP), 31 de dezembro de 2024

DENISE DO AMARAL RISSIO
CPF 24613757806 DATA 29/04/2025
ICP-Brasil

DENISE DO AMARAL RISSIO
Sócia Administradora
CPF: 246.137.578-00

JOSÉ DINI FILHO
CRC: 1-SP-057764/O-3 - Técnico Contábil
CPF: 405.473.708-06

JUCESP
29 ABR. 2025
SECRETARIA DE DESENVOLVIMENTO ECONÔMICO - JUCESP
124.080/25-0
JUCESP

auditores independentes

RELATÓRIO DOS AUDITORES INDEPENDENTES SOBRE AS DEMONSTRAÇÕES CONTÁBEIS

Aos
Diretores e Administradores da
Torino Informática LTDA
Sorocaba - SP

Opinião
Examinamos as demonstrações contábeis da **Torino Informática LTDA ("Empresa")**, que compreendem o balanço patrimonial em 31 de dezembro de 2024 e as respectivas demonstrações do resultado, do resultado abrangente, das mutações do patrimônio liquido, e dos fluxos de caixa para o exercício findo nessa data, bem como as correspondentes notas explicativas, compreendendo as políticas contábeis significativas e outras informações elucidativas

Em nossa opinião, as demonstrações contábeis acima referidas representam adequadamente, em todos os aspectos relevantes, a posição patrimonial e financeira da **Torino Informática LTDA,** em 31 de dezembro de 2024, o desempenho de suas operações e os seus fluxos de caixa para o exercício findo nessa data, de acordo com as práticas contábeis adotadas no Brasil.

Base para opinião
Nossa auditoria foi conduzida de acordo com as normas brasileira e internacionais de auditoria. Nossas responsabilidades, em conformidade com tais normas, estão descritas na seção a seguir intitulada "Responsabilidade do auditor pela auditoria das demonstrações contábeis". Somos independentes em relação à Empresa, de acordo com os princípios éticos relevantes previstos no Código de Ética Profissional do Contador e nas normas profissionais emitidas pelo Conselho Federal de Contabilidade, e cumprimos com as demais responsabilidades éticas de acordo com essas normas. Acreditamos que a evidência de auditoria obtida é suficiente e apropriada para fundamentar nossa opinião.

Principais assuntos de auditoria
Principais assuntos de auditoria são aqueles que, em nosso julgamento profissional, foram os mais significativos em nossa auditoria do exercício corrente. Esses assuntos foram tratados no contexto de nossa auditoria das demonstrações contábeis como um todo e na formação de nossa opinião sobre essas demonstrações contábeis e, portanto, não expressamos uma opinião separada sobre esses assuntos.

Outros assuntos

(a) Demonstrações do valor adicionado
As demonstrações do valor adicionado (DVA) referentes ao exercício findo em 31 de dezembro de 2024, elaboradas sob a responsabilidade da **Torino Informática LTDA,** e apresentadas como informação gerencial, foram submetidas a procedimentos de auditoria executados em conjunto com a auditoria das demonstrações financeiras da Empresa. Para a formação de nossa opinião, avaliamos se essas demonstrações estão conciliadas com as demonstrações e registros contábeis, conforme aplicável, e se sua forma e conteúdo estão de acordo com os critérios definidos no Pronunciamento Técnico CPC 09 – Demonstração do Valor Adicionado. Em nossa opinião, essas demonstrações do valor adicionado foram adequadamente elaboradas, em todos os aspectos relevantes, segundo critérios definidos nesse Pronunciamento Técnico e são consistentes em relação às demonstrações financeiras tomadas em conjunto.

(b) Auditoria das demonstrações contábeis do exercício anterior
O balanço patrimonial em 31 de dezembro 2023 e a demonstração do resultado, do resultado abrangente, das mutações do patrimônio liquido, do fluxo de caixa, do valor adicionado e respectivas notas explicativas para o exercício findo nossa data, apresentados como valores correspondentes nas demonstrações contábeis do exercício corrente, foram por nós revisadas, e emitimos relatório sem modificação de opinião em 29 de março de 2024.

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 619

Outras informações que acompanham as demonstrações contábeis e o relatório do auditor
A Administração da Empresa é responsável por essas outras informações que compreendem o Relatório da Administração.

Nossa opinião sobre as demonstrações contábeis não abrange o Relatório da Administração, e não expressamos qualquer forma de conclusão de auditoria sobre esse relatório.

Em conexão com a auditoria das demonstrações contábeis, nossa responsabilidade é a de ler o Relatório da Administração e, ao fazê-lo, considerar se esse relatório está, de forma relevante, inconsistente com as demonstrações financeiras ou com nosso conhecimento obtido na auditoria ou, de outra forma, aparenta estar distorcido de forma relevante. Se, com base no trabalho realizado, concluirmos que há distorção relevante no Relatório da Administração, somos requeridos a comunicar esse fato. Não temos nada a relatar a esse respeito.

Responsabilidade da administração e da governança pelas demonstrações contábeis
A Administração da Empresa é responsável pela elaboração e adequada apresentação das demonstrações contábeis de acordo com as práticas contábeis adotadas no Brasil e pelos controles internos que ela determinou como necessários para permitir a elaboração dessas demonstrações contábeis livres de distorção relevante, independentemente se causada por fraude ou erro.

Na elaboração das demonstrações contábeis, a Administração é responsável pela avaliação da capacidade de a Empresa continuar operando e divulgando, quando aplicável, os assuntos relacionados com a sua continuidade operacional e o uso dessa base contábil na elaboração das demonstrações contábeis, a não ser que a Administração pretenda liquidar a Empresa ou cessar suas operações, ou não tenha nenhuma alternativa realista para evitar o encerramento das operações.

Os responsáveis pela governança da Empresa são aqueles com responsabilidade pela supervisão do processo de elaboração das demonstrações contábeis.

Responsabilidade do auditor pela auditoria das demonstrações contábeis
Nossos objetivos são obter segurança razoável de que as demonstrações contábeis, tomadas em conjunto, estão livres de distorção relevante, independentemente se causadas por fraude ou erro, e emitir relatório de auditoria contendo nossa opinião. Segurança razoável é um alto nível de segurança, mas não, uma garantia de que a auditoria realizada de acordo com as normas brasileiras e internacionais de auditoria sempre detecta as eventuais distorções relevantes existentes. As distorções podem ser decorrentes de fraude ou erro e são consideradas relevantes quando, individualmente ou em conjunto, possam influenciar, dentro de uma perspectiva razoável, as decisões econômicas dos usuários tomadas com base nas referidas demonstrações contábeis.

Como parte da auditoria realizada, de acordo com as normas brasileiras e internacionais de auditoria, exercemos julgamento profissional e mantemos ceticismo profissional ao longo da auditoria. Além disso:

- Identificamos e avaliamos os riscos de distorção relevante nas demonstrações contábeis, independentemente se causada por fraude ou erro, planejamos e executamos procedimentos de auditoria em resposta a tais riscos, bem como obtemos evidência de auditoria apropriada e suficiente para fundamentar nossa opinião. O risco de não detecção de distorção relevante resultante de fraude é maior do que o proveniente de erro, já que a fraude pode envolver o ato de burlar os controles internos, conluio, falsificação, omissão ou representações falsas intencionais.

- Obtemos entendimento dos controles internos relevantes para a auditoria para planejarmos procedimentos de auditoria apropriados às circunstâncias, mas não com o objetivo de expressarmos opinião sobre a eficácia dos controles internos da Empresa.

- Avaliarmos a adequação das políticas contábeis utilizadas e a razoabilidade das estimativas contábeis e respectivas divulgações feitas pela Administração.

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 620

- Concluímos sobre a adequação de uso, pela administração, da base contábil de continuidade operacional e, com base nas evidências de auditoria obtidas, se existe incerteza relevante em relação a eventos ou condições que possam levantar dúvida significativa em relação à capacidade de continuidade operacional da Empresa. Se concluirmos que existe incerteza relevante, devemos chamar atenção em nosso relatório de auditoria para as respectivas divulgações nas demonstrações financeiras ou incluir modificação em nossa opinião, se as divulgações foram inadequadas. Nossas conclusões estão fundamentadas na evidência de auditoria obtidas até a data de nosso relatório. Todavia, eventos ou condições futuras podem levar a Empresa a não mais se manter em continuidade operacional.

- Avaliamos a apresentação geral, a estrutura e o conteúdo das demonstrações contábeis, inclusive as divulgações e se as demonstrações contábeis representam as correspondentes transações e os eventos de maneira compatível com o objeto de apresentação adequada.

Comunicamo-nos com os responsáveis pela governança a respeito, entre outros aspectos, do alcance e da época dos trabalhos de auditoria planejados e das constatações significativas de auditoria, inclusive as deficiências significativas nos controles internos que, eventualmente, tenham sido identificadas durante nossos trabalhos.

Fornecemos também aos responsáveis pela governança declaração de que cumprimos com as exigências éticas relevantes, incluindo os requisitos aplicáveis de independência, e comunicamos todos os eventuais relacionamentos ou assuntos que poderiam afetar, consideravelmente, nossa independência, incluindo, quando aplicável, as respectivas salvaguardas.

Sorocaba (SP), 31 de março de 2.025.

ACR AUDITORIA E CONTABILIDADE SOCIEDADE SIMPLES
L:17325769000182
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ACR AUDITORIA E CONTABILIDADE S/S LTDA
CNPJ nº 17.325.769/0001-82
CRC2SP035035/O-0

ANTONIO CARLOS RUBINATO:98586807834
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Dados: 2025.04.28 09:44:34 -03'00'

Antonio Carlos Rubinato
Contador – CRC1SP111745/O-5
Registro IBRACON nº 5.092 de 23/08/2016

JESSICA CHRISTINA MORENO GREGORIO RUBINATO:38661091802
Assinado de forma digital por JESSICA CHRISTINA MORENO GREGORIO RUBINATO:38661091802
Dados: 2025.04.28 09:44:51 -03'00'

Jéssica Christina Moreno Gregório Rubinato
Contadora – CRC1SP297849/0-9
Registro – CNAI nº 6.224 de 18/11/2019

JUCESP
29 ABR. 2025
SECRETARIA DE DESENVOLVIMENTO ECONÔMICO - JUCESP
CERTIFICO O REGISTRO SOB O NÚMERO
CLÁUDIA E. SOBRAL JUNQUEIRA
SECRETÁRIA GERAL DA JUCESP
124.079/25-8
JUCESP

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 621

JUCESP PROTOCOLO
0.942.554/25-5

ATA DE REUNIÃO DE SÓCIOS PARA A APROVAÇÃO DAS CONTAS DA ADMINISTRAÇÃO
Realizada aos 28 de Abril de 2025.

EMPRESA TORINO INFORMÁTICA LTDA
NIRE 35216195101
CNPJ n. º 03.619.767/0001-91

Aos vinte e oito dias do mês de abril do ano de dois mil e vinte e cinco, às dez horas, na cidade de Sorocaba, Estado de São Paulo, Rua Rita de Carvalho Monteiro, n. 120/130, Bairro Retiro São João, CEP 18085-750, na sede da sociedade empresária, **TORINO INFORMÁTICA LTDA**, que é regida sob o tipo jurídico de sociedade limitada, nos termos da Lei nº. 10.406/2002, com contrato social registrado na Junta Comercial do Estado de São Paulo – JUCESP, **sob NIRE 35216195101, inscrita no CNPJ sob n.º03.619.767/0001-91,** compareceram e reuniram-se a sócia **administradora DENISE DO AMARAL RISSIO**, brasileira, casada no regime de comunhão parcial de bens, empresária, nascida aos 02.11.1955 natural Pindamonhangaba-SP, portadora da Cédula de Identidade RG n. 6.438.259 exp. pelo SSP/SP., e do CPF n. 246.137.578-00, residente e domiciliada à Rua Angelina Parolina Zocca , 82 – Bairro de Santa Rosália - Sorocaba-SP., CEP. n. 18090.090, e o sócio **RODRIGO DO AMARAL RISSIO**, brasileiro, divorciado, maior, empresário, nascido aos 29.06.1981, natural de São Paulo-SP., portador da Cédula de Identidade RG n. 27.954.969-6, exp. pelo SSP/SP., e do CPF n. 220.807.218-95 residente domiciliado à Rua Angelina Parolina Zocca, 82 - Bairro de Santa Rosália – Sorocaba – SP., CEP. n. 18090.090 que representam a totalidade do capital social da empresa. Os sócios acima nomeados, declararam-se cientes do local, data, hora e do inteiro teor da ordem do dia, dispensando as formalidades da convocação, previstas na Lei. De comum acordo, escolhem a sócia **DENISE DO AMARAL RISSIO**, para a Presidência desta Reunião, e o sócio **RODRIGO DO AMARAL RISSIO**, para Secretário, para compor a mesa diretora da Reunião. Iniciados os trabalhos, foram apresentados o balanço patrimonial e o de resultado econômico, referentes ao **exercício social de dois mil e vinte e quatro,** encerrados em trinta e um de dezembro do referido ano. A sócia administradora **DENISE DO AMARAL RISSIO**, prestou contas justificadas de sua administração, esclarecendo todas as dúvidas suscitadas, que foram entendidas e aceitas por todos os presentes. Após a leitura dos documentos constantes da ordem do dia, as contas de administração foram postas em discussão e votação, sendo examinados todos os livros e documentos, sendo aprovadas pelo sócio quotista **RODRIGO DO AMARAL RISSIO**, unanimemente, sem quaisquer reservas ou restrições. Com a aprovação das contas da administração cumpriu-se o objetivo da reunião, e dada a palavra aos presentes, inexistiu qualquer manifestação, sendo encerrada a Reunião, e lavrada a presente ata que, após lida e aprovada, foi assinada por todos os sócios presentes, quotista e administradora, que será apresentada ao Registro Público de Empresas Mercantis, na Junta Comercial do Estado de São Paulo, para o seu arquivamento na forma da Lei.

DENISE DO AMARAL RISSIO
CPF 246137578**
DATA 28/04/2025

Presidente: _____
DENISE DO AMARAL RISSIO

RODRIGO DO AMARAL RISSIO:22080721895 Assinado de forma digital por RODRIGO DO AMARAL RISSIO:22080721895 Dados: 2025.04.28 12:51:39 -03'00'

Secretário: _____
RODRIGO DO AMARAL RISSIO

MINISTÉRIO DA FAZENDA
SECRETARIA DA RECEITA FEDERAL DO BRASIL
SISTEMA PÚBLICO DE ESCRITURAÇÃO DIGITAL – Sped Versão: 10.3.3

RECIBO DE ENTREGA DE ESCRITURAÇÃO CONTÁBIL DIGITAL

IDENTIFICAÇÃO DO TITULAR DA ESCRITURAÇÃO

NIRE	CNPJ	
	03.619.767/0001-91	

NOME EMPRESARIAL
TORINO INFORMATICA LTDA

IDENTIFICAÇÃO DA ESCRITURAÇÃO

FORMA DA ESCRITURAÇÃO CONTÁBIL	PERÍODO DA ESCRITURAÇÃO
Livro Diário (Completo - sem escrituração Auxiliar)	01/01/2024 a 31/12/2024
NATUREZA DO LIVRO	**NÚMERO DO LIVRO**
LIVRO DIARIO DIGITAL	25

IDENTIFICAÇÃO DO ARQUIVO (HASH)
93.3B.DC.B6.53.9F.69.7E.98.5E.DB.A3.B8.30.49.10.F7.18.72.A8

ARQUIVOS SUBSTITUÍDOS (HASH)

ESTE LIVRO FOI ASSINADO COM OS SEGUINTES CERTIFICADOS DIGITAIS:

QUALIFICAÇÃO DO SIGNATARIO	CPF/CNPJ	NOME	Nº SÉRIE DO CERTIFICADO	VALIDADE	RESPONSÁVEL LEGAL
Contador	40547370806	JOSE DINI FILHO:40547370806	631619479900164306 9	03/06/2024 a 03/06/2025	Não
Procurador	40547370806	JOSE DINI FILHO:40547370806	631619479900164306 9	03/06/2024 a 03/06/2025	Sim
Contador/Contabilista Responsável Pelo Termo de Verificação para Fins de Substituição da ECD	40547370806	JOSE DINI FILHO:40547370806	631619479900164306 9	03/06/2024 a 03/06/2025	-

NÚMERO DO RECIBO:

93.3B.DC.B6.53.9F.69.7E.98.5E.DB.A3.
B8.30.49.10.F7.18.72.A8-3

Escrituração recebida via Internet
pelo Agente Receptor SERPRO

em 20/05/2025 às 14:01:06

B2.BA.86.DC.AD.E5.FB.4
B
C5.0C.5F.B8.2B.7B.29.4C

Considera-se autenticado o livro contábil a que se refere este recibo nos termos do Decreto nº 9.555/2018, dispensando-se qualquer outra forma de autenticação. Este recibo comprova a autenticação.

TERMOS DE ABERTURA E ENCERRAMENTO

Entidade:	TORINO INFORMATICA LTDA		
Período da Escrituração:	01/01/2024 a 31/12/2024	CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	25		

TERMO DE ABERTURA

Nome Empresarial	TORINO INFORMATICA LTDA
NIRE	
CNPJ	03.619.767/0001-91
Número de Ordem	25
Natureza do Livro	LIVRO DIARIO DIGITAL
Município	Sorocaba
Data do arquivamento dos atos constitutivos	01/02/2000
Data de arquivamento do ato de conversão de sociedade simples em sociedade empresária	
Data de encerramento do exercício social	31/12/2024
Quantidade total de linhas do arquivo digital	423523

TERMO DE ENCERRAMENTO

Nome Empresarial	TORINO INFORMATICA LTDA
Natureza do Livro	LIVRO DIARIO DIGITAL
Número de ordem	25
Quantidade total de linhas do arquivo digital	423523
Data de inicio	01/01/2024
Data de término	31/12/2024

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número 93.3B.DC.B6.53.9F.69.7E.98.5E.DB.A3.B8.30.49.10.F7.18.72.A8-3, nos termos do Decreto nº 9.555/2018.

Este relatório foi gerado pelo Sistema Público de Escrituração Digital – Sped

BALANÇO PATRIMONIAL

Entidade:	TORINO INFORMATICA LTDA
Período da Escrituração:	01/01/2024 a 31/12/2024
CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	25
Período Selecionado:	01 de janeiro de 2024 a 31 de março de 2024

Descrição	Nota	Saldo Inicial	Saldo Final
ATIVO		R$ 227.511.321,66	R$ 227.995.540,80
CIRCULANTE		R$ 221.326.050,02	R$ 219.188.355,24
DISPONÍVEL		R$ 62.956.554,64	R$ 30.685.735,71
BENS NUMERÁRIOS		R$ 92,81	R$ 92,81
DEPÓSITOS BANCÁRIOS A VISTA		R$ 107.380,00	R$ 78.907,37
APLICAÇÕES DE LIQUIDEZ IMEDIATA		R$ 62.849.081,83	R$ 30.606.735,53
CLIENTES		R$ 46.784.993,79	R$ 97.372.520,64
DUPLICATAS A RECEBER		R$ 46.784.993,79	R$ 97.372.520,64
OUTROS CRÉDITOS		R$ 46.973.470,84	R$ 41.501.918,17
ADIANTAMENTOS A TERCEIROS		R$ 182.185,20	R$ 351.478,68
ADIANTAMENTOS A FUNCIONARIOS		R$ 21.696,66	R$ 4.427,34
LUCROS DISTRIBUIDOS NO EXERCÍCIO		R$ 0,00	R$ 314.108,90
TRIBUTOS A RECUPERAR		R$ 42.506.783,20	R$ 36.258.709,97
OUTROS CREDITOS		R$ 4.262.805,78	R$ 4.573.193,28
ESTOQUES		R$ 64.585.200,54	R$ 49.611.877,76
ESTOQUES DIVERSOS		R$ 64.585.200,54	R$ 49.611.877,76
DESPESAS PAGAS ANTECIPADAMENTE		R$ 25.830,21	R$ 16.302,96
DESPESAS DE MESES SEGUINTES		R$ 25.830,21	R$ 16.302,96
NÃO CIRCULANTE		R$ 5.219.601,96	R$ 7.841.515,88
REALIZÁVEL A LONGO PRAZO		R$ 3.171,37	R$ 134.525,82
OUTROS CREDITOS		R$ 3.171,37	R$ 134.525,82
IMOBILIZADO		R$ 5.216.430,59	R$ 7.706.990,06
IMÓVEIS		R$ 3.150.000,00	R$ 5.650.000,00
BENS EM OPERAÇÃO		R$ 2.954.654,11	R$ 2.954.654,11
IMOBILIZADO EM ANDAMENTO		R$ 777.750,09	R$ 879.173,89
(-) (-) DEPRECIAÇÃO/AMORTIZAÇÃO/EXAUSTÃO ACUMULADA		R$ (1.665.973,61)	R$ (1.776.837,94)
ATIVO COMPENSATÓRIO		R$ 965.669,68	R$ 965.669,68
DEMONSTRAÇÕES DIVERSAS		R$ 965.669,68	R$ 965.669,68
PASSIVO		R$ 227.511.321,66	R$ 227.995.540,80
CIRCULANTE		R$ 102.546.859,91	R$ 93.929.191,91
INSTITUIÇÕES FINANCEIRAS		R$ 11.219.435,89	R$ 34.614.048,21
Emprestimos		R$ 11.219.435,89	R$ 34.614.048,21
FORNECEDORES		R$ 79.562.609,78	R$ 55.277.054,31
FORNECEDORES NACIONAIS		R$ 79.562.609,78	R$ 55.277.054,31
OBRIGAÇÕES TRIBUTÁRIAS		R$ 3.827.333,82	R$ 3.535.025,01
IMPOSTOS E CONTRIBUIÇÕES A RECOLHER		R$ 3.773.957,10	R$ 3.401.570,80
TRIBUTOS RETIDOS A RECOLHER		R$ 53.376,72	R$ 133.454,21
OBRIGAÇÕES TRABALHISTAS E PREVIDENCIÁRIAS		R$ 123.276,30	R$ 120.117,88
OBRIGAÇÕES COM O PESSOAL		R$ 68.283,94	R$ 69.024,01
OBRIGAÇÕES PREVIDENCIÁRIAS		R$ 54.992,36	R$ 51.093,87
OUTRAS OBRIGAÇÕES		R$ 7.814.204,12	R$ 382.946,50
ADIANTAMENTOS DE CLIENTES		R$ 2.055.100,75	R$ 0,00
CONTAS A PAGAR		R$ 215.007,98	R$ 132.850,64
PROVISÃO PARA IRPJ E CSLL		R$ 5.544.095,39	R$ 250.095,86
NÃO CIRCULANTE		R$ 3.628.143,80	R$ 2.508.928,52
OBRIGAÇÕES A LONGO PRAZO		R$ 3.628.143,80	R$ 2.508.928,52
INSTITUIÇÕES FINANCEIRAS		R$ 3.628.143,80	R$ 2.508.928,52
EMPRÉSTIMOS		R$ 3.628.143,80	R$ 2.508.928,52
PATRIMÔNIO LÍQUIDO		R$ 120.370.648,27	R$ 130.591.750,69
CAPITAL SOCIAL		R$ 2.000.000,00	R$ 2.000.000,00
CAPITAL SUBSCRITO		R$ 2.000.000,00	R$ 2.000.000,00
RESERVAS DE LUCROS		R$ 81.203.204,45	R$ 81.203.204,45
LUCROS E PREJUÍZOS ACUMULADOS		R$ 37.167.443,82	R$ 47.388.546,24
LUCROS E PREJUÍZOS ACUMULADOS		R$ 37.167.443,82	R$ 37.167.443,82
LUCROS E PREJUÍZOS DO EXERCÍCIO		R$ 0,00	R$ 10.221.102,42
PASSIVO COMPENSATÓRIO		R$ 965.669,68	R$ 965.669,68
DEMONSTRAÇÕES DIVERSAS		R$ 965.669,68	R$ 965.669,68

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número 93.3B.DC.B6.53.9F.69.7E.98.5E.DB.A3.B8.30.49.10.F7.18.72.A8-3, nos termos do Decreto nº 9.555/2018.

Este relatório foi gerado pelo Sistema Público de Escrituração Digital – Sped

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 625

DEMONSTRAÇÃO DE RESULTADO DO EXERCÍCIO

Entidade:	TORINO INFORMATICA LTDA
Período da Escrituração:	01/01/2024 a 31/12/2024
CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	25
Período Selecionado:	01 de janeiro de 2024 a 31 de março de 2024

Descrição	Nota	Saldo anterior	Saldo atual
RECEITA OPERACIONAL BRUTA		R$ 137.237.599,77	R$ 123.268.302,47
RECEITA OPERACIONAL BRUTA		R$ 137.237.599,77	R$ 123.268.302,47
VENDAS DE MERCADORIAS		R$ 137.045.584,16	R$ 123.155.422,64
SERVIÇOS MERCADO INTERNO		R$ 192.015,61	R$ 112.879,83
(-) (-) DEDUÇÕES DA RECEITA BRUTA		R$ (38.624.883,61)	R$ (29.751.153,17)
(-) VENDAS CANCELADAS		R$ (13.190.776,93)	R$ (1.720.873,83)
(-) (-) CANCELAMENTOS E DEVOLUÇÕES		R$ (13.190.776,93)	R$ (1.720.873,83)
(-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVICOS		R$ (25.434.106,68)	R$ (28.030.279,34)
(-) (-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVICOS		R$ (25.434.106,68)	R$ (28.030.279,34)
(-) (-) CUSTO DOS PRODUTOS/MERCADORIAS/SERVICOS		R$ (84.925.762,51)	R$ (74.548.253,54)
(-) CUSTO DAS MERCADORIAS VENDIDAS		R$ (84.925.762,51)	R$ (74.548.253,54)
(-) (+/-) DESPESAS OPERACIONAIS		R$ (8.152.546,43)	R$ (17.622.837,12)
(-) DE VENDAS		R$ (666.731,14)	R$ (1.194.829,62)
(-) DESPESAS COM VEÍCULOS		R$ (18.470,12)	R$ (15.226,98)
(-) DESPESAS GERAIS		R$ (648.261,02)	R$ (1.179.602,64)
(-) ADMINISTRATIVAS		R$ (7.531.201,07)	R$ (15.531.857,82)
(-) DESPESAS COM PESSOAL		R$ (662.215,66)	R$ (614.759,96)
(-) PROPAGANDA E PUBLICIDADE		R$ 0,00	R$ (550,00)
(-) OCUPAÇÃO		R$ (196.785,30)	R$ (197.293,63)
(-) DEPRECIAÇÕES E AMORTIZAÇÕES		R$ (111.301,66)	R$ (110.864,33)
(-) UTILIDADES E SERVIÇOS		R$ (53.968,13)	R$ (54.774,16)
(-) DESPESAS GERAIS		R$ (6.380.963,35)	R$ (14.152.412,92)
(-) DESPESAS NÃO DEDUTÍVEIS		R$ (125.966,97)	R$ (401.202,82)
(-) COM VEICULOS		R$ 0,00	R$ (1.441,98)
(-) DESPESAS GERAIS		R$ 0,00	R$ (1.441,98)
(-) DESPESAS FINANCEIRAS		R$ (1.040.363,68)	R$ (1.862.079,90)
(-) DESPESAS FINANCEIRAS		R$ (1.040.363,68)	R$ (1.862.079,90)
(-) RECEITAS FINANCEIRAS		R$ 1.148.320,28	R$ 1.312.122,36
RECEITAS FINANCEIRAS		R$ 1.148.320,28	R$ 1.312.122,36
(-) DESPESAS TRIBUTARIAS		R$ (62.570,82)	R$ (344.750,16)
(-) DESPESAS TRIBUTÁRIAS		R$ (62.570,82)	R$ (344.750,16)
OUTROS RESULTADOS OPERACIONAIS		R$ 3.847.708,98	R$ 10.295.467,62
OUTRAS RECEITAS OPERACIONAIS		R$ 3.847.708,98	R$ 10.295.467,62
RECEITAS OPERACIONAIS DIVERSAS		R$ 3.847.708,98	R$ 10.295.467,62
(-) PROVISÃO PARA CONTRIBUIÇÃO SOCIAL		R$ (555.611,69)	R$ (377.582,78)
(-) CSLL		R$ (555.611,69)	R$ (377.582,78)
(-) PROVISÃO PARA IMPOSTO DE RENDA		R$ (1.537.365,81)	R$ (1.042.841,06)
(-) IRPJ		R$ (1.537.365,81)	R$ (1.042.841,06)
(=) RESULTADO DO EXERCÍCIO		R$ 7.289.138,70	R$ 10.221.102,42

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número 93.3B.DC.B6.53.9F.69.7E.98.5E.DB.A3.B8.30.49.10.F7.18.72.A8-3, nos termos do Decreto nº 9.555/2018.

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Numeração: TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2023.0.[illegible] pg. 626

ORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813)

DEMONSTRAÇÃO DAS MUTAÇÕES DO PATRIMÔNIO LÍQUIDO

Entidade:	TORINO INFORMATICA LTDA				
Período da Escrituração:	01/01/2024 a 31/12/2024	CNP	03.619.767/0001-91	Número de Ordem do Livro:	25
Período Selecionado:	01 de janeiro de 2024 a 31 de março de 2024				

Histórico	Código de Aglutinação das Contas de Patrimônio Líquido					Total (R$)
	Capital Social (R$)	Reservas de Lucros - Doações Subvenções P/Investim (R$)	Lucros Acumulados (R$)	Lucros do Exercício (R$)	(-) Prejuízos do Execício (R$)	
Saldo Inicial em 01.01.2024	2.000.000,00	81.203.204,45	37.167.443,82	0,00	0,00	120.370.648,27
Lucro Líquido do Exercício ENCERRAMENTO DE EXERCICIO				17.448.051,68		17.448.051,68
Prejuízo Líquido do Exercício ENCERRAMENTO DE EXERCICIO					(-)7.226.949,26	(-)7.226.949,26
Saldo Final em 31.03.2024	2.000.000,00	81.203.204,45	37.167.443,82	17.448.051,68	(-)7.226.949,26	130.591.750,69
Notas						

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número 93.3B.DC.B6.53.9F.69.7E.98.5E.DB.A3.B8.30.49.10.F7.18.72.A8-3, nos termos do Decreto nº 9.555/2018.

BALANÇO PATRIMONIAL

Entidade:	TORINO INFORMATICA LTDA
Período da Escrituração:	01/01/2024 a 31/12/2024
CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	25
Período Selecionado:	01 de abril de 2024 a 30 de junho de 2024

Descrição	Nota	Saldo Inicial	Saldo Final
ATIVO		R$ 227.995.540,80	R$ 247.214.438,64
CIRCULANTE		R$ 219.188.355,24	R$ 238.542.925,64
DISPONÍVEL		R$ 30.685.735,71	R$ 27.965.389,06
BENS NUMERÁRIOS		R$ 92,81	R$ 92,81
DEPÓSITOS BANCÁRIOS A VISTA		R$ 78.907,37	R$ 481.438,79
APLICAÇÕES DE LIQUIDEZ IMEDIATA		R$ 30.606.735,53	R$ 27.483.857,46
CLIENTES		R$ 97.372.520,64	R$ 103.020.990,84
DUPLICATAS A RECEBER		R$ 97.372.520,64	R$ 103.020.990,84
OUTROS CRÉDITOS		R$ 41.501.918,17	R$ 46.659.851,85
ADIANTAMENTOS A TERCEIROS		R$ 351.478,68	R$ 298.768,29
ADIANTAMENTOS A FUNCIONARIOS		R$ 4.427,34	R$ 60.103,13
LUCROS DISTRIBUIDOS NO EXERCÍCIO		R$ 314.108,90	R$ 644.108,90
TRIBUTOS A RECUPERAR		R$ 36.258.709,97	R$ 41.058.347,97
OUTROS CREDITOS		R$ 4.573.193,28	R$ 4.598.523,56
ESTOQUES		R$ 49.611.877,76	R$ 60.889.918,18
ESTOQUES DIVERSOS		R$ 49.611.877,76	R$ 60.889.918,18
DESPESAS PAGAS ANTECIPADAMENTE		R$ 16.302,96	R$ 6.775,71
DESPESAS DE MESES SEGUINTES		R$ 16.302,96	R$ 6.775,71
NÃO CIRCULANTE		R$ 7.841.515,88	R$ 7.705.843,32
REALIZÁVEL A LONGO PRAZO		R$ 134.525,82	R$ 46.373,13
OUTROS CREDITOS		R$ 134.525,82	R$ 46.373,13
IMOBILIZADO		R$ 7.706.990,06	R$ 7.659.470,19
IMÓVEIS		R$ 5.650.000,00	R$ 5.650.000,00
BENS EM OPERAÇÃO		R$ 2.954.654,11	R$ 2.954.654,11
IMOBILIZADO EM ANDAMENTO		R$ 879.173,89	R$ 942.494,09
(-) (-) DEPRECIAÇÃO/AMORTIZAÇÃO/EXAUSTÃO ACUMULADA		R$ (1.776.837,94)	R$ (1.887.678,01)
ATIVO COMPENSATÓRIO		R$ 965.669,68	R$ 965.669,68
DEMONSTRAÇÕES DIVERSAS		R$ 965.669,68	R$ 965.669,68
PASSIVO		R$ 227.995.540,80	R$ 247.214.438,64
CIRCULANTE		R$ 93.929.191,91	R$ 103.321.387,70
INSTITUIÇÕES FINANCEIRAS		R$ 34.614.048,21	R$ 53.316.447,76
Emprestimos		R$ 34.614.048,21	R$ 53.316.447,76
FORNECEDORES		R$ 55.277.054,31	R$ 44.976.146,98
FORNECEDORES NACIONAIS		R$ 55.277.054,31	R$ 44.976.146,98
OBRIGAÇÕES TRIBUTÁRIAS		R$ 3.535.025,01	R$ 3.635.261,05
IMPOSTOS E CONTRIBUIÇÕES A RECOLHER		R$ 3.401.570,80	R$ 3.531.100,15
TRIBUTOS RETIDOS A RECOLHER		R$ 133.454,21	R$ 104.160,90
OBRIGAÇÕES TRABALHISTAS E PREVIDENCIÁRIAS		R$ 120.117,88	R$ 123.129,61
OBRIGAÇÕES COM O PESSOAL		R$ 69.024,01	R$ 69.085,99
OBRIGAÇÕES PREVIDENCIÁRIAS		R$ 51.093,87	R$ 54.043,62
OUTRAS OBRIGAÇÕES		R$ 382.946,50	R$ 1.270.402,30
ADIANTAMENTOS DE CLIENTES		R$ 0,00	R$ 920.278,75
CONTAS A PAGAR		R$ 132.850,64	R$ 100.027,69
PROVISÃO PARA IRPJ E CSLL		R$ 250.095,86	R$ 250.095,86
NÃO CIRCULANTE		R$ 2.508.928,52	R$ 1.346.915,66
OBRIGAÇÕES A LONGO PRAZO		R$ 2.508.928,52	R$ 1.346.915,66
INSTITUIÇÕES FINANCEIRAS		R$ 2.508.928,52	R$ 1.346.915,66
EMPRÉSTIMOS		R$ 2.508.928,52	R$ 1.346.915,66
PATRIMÔNIO LÍQUIDO		R$ 130.591.750,69	R$ 141.580.465,60
CAPITAL SOCIAL		R$ 2.000.000,00	R$ 2.000.000,00
CAPITAL SUBSCRITO		R$ 2.000.000,00	R$ 2.000.000,00
RESERVAS DE LUCROS		R$ 81.203.204,45	R$ 81.203.204,45
LUCROS E PREJUÍZOS ACUMULADOS		R$ 47.388.546,24	R$ 58.377.261,15
LUCROS E PREJUÍZOS ACUMULADOS		R$ 37.167.443,82	R$ 37.167.443,82
LUCROS E PREJUÍZOS DO EXERCÍCIO		R$ 10.221.102,42	R$ 21.209.817,33
PASSIVO COMPENSATÓRIO		R$ 965.669,68	R$ 965.669,68
DEMONSTRAÇÕES DIVERSAS		R$ 965.669,68	R$ 965.669,68

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número 93.3B.DC.B6.53.9F.69.7E.98.5E.DB.A3.B8.30.49.10.F7.18.72.A8-3, nos termos do Decreto nº 9.555/2018.

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Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 628

DEMONSTRAÇÃO DE RESULTADO DO EXERCÍCIO

Entidade:	TORINO INFORMATICA LTDA
Período da Escrituração:	01/01/2024 a 31/12/2024
CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	25
Período Selecionado:	01 de abril de 2024 a 30 de junho de 2024

Descrição	Nota	Saldo anterior	Saldo atual
RECEITA OPERACIONAL BRUTA		R$ 123.268.302,47	R$ 138.894.817,44
RECEITA OPERACIONAL BRUTA		R$ 123.268.302,47	R$ 138.894.817,44
VENDAS DE MERCADORIAS		R$ 123.155.422,64	R$ 138.200.125,68
SERVIÇOS MERCADO INTERNO		R$ 112.879,83	R$ 694.691,76
(-) (-) DEDUÇÕES DA RECEITA BRUTA		R$ (29.751.153,17)	R$ (34.215.883,11)
(-) VENDAS CANCELADAS		R$ (1.720.873,83)	R$ (3.723.711,79)
(-) (-) CANCELAMENTOS E DEVOLUÇÕES		R$ (1.720.873,83)	R$ (3.723.711,79)
(-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVICOS		R$ (28.030.279,34)	R$ (30.492.171,32)
(-) (-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVICOS		R$ (28.030.279,34)	R$ (30.492.171,32)
(-) (-) CUSTO DOS PRODUTOS/MERCADORIAS/SERVICOS		R$ (74.548.253,54)	R$ (82.990.732,37)
(-) CUSTO DAS MERCADORIAS VENDIDAS		R$ (74.548.253,54)	R$ (82.990.732,37)
(-) (+/-) DESPESAS OPERACIONAIS		R$ (17.622.837,12)	R$ (16.844.161,92)
(-) DE VENDAS		R$ (1.194.829,62)	R$ (2.244.521,46)
(-) DESPESAS COM VEÍCULOS		R$ (15.226,98)	R$ (20.787,61)
(-) DESPESAS GERAIS		R$ (1.179.602,64)	R$ (2.223.733,85)
(-) ADMINISTRATIVAS		R$ (15.531.857,82)	R$ (12.869.125,84)
(-) DESPESAS COM PESSOAL		R$ (614.759,96)	R$ (633.093,23)
PROPAGANDA E PUBLICIDADE		R$ (550,00)	R$ 0,00
(-) OCUPAÇÃO		R$ (197.293,63)	R$ (200.427,89)
(-) DEPRECIAÇÕES E AMORTIZAÇÕES		R$ (110.864,33)	R$ (110.840,07)
(-) UTILIDADES E SERVIÇOS		R$ (54.774,16)	R$ (56.823,06)
(-) DESPESAS GERAIS		R$ (14.152.412,92)	R$ (11.693.518,20)
(-) DESPESAS NÃO DEDUTÍVEIS		R$ (401.202,82)	R$ (174.423,39)
COM VEICULOS		R$ (1.441,98)	R$ 0,00
DESPESAS GERAIS		R$ (1.441,98)	R$ 0,00
(-) DESPESAS FINANCEIRAS		R$ (1.862.079,90)	R$ (2.283.456,87)
(-) DESPESAS FINANCEIRAS		R$ (1.862.079,90)	R$ (2.283.456,87)
(-) RECEITAS FINANCEIRAS		R$ 1.312.122,36	R$ 712.017,58
RECEITAS FINANCEIRAS		R$ 1.312.122,36	R$ 712.017,58
(-) DESPESAS TRIBUTARIAS		R$ (344.750,16)	R$ (159.075,33)
(-) DESPESAS TRIBUTÁRIAS		R$ (344.750,16)	R$ (159.075,33)
OUTROS RESULTADOS OPERACIONAIS		R$ 10.295.467,62	R$ 8.678.202,90
OUTRAS RECEITAS OPERACIONAIS		R$ 10.295.467,62	R$ 8.678.202,90
RECEITAS OPERACIONAIS DIVERSAS		R$ 10.295.467,62	R$ 8.678.202,90
(-) PROVISÃO PARA CONTRIBUIÇÃO SOCIAL		R$ (377.582,78)	R$ (672.228,01)
(-) CSLL		R$ (377.582,78)	R$ (672.228,01)
(-) PROVISÃO PARA IMPOSTO DE RENDA		R$ (1.042.841,06)	R$ (1.861.300,02)
(-) IRPJ		R$ (1.042.841,06)	R$ (1.861.300,02)
(=) RESULTADO DO EXERCÍCIO		R$ 10.221.102,42	R$ 10.988.714,91

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Navegação: TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2023.0.[illegible] pg. 629

ORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813)

DEMONSTRAÇÃO DAS MUTAÇÕES DO PATRIMÔNIO LÍQUIDO

Entidade:	TORINO INFORMATICA LTDA				
Período da Escrituração:	01/01/2024 a 31/12/2024	CNPJ	03.619.767/0001-91	Número de Ordem do Livro:	25
Período Selecionado:	01 de abril de 2024 a 30 de junho de 2024				

Histórico	Código de Aglutinação das Contas de Patrimônio Líquido					Total (R$)
	Capital Social (R$)	Reservas de Lucros - Doações Subvenções P/Investim (R$)	Lucros Acumulados (R$)	Lucros do Exercício (R$)	(-) Prejuízos do Execício (R$)	
Saldo Inicial em 01.04.2024	2.000.000,00	81.203.204,45	37.167.443,82	17.448.051,68	(-)7.226.949,26	130.591.750,69
Lucro Líquido do Exercício ENCERRAMENTO DE EXERCICIO				20.409.381,28		20.409.381,28
Prejuízo Líquido do Exercício ENCERRAMENTO DE EXERCICIO					(-)9.420.666,37	(-)9.420.666,37
Saldo Final em 30.06.2024	2.000.000,00	81.203.204,45	37.167.443,82	37.857.432,96	(-)16.647.615,63	141.580.465,60
Notas						

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número 93.3B.DC.B6.53.9F.69.7E.98.5E.DB.A3.B8.30.49.10.F7.18.72.A8-3, nos termos do Decreto nº 9.555/2018.

BALANÇO PATRIMONIAL

Entidade:	TORINO INFORMATICA LTDA
Período da Escrituração:	01/01/2024 a 31/12/2024
CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	25
Período Selecionado:	01 de julho de 2024 a 30 de setembro de 2024

Descrição	Nota	Saldo Inicial	Saldo Final
ATIVO		R$ 247.214.438,64	R$ 307.363.275,82
CIRCULANTE		R$ 238.542.925,64	R$ 298.658.213,33
DISPONÍVEL		R$ 27.965.389,06	R$ 29.906.984,76
BENS NUMERÁRIOS		R$ 92,81	R$ 92,81
DEPÓSITOS BANCÁRIOS A VISTA		R$ 481.438,79	R$ 255.820,70
APLICAÇÕES DE LIQUIDEZ IMEDIATA		R$ 27.483.857,46	R$ 29.651.071,25
CLIENTES		R$ 103.020.990,84	R$ 156.171.842,82
DUPLICATAS A RECEBER		R$ 103.020.990,84	R$ 156.171.842,82
OUTROS CRÉDITOS		R$ 46.659.851,85	R$ 51.077.189,87
ADIANTAMENTOS A TERCEIROS		R$ 298.768,29	R$ 289.589,57
ADIANTAMENTOS A FUNCIONARIOS		R$ 60.103,13	R$ 54.078,22
LUCROS DISTRIBUIDOS NO EXERCÍCIO		R$ 644.108,90	R$ 974.108,90
TRIBUTOS A RECUPERAR		R$ 41.058.347,97	R$ 44.950.163,62
OUTROS CREDITOS		R$ 4.598.523,56	R$ 4.809.249,56
ESTOQUES		R$ 60.889.918,18	R$ 61.459.729,98
ESTOQUES DIVERSOS		R$ 60.889.918,18	R$ 61.459.729,98
DESPESAS PAGAS ANTECIPADAMENTE		R$ 6.775,71	R$ 42.465,90
DESPESAS DE MESES SEGUINTES		R$ 6.775,71	R$ 42.465,90
NÃO CIRCULANTE		R$ 7.705.843,32	R$ 7.739.392,81
REALIZÁVEL A LONGO PRAZO		R$ 46.373,13	R$ 173.893,14
OUTROS CREDITOS		R$ 46.373,13	R$ 173.893,14
IMOBILIZADO		R$ 7.659.470,19	R$ 7.565.499,67
IMÓVEIS		R$ 5.650.000,00	R$ 5.650.000,00
BENS EM OPERAÇÃO		R$ 2.954.654,11	R$ 2.954.654,11
IMOBILIZADO EM ANDAMENTO		R$ 942.494,09	R$ 959.244,89
(-) (-) DEPRECIAÇÃO/AMORTIZAÇÃO/EXAUSTÃO ACUMULADA		R$ (1.887.678,01)	R$ (1.998.399,33)
ATIVO COMPENSATÓRIO		R$ 965.669,68	R$ 965.669,68
DEMONSTRAÇÕES DIVERSAS		R$ 965.669,68	R$ 965.669,68
PASSIVO		R$ 247.214.438,64	R$ 307.363.275,82
CIRCULANTE		R$ 103.321.387,70	R$ 158.848.113,04
INSTITUIÇÕES FINANCEIRAS		R$ 53.316.447,76	R$ 79.944.467,28
Emprestimos		R$ 53.316.447,76	R$ 79.944.467,28
FORNECEDORES		R$ 44.976.146,98	R$ 74.176.618,13
FORNECEDORES NACIONAIS		R$ 44.976.146,98	R$ 74.176.618,13
OBRIGAÇÕES TRIBUTÁRIAS		R$ 3.635.261,05	R$ 3.627.458,76
IMPOSTOS E CONTRIBUIÇÕES A RECOLHER		R$ 3.531.100,15	R$ 3.416.803,99
TRIBUTOS RETIDOS A RECOLHER		R$ 104.160,90	R$ 210.654,77
OBRIGAÇÕES TRABALHISTAS E PREVIDENCIÁRIAS		R$ 123.129,61	R$ 133.708,22
OBRIGAÇÕES COM O PESSOAL		R$ 69.085,99	R$ 77.402,45
OBRIGAÇÕES PREVIDENCIÁRIAS		R$ 54.043,62	R$ 56.305,77
OUTRAS OBRIGAÇÕES		R$ 1.270.402,30	R$ 965.860,65
ADIANTAMENTOS DE CLIENTES		R$ 920.278,75	R$ 579.092,10
CONTAS A PAGAR		R$ 100.027,69	R$ 136.672,69
PROVISÃO PARA IRPJ E CSLL		R$ 250.095,86	R$ 250.095,86
NÃO CIRCULANTE		R$ 1.346.915,66	R$ 137.745,30
OBRIGAÇÕES A LONGO PRAZO		R$ 1.346.915,66	R$ 137.745,30
INSTITUIÇÕES FINANCEIRAS		R$ 1.346.915,66	R$ 137.745,30
EMPRÉSTIMOS		R$ 1.346.915,66	R$ 137.745,30
PATRIMÔNIO LÍQUIDO		R$ 141.580.465,60	R$ 147.411.747,80
CAPITAL SOCIAL		R$ 2.000.000,00	R$ 2.000.000,00
CAPITAL SUBSCRITO		R$ 2.000.000,00	R$ 2.000.000,00
RESERVAS DE LUCROS		R$ 81.203.204,45	R$ 81.203.204,45
LUCROS E PREJUÍZOS ACUMULADOS		R$ 58.377.261,15	R$ 64.208.543,35
LUCROS E PREJUÍZOS ACUMULADOS		R$ 37.167.443,82	R$ 37.167.443,82
LUCROS E PREJUÍZOS DO EXERCÍCIO		R$ 21.209.817,33	R$ 27.041.099,53
PASSIVO COMPENSATÓRIO		R$ 965.669,68	R$ 965.669,68
DEMONSTRAÇÕES DIVERSAS		R$ 965.669,68	R$ 965.669,68

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número 93.3B.DC.B6.53.9F.69.7E.98.5E.DB.A3.B8.30.49.10.F7.18.72.A8-3, nos termos do Decreto nº 9.555/2018.

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Versão 10.3.3 do Visualizador

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 631

DEMONSTRAÇÃO DE RESULTADO DO EXERCÍCIO

Entidade:	TORINO INFORMATICA LTDA
Período da Escrituração:	01/01/2024 a 31/12/2024
CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	25
Período Selecionado:	01 de julho de 2024 a 30 de setembro de 2024

Descrição	Nota	Saldo anterior	Saldo atual
RECEITA OPERACIONAL BRUTA		R$ 138.894.817,44	R$ 168.781.594,75
RECEITA OPERACIONAL BRUTA		R$ 138.894.817,44	R$ 168.781.594,75
VENDAS DE MERCADORIAS		R$ 138.200.125,68	R$ 168.476.868,80
SERVIÇOS MERCADO INTERNO		R$ 694.691,76	R$ 304.725,95
(-) (-) DEDUÇÕES DA RECEITA BRUTA		R$ (34.215.883,11)	R$ (53.008.592,01)
(-) VENDAS CANCELADAS		R$ (3.723.711,79)	R$ (19.939.896,52)
(-) (-) CANCELAMENTOS E DEVOLUÇÕES		R$ (3.723.711,79)	R$ (19.939.896,52)
(-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVICOS		R$ (30.492.171,32)	R$ (33.068.695,49)
(-) (-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVICOS		R$ (30.492.171,32)	R$ (33.068.695,49)
(-) (-) CUSTO DOS PRODUTOS/MERCADORIAS/SERVICOS		R$ (82.990.732,37)	R$ (96.395.054,99)
(-) CUSTO DAS MERCADORIAS VENDIDAS		R$ (82.990.732,37)	R$ (96.395.054,99)
(-) (+/-) DESPESAS OPERACIONAIS		R$ (16.844.161,92)	R$ (20.316.092,98)
(-) DE VENDAS		R$ (2.244.521,46)	R$ (3.301.977,53)
(-) DESPESAS COM VEÍCULOS		R$ (20.787,61)	R$ (19.736,02)
(-) DESPESAS GERAIS		R$ (2.223.733,85)	R$ (3.282.241,51)
(-) ADMINISTRATIVAS		R$ (12.869.125,84)	R$ (14.592.648,89)
(-) DESPESAS COM PESSOAL		R$ (633.093,23)	R$ (614.534,81)
(-) OCUPAÇÃO		R$ (200.427,89)	R$ (199.873,88)
(-) DEPRECIAÇÕES E AMORTIZAÇÕES		R$ (110.840,07)	R$ (110.721,32)
(-) UTILIDADES E SERVIÇOS		R$ (56.823,06)	R$ (60.612,62)
(-) DESPESAS GERAIS		R$ (11.693.518,20)	R$ (13.443.508,07)
(-) DESPESAS NÃO DEDUTÍVEIS		R$ (174.423,39)	R$ (163.398,19)
(-) DESPESAS FINANCEIRAS		R$ (2.283.456,87)	R$ (2.728.747,33)
(-) DESPESAS FINANCEIRAS		R$ (2.283.456,87)	R$ (2.728.747,33)
(-) RECEITAS FINANCEIRAS		R$ 712.017,58	R$ 826.883,51
RECEITAS FINANCEIRAS		R$ 712.017,58	R$ 826.883,51
(-) DESPESAS TRIBUTARIAS		R$ (159.075,33)	R$ (519.602,74)
(-) DESPESAS TRIBUTÁRIAS		R$ (159.075,33)	R$ (519.602,74)
OUTROS RESULTADOS OPERACIONAIS		R$ 8.678.202,90	R$ 6.769.427,43
OUTRAS RECEITAS OPERACIONAIS		R$ 8.678.202,90	R$ 6.769.427,43
RECEITAS OPERACIONAIS DIVERSAS		R$ 8.678.202,90	R$ 6.769.427,43
PROVISÃO PARA CONTRIBUIÇÃO SOCIAL		R$ (672.228,01)	R$ 0,00
CSLL		R$ (672.228,01)	R$ 0,00
PROVISÃO PARA IMPOSTO DE RENDA		R$ (1.861.300,02)	R$ 0,00
IRPJ		R$ (1.861.300,02)	R$ 0,00
(=) RESULTADO DO EXERCÍCIO		R$ 10.988.714,91	R$ 5.831.282,20

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Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 632

ORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813)

DEMONSTRAÇÃO DAS MUTAÇÕES DO PATRIMÔNIO LÍQUIDO

Entidade:	TORINO INFORMATICA LTDA				
Período da Escrituração:	01/01/2024 a 31/12/2024	CNPJ	03.619.767/0001-91	Número de Ordem do Livro:	25
Período Selecionado:	01 de julho de 2024 a 30 de setembro de 2024				

Histórico	Código de Aglutinação das Contas de Patrimônio Líquido					Total (R$)
	Capital Social (R$)	Reservas de Lucros - Doações Subvenções P/Investim (R$)	Lucros Acumulados (R$)	Lucros do Exercício (R$)	(-) Prejuízos do Execício (R$)	
Saldo Inicial em 01.07.2024	2.000.000,00	81.203.204,45	37.167.443,82	37.857.432,96	(-)16.647.615,63	141.580.465,60
Lucro Líquido do Exercício ENCERRAMENTO DE EXERCICIO				16.745.563,39		16.745.563,39
Prejuízo Líquido do Exercício ENCERRAMENTO DE EXERCICIO					(-)10.914.281,19	(-)10.914.281,19
Saldo Final em 30.09.2024	2.000.000,00	81.203.204,45	37.167.443,82	54.602.996,35	(-)27.561.896,82	147.411.747,80
Notas						

Este documento é parte integrante de escrituração cuja autenticação se comprova pelo recibo de número 93.3B.DC.B6.53.9F.69.7E.98.5E.DB.A3.B8.30.49.10.F7.18.72.A8-3, nos termos do Decreto nº 9.555/2018.

BALANÇO PATRIMONIAL

Entidade:	TORINO INFORMATICA LTDA
Período da Escrituração:	01/01/2024 a 31/12/2024
CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	25
Período Selecionado:	01 de outubro de 2024 a 31 de dezembro de 2024

Descrição	Nota	Saldo Inicial	Saldo Final
ATIVO		R$ 307.363.275,82	R$ 332.064.361,90
CIRCULANTE		R$ 298.658.213,33	R$ 323.926.391,61
DISPONÍVEL		R$ 29.906.984,76	R$ 73.746.473,81
BENS NUMERÁRIOS		R$ 92,81	R$ 92,81
DEPÓSITOS BANCÁRIOS A VISTA		R$ 255.820,70	R$ 246.329,88
APLICAÇÕES DE LIQUIDEZ IMEDIATA		R$ 29.651.071,25	R$ 73.500.051,12
CLIENTES		R$ 156.171.842,82	R$ 111.159.685,49
DUPLICATAS A RECEBER		R$ 156.171.842,82	R$ 111.159.685,49
OUTROS CRÉDITOS		R$ 51.077.189,87	R$ 59.009.670,84
ADIANTAMENTOS A TERCEIROS		R$ 289.589,57	R$ 1.158.445,13
ADIANTAMENTOS A FUNCIONARIOS		R$ 54.078,22	R$ 15.104,02
LUCROS DISTRIBUIDOS NO EXERCÍCIO		R$ 974.108,90	R$ 0,00
TRIBUTOS A RECUPERAR		R$ 44.950.163,62	R$ 53.026.872,13
OUTROS CREDITOS		R$ 4.809.249,56	R$ 4.809.249,56
ESTOQUES		R$ 61.459.729,98	R$ 79.979.677,19
ESTOQUES DIVERSOS		R$ 61.459.729,98	R$ 79.979.677,19
DESPESAS PAGAS ANTECIPADAMENTE		R$ 42.465,90	R$ 30.884,28
DESPESAS DE MESES SEGUINTES		R$ 42.465,90	R$ 30.884,28
NÃO CIRCULANTE		R$ 7.739.392,81	R$ 7.172.300,61
REALIZÁVEL A LONGO PRAZO		R$ 173.893,14	R$ 0,00
OUTROS CREDITOS		R$ 173.893,14	R$ 0,00
IMOBILIZADO		R$ 7.565.499,67	R$ 7.172.300,61
IMÓVEIS		R$ 5.650.000,00	R$ 5.650.000,00
BENS EM OPERAÇÃO		R$ 2.954.654,11	R$ 2.504.704,11
IMOBILIZADO EM ANDAMENTO		R$ 959.244,89	R$ 976.252,57
(-) (-) DEPRECIAÇÃO/AMORTIZAÇÃO/EXAUSTÃO ACUMULADA		R$ (1.998.399,33)	R$ (1.958.656,07)
ATIVO COMPENSATÓRIO		R$ 965.669,68	R$ 965.669,68
DEMONSTRAÇÕES DIVERSAS		R$ 965.669,68	R$ 965.669,68
PASSIVO		R$ 307.363.275,82	R$ 332.064.361,90
CIRCULANTE		R$ 158.848.113,04	R$ 188.484.221,39
INSTITUIÇÕES FINANCEIRAS		R$ 79.944.467,28	R$ 95.028.340,07
Emprestimos		R$ 79.944.467,28	R$ 95.028.340,07
FORNECEDORES		R$ 74.176.618,13	R$ 87.143.384,79
FORNECEDORES NACIONAIS		R$ 74.176.618,13	R$ 87.143.384,79
OBRIGAÇÕES TRIBUTÁRIAS		R$ 3.627.458,76	R$ 3.869.827,53
IMPOSTOS E CONTRIBUIÇÕES A RECOLHER		R$ 3.416.803,99	R$ 3.827.066,99
TRIBUTOS RETIDOS A RECOLHER		R$ 210.654,77	R$ 42.760,54
OBRIGAÇÕES TRABALHISTAS E PREVIDENCIÁRIAS		R$ 133.708,22	R$ 136.174,84
OBRIGAÇÕES COM O PESSOAL		R$ 77.402,45	R$ 71.633,93
OBRIGAÇÕES PREVIDENCIÁRIAS		R$ 56.305,77	R$ 64.530,91
PROVISÕES		R$ 0,00	R$ 10,00
OUTRAS OBRIGAÇÕES		R$ 965.860,65	R$ 2.306.494,16
ADIANTAMENTOS DE CLIENTES		R$ 579.092,10	R$ 1.940.203,44
CONTAS A PAGAR		R$ 136.672,69	R$ 116.194,86
PROVISÃO PARA IRPJ E CSLL		R$ 250.095,86	R$ 250.095,86
NÃO CIRCULANTE		R$ 137.745,30	R$ 116.599,14
OBRIGAÇÕES A LONGO PRAZO		R$ 137.745,30	R$ 116.599,14
INSTITUIÇÕES FINANCEIRAS		R$ 137.745,30	R$ 116.599,14
EMPRÉSTIMOS		R$ 137.745,30	R$ 116.599,14
PATRIMÔNIO LÍQUIDO		R$ 147.411.747,80	R$ 142.497.871,69
CAPITAL SOCIAL		R$ 2.000.000,00	R$ 2.000.000,00
CAPITAL SUBSCRITO		R$ 2.000.000,00	R$ 2.000.000,00
RESERVAS DE LUCROS		R$ 81.203.204,45	R$ 81.203.204,45
LUCROS E PREJUÍZOS ACUMULADOS		R$ 64.208.543,35	R$ 59.294.667,24
LUCROS E PREJUÍZOS ACUMULADOS		R$ 37.167.443,82	R$ 35.863.334,92
LUCROS E PREJUÍZOS DO EXERCÍCIO		R$ 27.041.099,53	R$ 23.431.332,32
PASSIVO COMPENSATÓRIO		R$ 965.669,68	R$ 965.669,68
DEMONSTRAÇÕES DIVERSAS		R$ 965.669,68	R$ 965.669,68

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Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 634

DEMONSTRAÇÃO DE RESULTADO DO EXERCÍCIO

Entidade:	TORINO INFORMATICA LTDA		
Período da Escrituração:	01/01/2024 a 31/12/2024	CNPJ:	03.619.767/0001-91
Número de Ordem do Livro:	25		
Período Selecionado:	01 de outubro de 2024 a 31 de dezembro de 2024		

Descrição	Nota	Saldo anterior	Saldo atual
RECEITA OPERACIONAL BRUTA		R$ 168.781.594,75	R$ 146.764.120,72
RECEITA OPERACIONAL BRUTA		R$ 168.781.594,75	R$ 146.764.120,72
VENDAS DE MERCADORIAS		R$ 168.476.868,80	R$ 146.445.646,27
SERVIÇOS MERCADO INTERNO		R$ 304.725,95	R$ 318.474,45
(-) (-) DEDUÇÕES DA RECEITA BRUTA		R$ (53.008.592,01)	R$ (39.317.585,62)
(-) VENDAS CANCELADAS		R$ (19.939.896,52)	R$ (12.558.724,86)
(-) (-) CANCELAMENTOS E DEVOLUÇÕES		R$ (19.939.896,52)	R$ (12.558.724,86)
(-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVICOS		R$ (33.068.695,49)	R$ (26.758.860,76)
(-) (-) IMPOSTOS INCIDENTES SOBRE VENDAS E SERVICOS		R$ (33.068.695,49)	R$ (26.758.860,76)
(-) (-) CUSTO DOS PRODUTOS/MERCADORIAS/SERVICOS		R$ (96.395.054,99)	R$ (90.462.245,02)
(-) CUSTO DAS MERCADORIAS VENDIDAS		R$ (96.395.054,99)	R$ (90.462.245,02)
(-) (+/-) DESPESAS OPERACIONAIS		R$ (20.316.092,98)	R$ (27.347.552,85)
(-) DE VENDAS		R$ (3.301.977,53)	R$ (2.529.728,40)
(-) DESPESAS COM VEÍCULOS		R$ (19.736,02)	R$ (21.856,34)
(-) DESPESAS GERAIS		R$ (3.282.241,51)	R$ (2.507.872,06)
(-) ADMINISTRATIVAS		R$ (14.592.648,89)	R$ (12.023.682,36)
(-) DESPESAS COM PESSOAL		R$ (614.534,81)	R$ (822.050,28)
(-) OCUPAÇÃO		R$ (199.873,88)	R$ (199.705,60)
(-) DEPRECIAÇÕES E AMORTIZAÇÕES		R$ (110.721,32)	R$ (110.240,07)
(-) UTILIDADES E SERVIÇOS		R$ (60.612,62)	R$ (63.854,98)
(-) DESPESAS GERAIS		R$ (13.443.508,07)	R$ (10.656.281,27)
(-) DESPESAS NÃO DEDUTÍVEIS		R$ (163.398,19)	R$ (171.550,16)
(-) DESPESAS FINANCEIRAS		R$ (2.728.747,33)	R$ (13.117.077,25)
(-) DESPESAS FINANCEIRAS		R$ (2.728.747,33)	R$ (13.117.077,25)
(-) RECEITAS FINANCEIRAS		R$ 826.883,51	R$ 688.309,87
RECEITAS FINANCEIRAS		R$ 826.883,51	R$ 688.309,87
(-) DESPESAS TRIBUTARIAS		R$ (519.602,74)	R$ (365.374,71)
(-) DESPESAS TRIBUTÁRIAS		R$ (519.602,74)	R$ (365.374,71)
OUTROS RESULTADOS OPERACIONAIS		R$ 6.769.427,43	R$ 6.753.495,56
OUTRAS RECEITAS OPERACIONAIS		R$ 6.769.427,43	R$ 7.053.462,23
RECEITAS OPERACIONAIS DIVERSAS		R$ 6.769.427,43	R$ 6.813.462,23
RECEITAS		R$ 0,00	R$ 240.000,00
(-) OUTRAS DESPESAS OPERACIONAIS		R$ 0,00	R$ (299.966,67)
(-) CUSTOS		R$ 0,00	R$ (299.966,67)
(-) (=) RESULTADO DO EXERCÍCIO		R$ 5.831.282,20	R$ (3.609.767,21)

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Versão 10.3.3 do Visualizador

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 635

INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813)

DEMONSTRAÇÃO DAS MUTAÇÕES DO PATRIMÔNIO LÍQUIDO

Entidade:	TORINO INFORMATICA LTDA				
Período da Escrituração:	01/01/2024 a 31/12/2024	CNP	03.619.767/0001-91	Número de Ordem do Livro:	25
Período Selecionado:	01 de outubro de 2024 a 31 de dezembro de 2024				

Histórico	Código de Aglutinação das Contas de Patrimônio Líquido					Total (R$)
	Capital Social (R$)	Reservas de Lucros - Doações Subvenções P/Investim (R$)	Lucros Acumulados (R$)	Lucros do Exercício (R$)	(-) Prejuízos do Execício (R$)	
Saldo Inicial em 01.10.2024	2.000.000,00	81.203.204,45	37.167.443,82	54.602.996,35	(-)27.561.896,82	147.411.747,80
Lucro Líquido do Exercício ENCERRAMENTO DE EXERCICIO				8.249.839,94		8.249.839,94
Prejuízo Líquido do Exercício ENCERRAMENTO DE EXERCICIO					(-)11.859.607,15	(-)11.859.607,15
Distribuicao de Lucros a Socios DENISE DO AMARAL RISSIO;RODRIGO DO AMARAL RISSIO			(-)1.304.108,90			(-)1.304.108,90
Saldo Final em 31.12.2024	2.000.000,00	81.203.204,45	35.863.334,92	62.852.836,29	(-)39.421.503,97	142.497.871,69
Notas						

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SEI

Av. XV de Novembro, 701
Maringá • Paraná • Brasil
CEP: 87013 230
(44) 3221-1234

ATESTADO DE CAPACIDADE TÉCNICA

Atestamos para fins de licitações e cadastro, que a empresa TORINO INFORMÁTICA LTDA, estabelecida da Avenida 600, s/nº, TIMS, Serra – ES, CNPJ 03.619.767/0005-15, forneceu para esta Administração, PREFEITURA DO MUNICÍPIO DE MARINGÁ, com prestação de assistência técnica em garantia os produtos abaixo relacionados, nada constando que a desabone até a apresente data.

Pregão Eletrônico nº 291/2021

Objeto entregue:

240 (duzentos e quarenta) Notebook HP 250G8, com Garantia On-Site de 36 meses.

Pregão Eletrônico nº 380/2021

Objeto entregue:

3443 (três mil quatrocentos e quarenta e três) Notebook HP ProBook 445 G8, com Garantia On-Site de 24 meses.

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KAIO MENDES DE AMORIM
Data: 16/09/2022 09:03:46-0300
Verifique em https://verificador.iti.br

Kaio Mendes de Amorim

Gerente de Produção Tecnológica

PODER JUDICIÁRIO
TRIBUNAL REGIONAL DO TRABALHO DA 8ª REGIÃO
SECRETARIA DE TECNOLOGIA DA INFORMAÇÃO

ATESTADO DE CAPACIDADE TÉCNICA

Atestamos, a pedido da interessada e para fins de prova, aptidão de desempenho e atestado de execução, que a empresa **TORINO INFORMÁTICA SA**, inscrita no CNPJ sob o nº03.619.767/0005-15, estabelecida na Avenida 600 s/n, na cidade de Serra, Estado do Espírito Santo, prestou serviços ao **Tribunal Regional do Trabalho da 8ª Região**, CNPJ nº 01.547.343/0001-33, na entrega de 165 (cento e sessenta e cinco) unidades de equipamento tipo Ultrabook HP PROBOOK 440 GB com Sistema Operacional MICROSOFT WINDOWS 10 PROFESSIONAL, dentro do prazo previsto na Ata de Registro de Preços nº 72/2017 – PE nº 54/2017, no valor de R$-724.350,00 em conformidade com a DANFE nº 000.000.091 – Série 1.

Registramos, ainda, que a prestação dos equipamentos acima referidos, apresentaram bom desempenho operacional, tendo a empresa cumprido fielmente com suas obrigações, nada constando que a desabone técnica e comercialmente, até a presente data.

Belém, 22 de fevereiro de 2018.

MARCO AURELIO FIDELIS REGO:60570059291

Assinado de forma digital por MARCO AURELIO FIDELIS REGO:60570059291
Dados: 2018.02.23 15:01:00 -03'00'

Marco Aurélio Fidelis Rêgo
Diretor da SETIN

PODER JUDICIÁRIO
TRIBUNAL DE JUSTIÇA
DO ESTADO DO RIO GRANDE DO SUL

TRIBUNAL DE JUSTIÇA DO ESTADO DO RIO GRANDE DO SUL
Praça Mal Deodoro, 55 - Bairro Centro - CEP 90110-230 - Porto Alegre - RS - www.tjrs.jus.br

ATESTADO - SERVIÇO DE LICITAÇÕES

ATESTADO DE CAPACIDADE TÉCNICA

Nos termos do Ato nº 28/2023-P, atestamos, para os devidos fins, que a empresa **TORINO INFORMÁTICA LTDA.**, com sede em Cidade da Serra/ES, na Avenida Seiscentos, s/n - Quadra 15, Módulo 10, Setor Industrial, Bairro TIMS, inscrita no CNPJ sob nº 03.619.767/0005-15, entregou, satisfatoriamente, os produtos descritos a seguir, para o **TRIBUNAL DE JUSTIÇA DO ESTADO DO RIO GRANDE DO SUL**, CNPJ nº 89.522.064/0001-66.

CONTRATO Nº 7/2023-DEC

PREGÃO ELETRÔNICO Nº 117/2022-DEC

PROCESSO SEI Nº 8.2022.0207/000119-6

OBJETO: Aquisição de 5.400 (cinco mil e quatrocentos) computadores portáteis do tipo *ultrabook* com garantia *on-site* por 60 (sessenta) meses (marca HP Modelo EliteBook 640 G9), conforme segue:

Primeiro lote: entrega de 1.500 (mil e quinhentas) unidades, no prazo de 60 (sessenta) dias corridos, a contar da solicitação formal do contratante.

Segundo lote: entrega de 1.500 (mil e quinhentas) unidades, no prazo de 45 (quarenta e cinco) dias corridos, a contar do término do prazo de entrega do primeiro lote.

Terceiro lote: entrega de 1.500 (mil e quinhentas) unidades, no prazo de 45 (quarenta e cinco) dias corridos, a contar do término do prazo de entrega do segundo lote.

Quarto lote: entrega de 900 (novecentas) unidades, no prazo de 45 (quarenta e cinco) dias corridos, a contar do término do prazo de entrega do terceiro lote.

PRAZO DE GARANTIA E MANUTENÇÃO: 60 (sessenta) meses.

Penalidades aplicadas ao fornecedor no contrato acima: nada consta.

Documento assinado eletronicamente por **Selma Vitt Salinez**, **Diretor(a) de Departamento**, em 17/10/2023, às 12:59, conforme art. 1º, III, "b", da Lei 11.419/2006.

Documento assinado eletronicamente por **Ananda Paula Silva Matte**, **Chefe de Serviço**, em 17/10/2023, às 13:02, conforme art. 1º, III, "b", da Lei 11.419/2006.

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DECLARAÇÕES

Ref: EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP

Declaro para os devidos fins junto à Comissão Permanente de Licitação que:

a) cumpro plenamente os requisitos de habilitação e estou ciente de que respondo pela veracidade das informações prestadas, na forma da lei;

b) em atenção ao item 5.6. do Edital e ao Art. 14, e incisos, da Lei n.º 14.133/2021, não estou impedido de participar direta ou indiretamente desta licitação, e ainda, que não possuo sócios, diretores ou gerentes, que sejam cônjuge, companheiro ou parente em linha reta, colateral ou por afinidade, até o terceiro grau, inclusive, de membros ou de servidores ocupantes de cargo de direção, chefia ou assessoramento no âmbito do Ministério Público do Estado do Amazonas e de sua CPL;

c) recebi o edital e todos os documentos que o integram, dispondo de todos os elementos e informações necessários à elaboração da proposta de preços com total e completo conhecimento do objeto da licitação;

d) os documentos e declarações apresentados são fiéis e verdadeiros;

e) caso seja vencedor do certame e não cadastrado no SISTEMA DE ADMINISTRAÇÃO FINANCEIRA E CONTABILIDADE da SECRETARIA DA FAZENDA DO ESTADO DO AMAZONAS – SEFAZ-AM, encaminharei à CONTRATANTE os documentos necessários para efetuar o referido cadastramento no prazo de 05 (cinco) dias úteis, a contar da adjudicação, sob pena de perder o direito de preferência à contratação em favor dos demais licitantes subsequentes, sem prejuízo da possibilidade de responder a procedimento administrativo de responsabilização (PAR) por eventual retardamento da licitação;

f) o preço inclui, além do lucro, todos os custos e despesas, com tributos incidentes e encargos devidos, materiais, serviços, transporte, a integralidade dos custos para atendimento dos direitos trabalhistas assegurados na Constituição Federal, nas leis trabalhistas, nas normas infralegais, nas convenções coletivas de trabalho e nos termos de ajustamento de conduta vigentes na data de entrega das propostas, bem como quaisquer outras despesas diretas e indiretas incidentes na prestação de serviços;

g) a proposta apresentada para participar do presente Pregão foi elaborada de maneira independente por esta licitante e o seu conteúdo não foi, no todo ou em parte, direta ou indiretamente, informado, discutido ou recebido de qualquer outro participante potencial ou de fato, por qualquer meio ou por qualquer pessoa.

Sorocaba, 30 de junho de 2025.

RODRIGO DO AMARAL RISSIO:22080721895

Assinado de forma digital por RODRIGO DO AMARAL RISSIO:22080721895
Dados: 2025.07.01 16:05:03 -03'00'

Torino Informática Ltda- CNPJ: 03.619.767/0005-15
Rodrigo do Amaral Rissio- Socio Procurador

Observação: A apresentação da proposta implicará a plena aceitação, por parte do licitante, das condições estabelecidas neste edital e seus anexos, bem como, todas as especificações do objeto contidas na proposta vinculam a fornecedora.

DECLARAÇÃO DE CUMPRIMENTO AO ARTIGO 7º, INCISO XXXIII

Ref: EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP

A empresa Torino Informática LTDA., inscrita no CNPJ sob o nº 03.619.767/0005-15, estabelecida na Rua AV 600 S/N QUADRA 15– MODULO 10 –na SERRA/ES , DECLARA para os fins de direito, na qualidade de licitante que em cumprimento ao inciso XXXIII, do artigo 7º. da Constituição Federal de que não possuímos em nosso quadro funcional pessoas menores de 18 (dezoito) anos em trabalho noturno, perigoso ou insalubre e, de menores de 16 (dezesseis) anos em qualquer trabalho, salvo na condição de aprendiz, a partir dos 14 (quatorze) anos.

Por ser expressão de verdade, firmamos o presente

.

Sorocaba, 30 de Junho de 2025.

RODRIGO DO AMARAL RISSIO:22080721895

Assinado de forma digital por RODRIGO DO AMARAL RISSIO:22080721895
Dados: 2025.07.01 16:05:17 -03'00'

Torino Informática Ltda- CNPJ: 03.619.767/0005-15
Rodrigo do Amaral Rissio- Socio Procurador

DECLARAÇÕES COMPLEMENTARES

Ref: EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP

Declaro para os devidos fins junto à Comissão Permanente de Licitação que:

a) cumpro plenamente os requisitos de habilitação e estou ciente de que respondo pela veracidade das informações prestadas, na forma da lei;

b) em atenção ao item 5.6. do Edital e ao Art. 14, e incisos, da Lei n.º 14.133/2021, não estou impedido de participar direta ou indiretamente desta licitação, e ainda, que não possuo sócios, diretores ou gerentes, que sejam cônjuge, companheiro ou parente em linha reta, colateral ou porafinidade, até o terceiro grau, inclusive, de membros ou de servidores ocupantes de cargo de direção, chefia ou assessoramento no âmbito do Ministério Público do Estado do Amazonas e de sua CPL;

c) recebi o edital e todos os documentos que o integram, dispondo de todos os elementos e informações necessários à elaboração da proposta de preços com total e completo conhecimento do objeto da licitação;

d) os documentos e declarações apresentados são fiéis e verdadeiros;

e) caso seja vencedor do certame e não cadastrado no SISTEMA DE ADMINISTRAÇÃO FINANCEIRA E CONTABILIDADE da SECRETARIA DA FAZENDA DO ESTADO DO AMAZONAS – SEFAZ-AM, encaminharei à CONTRATANTE os documentos necessários para efetuar o referido cadastramento no prazo de 05 (cinco) dias úteis, a contar da adjudicação, sob pena de perder o direito de preferência à contratação em favor dos demais licitantes subsequentes, sem prejuízo da possibilidade de responder a procedimento administrativo de responsabilização (PAR) por eventual retardamento da licitação;

f) o preço inclui, além do lucro, todos os custos e despesas, com tributos incidentes e encargos devidos, materiais, serviços, transporte, a integralidade dos custos para atendimento dos direitos trabalhistas assegurados na Constituição Federal, nas leis trabalhistas, nas normas infralegais, nas convenções coletivas de trabalho e nos termos de ajustamento de conduta vigentes na data de entrega das propostas, bem como quaisquer outras despesas diretas e indiretas incidentes na prestação de serviços;

g) a proposta apresentada para participar do presente Pregão foi elaborada de maneira independente por esta licitante e o seu conteúdo não foi, no todo ou em parte, direta ou indiretamente, informado, discutido ou recebido de qualquer outro participante potencial ou de fato, por qualquer meio ou por qualquer pessoa.

Sorocaba, 30 de junho de 2025.

RODRIGO DO AMARAL RISSIO:22080721895
Assinado de forma digital por RODRIGO DO AMARAL RISSIO:22080721895
Dados: 2025.07.01 16:05:29 -03'00'

Torino Informática Ltda- CNPJ: 03.619.767/0005-15
Rodrigo do Amaral Rissio- Socio Procurador

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 643

TRIBUNAL DE CONTAS DA UNIÃO

Consulta Consolidada de Pessoa Jurídica

Este relatório tem por objetivo apresentar os resultados consolidados de consultas eletrônicas realizadas diretamente nos bancos de dados dos respectivos cadastros. A responsabilidade pela veracidade do resultado da consulta é do Órgão gestor de cada cadastro consultado. A informação relativa à razão social da Pessoa Jurídica é extraída do Cadastro Nacional da Pessoa Jurídica, mantido pela Receita Federal do Brasil.

Consulta realizada em: 05/08/2025 11:00:09

Informações da Pessoa Jurídica:

Razão Social: **TORINO INFORMATICA LTDA..**
CNPJ: **03.619.767/0005-15**

Resultados da Consulta Eletrônica:

Órgão Gestor: **TCU**
Cadastro: **Licitantes Inidôneos**
Resultado da consulta: **Nada Consta**

Para acessar a certidão original no portal do órgão gestor, clique AQUI.

Órgão Gestor: **CNJ**
Cadastro: **CNIA - Cadastro Nacional de Condenações Cíveis por Ato de Improbidade Administrativa e Inelegibilidade**
Resultado da consulta: **Nada Consta**

Para acessar a certidão original no portal do órgão gestor, clique AQUI.

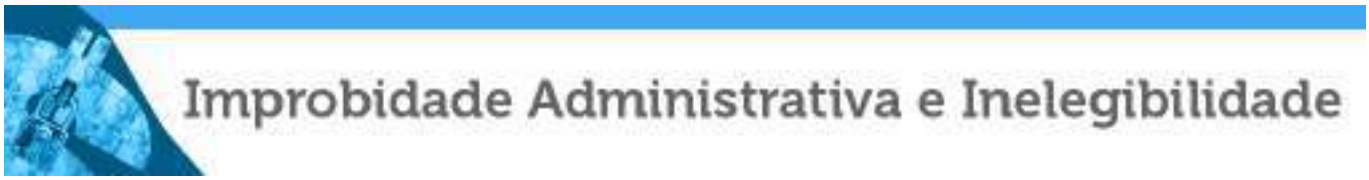
Órgão Gestor: **Portal da Transparência**
Cadastro: **Cadastro Nacional de Empresas Inidôneas e Suspensas**
Resultado da consulta: **Constam Registros**
Suspensão (07/07/2026) - PROCURADORIA GERAL DE JUSTIÇA DO MARANHÃO

Para acessar a certidão original no portal do órgão gestor, clique AQUI.

Órgão Gestor: **Portal da Transparência**
Cadastro: **CNEP - Cadastro Nacional de Empresas Punidas**
Resultado da consulta: **Nada Consta**

Para acessar a certidão original no portal do órgão gestor, clique AQUI.

Obs: A consulta consolidada de pessoa jurídica visa atender aos princípios de simplificação e racionalização de serviços públicos digitais. Fundamento legal: Lei nº 12.965, de 23 de abril de 2014, Lei nº 13.460, de 26 de junho de 2017, Lei nº 13.726, de 8 de outubro de 2018, Decreto nº 8.638 de 15, de janeiro de 2016.



Certidão Negativa

Certifico que nesta data (05/08/2025 às 10:59) NÃO CONSTA no Cadastro Nacional de Condenações Cíveis por Ato de Improbidade Administrativa e Inelegibilidade registros de condenação com trânsito em julgado ou sanção ativa quanto ao CNPJ nº 03.619.767/0005-15.

A condenação por atos de improbidade administrativa não implica automático e necessário reconhecimento da inelegibilidade do condenado.
Para consultas sobre inelegibilidade acesse portal do TSE em http://divulgacandcontas.tse.jus.br/

Esta certidão é expedida gratuitamente. Sua autenticidade pode ser por meio do número de controle 6892.0E2F.5626.A351 no seguinte endereço: https://www.cnj.jus.br/improbidade_adm/autenticar_certidao.php

Habilitação TORINO INFORMÁTICA LTDA., CNPJ 03.619.767/0005-15 (1711813) SEI 2025.001317 / pg. 645

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA-GERAL DE JUSTIÇA
SETOR DE COMPRAS E SERVIÇOS

ATA DE REGISTRO DE PREÇO Nº13.2025.CPL.1679330.2025.001317
PREGÃO ELETRÔNICO 94.010/2025-CPL/MP/PGJ-SRP

OBJETO	COMPRASNET	LOTES	PROCESSO	DOMPE	PNCP	VALIDADE
Fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses	---		2025.001317	3131 29/07/2025	29/07/2025	29/07/2026

FORNECEDOR	ITEM	ESPECIFICAÇÃO	UNIDADE	QTD	VALOR UNITÁRIO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	VALOR TOTAL	VALOR UTILIZADO	SALDO	UNIDADES FORNECIDAS	UNIDADES DISPONÍVEIS
E.R. SOLUCOES INFORMATICA LTDA. CNPJ: 05.778.325/0005-47	1	COMPUTADOR TIPO 1 - "ALL IN ONE COM MONITOR AUXILIAR". Marca/Modelo: LENOVO TC TINY-IN-ONE 23.8" TIO24 GEN 5.	UNIDADE	1.000	R$ 9.880,00																					R$ 9.880.000,00	R$ 0,00	R$ 9.880.000,00	0	1000
	2	COMPUTADOR TIPO 2 - "WORKSTATION COM MONITOR". Marca/Modelo: LENOVO THINKSTATION P3 TW.	UNIDADE	50	R$ 20.300,00																					R$ 1.015.000,00	R$ 0,00	R$ 1.015.000,00	0	50
	4	COMPUTADOR TIPO 4 - "WORKSTATION MÓVEL". Marca/Modelo: THINKPAD P16v GEN 2 (INTEL).	UNIDADE	20	R$ 16.990,00																					R$ 339.800,00	R$ 0,00	R$ 339.800,00	0	20
																			VALORES TOTAIS						**R$ 11.234.800,00**	**R$ 0,00**	**R$ 11.234.800,00**		

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA-GERAL DE JUSTIÇA
SETOR DE COMPRAS E SERVIÇOS

ATA DE REGISTRO DE PREÇO Nº13.2025.CPL.1679330.2025.001317
PREGÃO ELETRÔNICO 94.010/2025-CPL/MP/PGJ-SRP

OBJETO	COMPRASNET	PROCESSO	DOMPE	PNCP	VALIDADE
Fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses	---	2025.001317	3131 29/07/2025	29/07/2025	29/07/2026

FORNECEDOR	ITEM	ESPECIFICAÇÃO	UNIDADE	QTD	VALOR UNITÁRIO	VALOR TOTAL	VALOR UTILIZADO	SALDO	UNIDADES FORNECIDAS	UNIDADES DISPONÍVEIS	STATUS DE DISPONIBILIDADE DE SALDO DA ARP	
E.R. SOLUCOES INFORMATICA LTDA. CNPJ: 05.778.325/0005-47	1	COMPUTADOR TIPO 1 - “ALL IN ONE COM MONITOR AUXILIAR”. Marca/Modelo: LENOVO TC TINY-IN-ONE 23.8" TIO24 GEN 5.	UNIDADE	1.000	R$ 9.880,00	R$ 9.880.000,00	R$ 0,00	R$ 9.880.000,00	0	1000	100%	
	2	COMPUTADOR TIPO 2 - “WORKSTATION COM MONITOR”. Marca/Modelo: LENOVO THINKSTATION P3 TW.	UNIDADE	50	R$ 20.300,00	R$ 1.015.000,00	R$ 0,00	R$ 1.015.000,00	0	50	100%	
	4	COMPUTADOR TIPO 4 - "WORKSTATION MÓVEL". Marca/Modelo: THINKPAD P16v GEN 2 (INTEL).	UNIDADE	20	R$ 16.990,00	R$ 339.800,00	R$ 0,00	R$ 339.800,00	0	20	100%	
						R$ 11.234.800,00	**R$ 0,00**	**R$ 11.234.800,00**				

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

CERTIDÃO Nº 50.2025.SCOMS.1687672.2025.001317

CERTIFICO, para fins de informação a constar nos presentes autos, que **foi realizada, nesta data, a juntada do Mapa de Acompanhamento** (doc. 1687662) **e respectivo Informativo de Saldo de ARP** (doc. 1687663), referentes à **Ata de Registro de Preços 13.2025.CPL** (1679330), decorrente do Pregão Eletrônico 94.010/2025-CPL/MP/PGJ-SRP, cujo objeto é o *fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.*

Certifico, ainda, que o PI-2025.001317 será encerrado na presente Unidade, após tomadas todas as providências de estilo.

É a certidão.

Iury Fechine Ramos

Chefe do Setor de Compras e Serviços

Documento assinado eletronicamente por **Iury Fechine Ramos**, **Chefe do Setor de Compras e Serviços - SCOMS**, em 01/08/2025, às 14:04, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1687672** e o código CRC **A70CC424**.

PROCURADORIA GERAL DE JUSTIÇA

TERMO DE JULGAMENTO

UASG 925849 - PROCURADORIA GERAL DE JUSTIÇA - AM

PREGÃO 94010/2025

Fundamentação legal:	Lei 14.133/2021	Característica:	SRP - Registro de Preço
Critério de julgamento:	Menor Preço / Maior Desconto	Modo de disputa:	Aberto
Compra emergencial:	Não	UF da UASG:	AM
Objeto da compra:	Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 mes		
Entrega de propostas:	De 12/06/2025 às 08:00 até 30/06/2025 às 10:00		
Abertura da sessão pública:	Dia 30/06/2025 às 10:00 (horário de Brasília)		

Mensagens do chat da compra

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 10:00:02	A sessão pública está aberta. Até 1 item poderá estar em disputa simultaneamente e o período de abertura para disputa será entre 08:00 e 18:00. Haverá aviso prévio de abertura dos itens de 10 minutos. Mantenham-se conectados.
Sistema	30/06/2025 às 10:15:46	Prezados Licitantes, bom dia.
Sistema	30/06/2025 às 10:15:50	Sejam bem vindos à sessão pública do Pregão Eletrônico 94.010/2025 que tem por objeto o registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses.
Sistema	30/06/2025 às 10:15:59	Prezados, em breve será aberta a fase de disputa. Solicito atenção e comprometimento aos valores apresentados nos lances, visto que vinculam a empresa à manutenção do preço por um período de 12 meses, incumbindo a ela, portanto, a responsabilidade pela correta precificação da sua oferta.
Sistema	30/06/2025 às 10:16:10	Solicito atenção ao subitem 6.10 do Instrumento Convocatório no intuito do adequado acompanhamento do procedimento por parte de todos os interessados.
Sistema	30/06/2025 às 10:16:20	Boa disputa.
Sistema	30/06/2025 às 14:06:48	A etapa de julgamento de propostas foi iniciada. Para acompanhá-la acesse a opção "Seleção de fornecedores" na linha do tempo.
Sistema	30/06/2025 às 14:24:10	Prezados, encerrada a fase de disputa, passaremos à análise das ofertas apresentadas pelas licitantes mais bem colocadas na ordem de classificação.
Sistema	30/06/2025 às 14:26:29	No entanto, cabe tratar com os primeiros colocados para o Item 2. Solicito atenção aos interessados.
Sistema	30/06/2025 às 14:58:29	Senhores, considerando a desclassificação da proposta da licitante TROGON COMERCIO DE INFORMATICA LTDA SP para o item 2, passaremos a tratar com os licitantes seguintes. Solicito atenção aos interessados.
Sistema	30/06/2025 às 15:24:14	Prezados, considerando que o licitante HOUSE LTDA. não se manifestou, passaremos a tratativa com a licitante 42.816.024 LEONARDO CATIVO SOUSA. Solicito atenção à interessada.

Relatório PNCP - Julgamento/Habilitação - ITEM 3 (1711536) SEI 2025.001317 / pg. 2

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 15:36:05	Senhor licitante, solicito manifestação.
Sistema	30/06/2025 às 15:52:50	Senhores, em breve estarei convocando as licitantes mais bem colocadas na ordem de classificação, para envio de nova proposta ajustada ao valor dos lances para cada item.
Sistema	30/06/2025 às 15:53:19	O prazo para envio é de 2 (duas) horas contadas a partir da convocação no sistema.
Sistema	30/06/2025 às 15:57:21	Com fundamento na letra "k" do subitem 9.2 do Edital, deverá ser enviada junto à proposta de preços "documentação técnica (manuais, catálogos ou prospectos), com as características detalhadas (marca, modelo, cor, tipo de material e medidas) e imagens ilustrativas dos produtos propostos, que possibilitem a completa averiguação de conformidade com as especificações, visando facilitar a avaliação a ser realizada por técnicos deste Órgão."
Sistema	30/06/2025 às 15:59:25	Poderá ser apresentado na proposta ou junto dela, links do fabricante/fornecedor, desde que atenda, no mínimo, as exigências do dispositivo mencionado.
Sistema	30/06/2025 às 16:01:38	Em breve as licitantes mais bem classificadas serão convocadas no sistema. Solicito atenção às interessadas.
Sistema	30/06/2025 às 16:04:57	Senhores, considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retornando amanhã (01/07/2025), a partir das 10h (horário Brasília) para as convocações.
Sistema	30/06/2025 às 16:05:13	Aguardo a todos no dia e hora aqui agendados.
Sistema	30/06/2025 às 16:05:28	Obrigado pela atenção e uma excelente tarde a todos.
Sistema	01/07/2025 às 10:05:27	Prezados Licitantes, bom dia.
Sistema	01/07/2025 às 10:16:19	Retornamos aos trabalhos deste certame, considerando a convocação dos licitantes mais bem classificados na ordem dos lances para envio de propostas.
Sistema	01/07/2025 às 10:27:59	Senhores, informo que o Quadro-Resumo do Processo de Compra Nª 195.2025.SCOMS.1609045.2025.001317 com os valores estimados para cada item já se encontra disponível no Portal do MPAM, no seguinte endereço:
Sistema	01/07/2025 às 10:28:11	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	01/07/2025 às 10:29:55	Senhores, em breve estarei convocando as licitantes para envio das proposta de preços ajustadas aos lances. Solicito atenção.
Sistema	01/07/2025 às 10:54:59	Senhores, considerando a solicitação de desclassificação de proposta para o Item 4 por parte do licitante MR COMERCIO DE PECAS E ACESSORIOS LTDA., será convocado para envio de proposta o próximo licitante na ordem de classificação. Solicito atenção.
Sistema	01/07/2025 às 13:39:54	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 13:43:26	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 2 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 14:32:39	Na sequência, considerando a desclassificação das licitantes 42.816.024 LEONARDO CATIVO SOUSA (Item 2) e HOUSE LTDA. (Item 4), serão convocados novos licitantes para envio de proposta de preços. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:00:55	Prezados, em breve serão convocados licitantes para envio de propostas para os itens 2 e 4. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:08:04	Prezados, será promovido um desempate para o Item 4 entre os licitantes A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA. e 42.816.024 LEONARDO CATIVO SOUSA. Solicito atenção aos interessados.
Sistema	01/07/2025 às 15:15:30	Realizado o desempate, passaremos à convocação de novo licitante para o Item 4. Solicito atenção.

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Responsável	Data/Hora	Mensagem
Sistema	01/07/2025 às 15:17:15	Será convocado também novo licitante para o Item 2. Solicito atenção.
Sistema	01/07/2025 às 15:18:12	Estando os licitantes devidamente convocados, fico no aguardo dos solicitados documentos.
Sistema	01/07/2025 às 18:31:24	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	01/07/2025 às 18:32:20	Considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retomando-os amanhã (02/07/2025), a partir das 10h (horário de Brasília).
Sistema	01/07/2025 às 18:32:44	Aguardo a todos no dia e hora aqui agendados.
Sistema	01/07/2025 às 18:33:01	Agradeço a atenção dispensada e desejo a todos um excelente fim de tarde.
Sistema	02/07/2025 às 10:02:34	Prezados, bom dia.
Sistema	02/07/2025 às 10:08:35	Senhores, informo que em breve será convocado novo licitante para envio de proposta para o item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 12:37:06	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	02/07/2025 às 12:38:31	Na sequência, será convocado novo licitante para envio de proposta para o Item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 14:52:01	Senhores, considerando o encerramento do prazo de envio de proposta para o Item 4 sem qualquer manifestação da convocada, informo que a referida proposta será recusada, conforme subitem 9.1 c/c 10.3.5. do Edital.
Sistema	02/07/2025 às 14:52:14	Na sequência, será convocado novo licitante para envio de proposta para o Item 4. Solicito atenção ao interessado.
Sistema	02/07/2025 às 16:50:23	Prezados, considerando a hora avançada, informo que encerraremos os trabalhos por hoje, retornando amanhã (03/07/2025), a partir das 10h (horário Brasília).
Sistema	02/07/2025 às 16:50:49	Aguardo a todos no dia e hora aqui agendados.
Sistema	02/07/2025 às 16:51:05	Finalizo desejando a todos uma excelente tarde.
Sistema	03/07/2025 às 10:11:15	Prezados Licitantes, bom dia.
Sistema	03/07/2025 às 10:11:53	Retornamos aos trabalhos deste certame considerando a convocação de novo licitante para envio de proposta para o Item 4.
Sistema	03/07/2025 às 10:12:35	Em breve estarei convocando novo licitante para envio de proposta ajusta ao lance para o Item 4. Solicito atenção ao interessado.
Sistema	03/07/2025 às 10:24:21	Prezados, em breve estarei convocando novo licitante para envio de proposta ajusta ao lance para o Item 4. Solicito atenção ao interessado.
Sistema	03/07/2025 às 10:38:26	Estando o Licitante devidamente convocado, fico no aguardo dos solicitados documentos. Obrigado!
Sistema	03/07/2025 às 11:46:29	Senhores Licitantes, recebidos os documentos referente ao Item 4, informo que os mesmos serão encaminhados à análise por parte do setor técnico deste Órgão Ministerial.
Sistema	03/07/2025 às 11:47:11	Senhores, considerando a proposta apresentada pela licitante E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 para o item 1, informo o seguinte:
Sistema	03/07/2025 às 11:48:53	Submetida a proposta e os documentos técnicos enviados pela licitante classificada, o setor técnico DTIC, através do Parecer Nº 15.2025.SIET.1661793.2025.001317, manifestou-se "pela aceitabilidade do produto ofertado".
Sistema	03/07/2025 às 11:50:25	Informo que o referido Parecer encontra-se disponível no Portal do MPAM, acessível a todos os interessados, no seguinte endereço: https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis

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Responsável	Data/Hora	Mensagem
Sistema	03/07/2025 às 11:53:21	Senhores, considerando a manifestação técnica expressa no Parecer Nª 15.2025.SIET e o atendimento a todas as exigências formais do Edital referente à proposta de preços, este Pregoeiro decide pela ACEITAÇÃO da oferta do licitante E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 para o item 1.
Sistema	07/07/2025 às 15:57:44	Prezados Licitantes, boa tarde.
Sistema	07/07/2025 às 15:58:26	Informo que retornaremos aos trabalhos deste certame amanhã (08/07/2025), a partir das 14h (horário de Brasília).
Sistema	07/07/2025 às 15:58:41	Aguardo a todos no dia e hora aqui agendados. Obrigado.
Sistema	08/07/2025 às 14:11:23	Prezados licitantes, boa tarde.
Sistema	08/07/2025 às 14:14:38	Prezados, retornamos aos trabalhos deste certame considerando as propostas dos seguintes licitantes:
Sistema	08/07/2025 às 14:16:14	a) TORINO INFORMÁTICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, para o Item 2; b) POSITIVO TECNOLOGIA S/A (Filial), CNPJ (MF) n.ª 81.243.735/0009-03, para o Item 3; e c) E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, para o Item 4
Sistema	08/07/2025 às 14:24:07	Encaminhadas as ofertas ao setor técnico para análise, o referido setor manifestou-se da seguinte forma:
Sistema	08/07/2025 às 14:26:15	Parecer Nª 16.2025.SIET.1661858.2025.001317 - TORINO INFORMÁTICA LTDA., ITEM 2 - Pela exposição de motivos, depreende-se que: a) O teclado não atende; b) O requisito de leitor biométrico no mouse e teclado não foi atendida; entre outros.
Sistema	08/07/2025 às 14:27:56	Parecer Nª 18.2025.SIET.1664620.2025.001317 - POSITIVO TECNOLOGIA S/A (FILIAL) - ITEM 3 - Recomenda-se, portanto, caso a licitante seja instada a reapresentar a proposta técnica, que ela esteja em conformidade com o disposto no subitem 18.14, informando marca, modelo e documentação comprobatória específica de todos os componentes, de modo a permitir a verificação inequívoca da compatibilidade do produto ofertado com o objeto licitado.
Sistema	08/07/2025 às 14:28:43	Parecer Nª 19.2025.SIET.1665305.2025.001317 - ER SOLUÇÕES INFORMÁTICA LTDA. - ITEM 4 - O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica OPINA pela aceitabilidade do produto ofertado.
Sistema	08/07/2025 às 14:30:03	Assim, com fundamento na análise dos Pareceres aqui apresentados, Este Pregoeiro decide:
Sistema	08/07/2025 às 14:32:07	a) Recusar a proposta de preços do licitante TORINO INFORMÁTICA LTDA., para o ITEM 2, em conformidade ao Parecer Nª 16.2025.SIET.1661858.2025.001317 e Item 10.3.2 do Edital do certame.
Sistema	08/07/2025 às 14:35:55	b) Diligenciar o licitante POSITIVO TECNOLOGIA S/A (FILIAL) - para que apresente nos documentos de proposta enviados para o Item 3, o pleno atendimento aos requisitos técnicos exigidos no Termo de Referência Nª 2.2025.DTIC.1525128.2025.001317, Anexo I ao Edital do certame.
Sistema	08/07/2025 às 14:37:36	Para tal, será aberto o prazo de 2 (duas horas para envio de documento complementar em providência à solicitação constante do Parecer Nª 18.2025.SIET.1664620.2025.001317.
Sistema	08/07/2025 às 14:39:05	c) Aceitar a proposta de preços apresentada pelo licitante ER SOLUÇÕES INFORMÁTICA LTDA., para o ITEM 4, em conformidade ao Parecer Nª 19.2025.SIET.1665305.2025.001317 e ao Item 10 do Edital do certame.
Sistema	08/07/2025 às 14:40:00	Prezados, informo que os pareceres mencionados encontram-se disponíveis e acessíveis a todos os interessados no Portal do MPAM no seguinte endereço:
Sistema	08/07/2025 às 14:40:33	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	08/07/2025 às 14:54:06	Prezado licitante POSITIVO TECNOLOGIA S/A (FILIAL), em breve V. Sa. será convocado para providências conforme apresentado nesse chat e no Parecer Nª 18.2025.SIET.1664620.2025.001317.
Sistema	08/07/2025 às 14:54:24	Solicito atenção.

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Responsável	Data/Hora	Mensagem
Sistema	08/07/2025 às 14:56:10	Prezados, considerando a desclassificação da proposta do licitante TORINO INFORMÁTICA LTDA., para o ITEM 2, informo que em breve será convocado novo licitante para envio de proposta para o Item. Solicito atenção aos interessados.
Sistema	08/07/2025 às 15:00:40	Prezados, tomadas as devidas providências e convocados os licitantes, fico no aguardo dos solicitados documentos.
Sistema	08/07/2025 às 17:25:18	Senhores, recebidos os documentos, informo que os mesmos serão encaminhados ao setor técnico para análise.
Sistema	08/07/2025 às 17:26:29	Assim, encerraremos os trabalhos por hoje, retornando em data posterior devidamente informada através desse chat, em tempo hábil ao acompanhamento de todos os interessados.
Sistema	08/07/2025 às 17:26:39	Agradeço a atenção dispensada.
Sistema	08/07/2025 às 17:26:52	Finalizo desejando uma excelente tarde a todos.
Sistema	10/07/2025 às 11:36:20	Prezados, bom dia.
Sistema	10/07/2025 às 11:36:57	Informo que retornaremos aos trabalhos deste certame amanhã (11/07/2025), a partir das 10h (horário Brasília).
Sistema	10/07/2025 às 11:37:33	Aguardo a todos no dia e hora aqui agendados.
Sistema	11/07/2025 às 10:00:40	Prezados Licitantes, bom dia.
Sistema	11/07/2025 às 10:21:39	Retornamos aos trabalhos deste certame considerando as propostas apresentadas pelos licitantes POSITIVO TECNOLOGIA S/A (Filial), para o Item 3 e E.R. SOLUCOES INFORMATICA LTDA., para o Item 2.
Sistema	11/07/2025 às 10:39:45	Senhores, recebidos os documentos de propostas e encaminhados ao setor técnico competente para análise, obtivemos os seguintes resultados:
Sistema	11/07/2025 às 10:40:56	a) Parecer Nª 21.2025.SIET.1668662.2025.001317 - ER SOLUÇÕES INFORMÁTICA LTDA., para o ITEM 2 - Conclusão - O conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica OPINA pela aceitabilidade do produto ofertado.
Sistema	11/07/2025 às 10:43:00	b) Parecer Nª 22.2025.SIET.1668772.2025.001317 - POSITIVO TECNOLOGIA S/A (FILIAL), para o Item 3 - Conclusão - Após análise da documentação apresentada pela licitante [...] foram observados alguns pontos inconclusivos, marcados como . Os pontos marcados com , são exigências que não foi possível comprovar sua aderência na segunda oportunidade de envio de documentação técnica.
Sistema	11/07/2025 às 10:44:33	Senhores, informo que o Parecer Nª 21.2025.SIET.1668662.2025.001317 e o Parecer Nª 22.2025.SIET.1668772.2025.001317 encontram-se disponíveis no Portal do MPAM, no seguinte
Sistema	11/07/2025 às 10:44:40	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	11/07/2025 às 10:46:44	Senhores, considerando os resultados das análises apresentados nos pareceres, informo o seguinte:
Sistema	11/07/2025 às 11:18:42	a) para saneamento das pendências apontadas nos pareceres, as licitantes serão convocadas para envio de documentos que comprovem o atendimento às exigências apontadas.
Sistema	11/07/2025 às 11:19:44	Assim, em breve convocarei as licitantes no sistema. Solicito atenção aos interessados.
Sistema	11/07/2025 às 11:25:58	Estando os licitantes devidamente convocados, fico no aguardo dos solicitados documentos.
Sistema	11/07/2025 às 14:23:53	Senhores, boa tarde.
Sistema	11/07/2025 às 14:25:25	Considerando o envio dos documentos solicitados referentes ao Item 2 por parte do Licitante E.R. SOLUCOES INFORMATICA LTDA. e sendo os mesmos suficientes para o pleno atendimento da solicitação, informo que:
Sistema	11/07/2025 às 14:27:08	Este Pregoeiro decide pela Aceitação da proposta de preços do licitante E.R. SOLUCOES INFORMATICA LTDA. para o Item 2, pelo pleno atendimento às exigências técnicas e formais do Edital, referentes à proposta e em conformidade ao Parecer Nª 21.2025.SIET.1668662.2025.001317.

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Responsável	Data/Hora	Mensagem
Sistema	11/07/2025 às 16:52:49	Prezados, recebidos os documentos referente ao Item 3, informo que os mesmos serão encaminhados para análise do setor técnico competente.
Sistema	11/07/2025 às 16:54:57	Considerando a hora avançada, encerraremos os trabalhos por hoje, retornando na segunda-feira (14/07/2025), a partir das 11h (horário de Brasília), para continuação dos trabalhos.
Sistema	11/07/2025 às 16:55:26	Aguardo a todos no dia e hora aqui agendados.
Sistema	11/07/2025 às 16:55:54	Agradeço a atenção dispensada. Finalizo desejando uma boa tarde e um excelente fim de semana a todos.
Sistema	14/07/2025 às 11:15:08	Prezados Licitantes, bom dia.
Sistema	14/07/2025 às 11:45:13	Senhores, considerando os documentos de Habilitação apresentados pelo Licitante E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47, informo que os mesmos atendem a todas as exigências estabelecidas no instrumento convocatório.
Sistema	14/07/2025 às 11:45:42	Nesse sentido, este Pregoeiro decide pela HABILITAÇÃO do licitante E.R. SOLUCOES INFORMATICA LTDA., CNPJ (MF) n.ª 05.778.325/0005-47.
Sistema	14/07/2025 às 12:02:53	Senhores, em breve estarei habilitando a licitante no próprio sistema. Solicito atenção.
Sistema	14/07/2025 às 15:26:33	Prezados Licitantes, recebidos os documentos apresentados pelo licitante POSITIVO TECNOLOGIA S/A (FILIAL), referente ao Item 3, em resposta às solicitações constantes do Ofício Nª 256.2025.CPL.1667127.2025.001317, informo o seguinte:
Sistema	14/07/2025 às 15:29:43	Senhores, apenas retificando, as solicitações constam do Parecer Nª 22.2025.SIET.1668772.2025.001317 e não do Ofício Nª 256.2025.CPL.1667127.2025.001317.
Sistema	14/07/2025 às 15:31:35	O setor técnico, através do PARECER Nª 22.2025.SIET.1668772.2025.001317, manifestou-se da seguinte forma:
Sistema	14/07/2025 às 15:40:50	Senhores, retificando, o setor técnico, através do PARECER Nª 25.2025.SIET.1671649.2025.001317, manifestou-se da seguinte forma:
Sistema	14/07/2025 às 15:42:58	3. Conclusão - Não sendo possível constatar os pontos controversos, e não sendo atendido a solicitação para que o licitante, em sua proposta, declare expressamente que a garantia abrange acidentes, inclusive danos não intencionais, tais como QUEDA, TELA QUEBRADA, DERRAMAMENTO DE LÍQUIDOS, OSCILAÇÃO DE ENERGIA, não se limitando às ocorrências supracitadas, sendo o rol apresentado uma lista não exaustiva.
Sistema	14/07/2025 às 15:43:42	Informo que o referido PARECER Nª 25.2025.SIET.1671649.2025.001317 encontra-se disponível no Portal do MPAM, no seguinte endereço:
Sistema	14/07/2025 às 15:44:09	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	14/07/2025 às 15:46:55	Prezados, considerando o Parecer Nª 25.2025.SIET.1671649.2025.001317 e o subitem 10.7.1. c/c 10.3.5. do Edital, informo que a proposta do licitante POSITIVO TECNOLOGIA S/A, CNPJ Nª. 81.243.735/0001-48 para o Item 3 será desclassificada.
Sistema	14/07/2025 às 15:47:58	Na oportunidade, informo que será convocado novo licitante para envio de proposta para o Item 3, nos termos do subitem 10.11 e 9.1. do Edital. Solicito atenção.
Sistema	15/07/2025 às 13:57:49	Prezados, boa tarde. Informo que amanhã (16/07/2025) retornaremos aos trabalhos deste certame, a partir das 14h (horário Brasília).
Sistema	15/07/2025 às 13:58:06	Aguardo a todos no dia e hora aqui agendados. Obrigado.
Sistema	16/07/2025 às 14:04:53	Prezados Licitantes, boa tarde.
Sistema	16/07/2025 às 14:05:31	Retornamos aos trabalhos deste certame considerando a convocação do licitante HOUSE LTDA, CNPJ 35.689.930/0001-89 para envio de proposta ajustada ao lance para o Item 3.
Sistema	16/07/2025 às 14:07:35	A proposta não foi encaminhada, portanto, a proposta da licitante será recusada em conformidade ao subitem 9.11 c/c subitem 10.3.5 do Edital.

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Responsável	Data/Hora	Mensagem
Sistema	16/07/2025 às 14:08:10	Na sequência, será convocado novo licitante para envio de proposta para o Item 3. Solicito atenção aos interessados.
Sistema	16/07/2025 às 14:11:08	Estando o licitante devidamente convocado, fico no aguardo dos solicitados documentos.
Sistema	16/07/2025 às 18:28:03	Prezados, encerraremos os trabalhos por hoje, retornando amanhã (17/07/2025), a partir das 11h (horário Brasília).
Sistema	16/07/2025 às 18:28:12	Aguardo a todos no dia e hora aqui agendados.
Sistema	17/07/2025 às 11:21:56	Prezados Licitantes, bom dia.
Sistema	17/07/2025 às 11:23:36	Prezados, retornamos aos trabalhos deste certame considerando o não envio de proposta de preços ajustada ao lance, por parte da licitante HOUSE LTDA. para o Item 3.
Sistema	17/07/2025 às 11:39:17	Perdão senhores, retificando, a última licitante convocada e que não enviou proposta para o Item 3 foi a empresa MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01.
Sistema	17/07/2025 às 11:40:12	Assim, informo que a proposta da licitante será recusada e convocado novo licitante para envio de proposta ajustada para o item 3. Solicito atenção ao interessado.
Sistema	17/07/2025 às 11:46:27	Prezados, antes da convocação de novo licitante, passaremos ao procedimento de desempate ficto entre licitantes.
Sistema	17/07/2025 às 11:46:37	Solicito atenção às interessadas. Obrigado!
Sistema	17/07/2025 às 11:59:22	Prezados, encerrado o desempate e mantida a classificação, informo que o novo licitante será convocado para envio de proposta ajustada ao lance para o Item 3. Solicito atenção ao interessado.
Sistema	17/07/2025 às 12:05:01	Estando a licitante devidamente convocado, fico no aguardo dos solicitados documentos.
Sistema	17/07/2025 às 12:16:20	Prezado, acolho a solicitação visto que a solicitação foi realizada na hora do almoço.
Sistema	18/07/2025 às 10:27:40	Prezados Licitantes, informo que tivemos problemas de conexão no sistema no dia de ontem e que retornaremos aos trabalhos deste certame na segunda feira (21/07/2025) , a partir das 10h (horário Brasília).
Sistema	18/07/2025 às 10:27:51	Aguardo a todos no dia e hora aqui agendados.
Sistema	18/07/2025 às 10:28:02	Um bom dia e um excelente fim de semana a todos.
Sistema	21/07/2025 às 10:54:36	Prezados, bom dia.
Sistema	21/07/2025 às 10:55:20	Infelizmente não foi possível reabrir no horário agendado por questões de problemas de conexão, já resolvidos.
Sistema	21/07/2025 às 10:56:02	Assim, informo que às 11h (Horário Brasília), retomaremos os trabalhos. Solicito atenção. Obrigado!
Sistema	21/07/2025 às 11:13:15	Senhores, considerando a solicitação de envio da licitante de apenas 1 (um) documento, informo que será solicitado a título de documento complementar (subitem 10.9) Edital.
Sistema	21/07/2025 às 11:13:24	Solicito atenção à interessada.
Sistema	21/07/2025 às 13:22:53	Prezados, recebidos os documentos, informo os mesmos serão encaminhados para o setor técnico para análise e manifestação.
Sistema	21/07/2025 às 13:23:36	Nesse sentido, informo que encerraremos os trabalhos por hoje, retornando em data posterior devidamente informado através desse chat e em tempo hábil para o acompanhamento de todos os interessados.
Sistema	21/07/2025 às 13:24:07	Agradeço a atenção de todos e finalizo desejando-lhes uma excelente semana.
Sistema	25/07/2025 às 10:24:29	Prezados, informo que retornaremos aos trabalhos deste certame segunda-feira (28/07/2025), a partir das 10h (horário Brasília).
Sistema	25/07/2025 às 10:24:41	Aguardo a todos no dia e hora aqui agendados.
Sistema	25/07/2025 às 10:25:03	Obrigado! Um excelente fim de semana a todos.

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Responsável	Data/Hora	Mensagem
Sistema	28/07/2025 às 10:10:43	Prezados Licitantes, bom dia.
Sistema	28/07/2025 às 10:11:27	Retornamos aos trabalhos deste certame considerando a proposta apresentada pelo licitante TORINO INFORMATICA LTDA., para o Item 3.
Sistema	28/07/2025 às 10:17:44	Senhores, encaminhados os documentos de proposta para o Item 3 para o setor ´técnico para análise, o referido setor manifestou-se, através do Parecer Nª 26.2025.SIET.1679784.2025.001317, da seguinte forma:
Sistema	28/07/2025 às 10:18:41	"3. Conclusão Após análise da documentação apresentada pela licitante TORINO INFORMÁTICA LTDA., referente ao Item 3 - MICROCOMPUTADOR TIPO 3 - "NOTEBOOK COMPACTO DE 14", foram observados alguns pontos inconclusivos, marcados como . Os pontos marcados com , são exigências que não foi possível comprovar sua aderência com a documentação enviada...
Sistema	28/07/2025 às 10:19:20	3.1 Unidade de armazenamento com velocidade de gravação inferior ao mínimo de 1.200 MB/s...
Sistema	28/07/2025 às 10:19:35	O proponente descreveu em sua proposta: "HD SSD 256GB NVME". Ao buscar no caderno de especificações, denominado QuickSpecs, na seção Storage and Drives, encontramos os seguintes discos de 256Gb:
Sistema	28/07/2025 às 10:20:04	a) 256GB PCIe 2280 NVMe Self Encrypted OPAL2 Value Solid State Drive, com Maximum Sequential Write de 900 MB/s ±20%; b) SSD 256GB 2280 PCIe NVMe Value, com Maximum Sequential Write de 900 MB/s ±20%.
Sistema	28/07/2025 às 10:20:20	Pelo exposto, nenhum dos dois discos atendem à velocidade mínima de gravação de 1.200 Mb/s."
Sistema	28/07/2025 às 10:21:16	Senhores, informo que o Parecer Nª 26.2025.SIET.1679784.2025.001317 encontra-se disponível no Portal do MPAM, acessível a todos os interessados, no seguinte endereço:
Sistema	28/07/2025 às 10:21:25	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	28/07/2025 às 10:24:19	Prezados, com fundamento no Parecer Nª 26.2025.SIET.1679784.2025.001317 e no subitem 10.3.2., este Pregoeiro decide Recusar a proposta de preços do licitante TORINO INFORMATICA LTDA., para o Item 3.
Sistema	28/07/2025 às 10:25:09	Na oportunidade, com base no subitem 10.11, será convocado novo licitante para envio de proposta para o item em foco. Solicito atenção aos interessados.
Sistema	28/07/2025 às 11:00:27	Pre
Sistema	28/07/2025 às 12:54:38	Prezados, recebidos os documentos solicitados e encaminhados pelo licitante TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, informo que serão submetidos à análise do setor técnico deste Órgão Ministerial.
Sistema	29/07/2025 às 11:44:52	Senhores, informo que retornaremos aos trabalhos deste certame amanhã (30/07/2025), a ´partir das 10h (horário Brasília).
Sistema	29/07/2025 às 11:45:07	Aguardo a todos no dia e hora aqui agendados. Obrigado.
Sistema	30/07/2025 às 10:09:37	Prezados Licitantes, bom dia.
Sistema	30/07/2025 às 10:28:07	Senhores, retornamos aos trabalhos deste certame considerando a proposta apresentada pelo licitante TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 para o Item 3.
Sistema	30/07/2025 às 11:05:54	Prezados, encaminhados os novos documentos aos setor técnico para análise, o referido setor manifestou-se através do PARECER Nª 92.2025.DTIC.1683372.2025.001317.
Sistema	30/07/2025 às 11:06:32	Informo que o Parecer Nª 92.2025.DTIC.1683372.2025.001317 encontra-se disponível no Portal do MPAM, no seguinte endereço:
Sistema	30/07/2025 às 11:06:54	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis

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Responsável	Data/Hora	Mensagem
Sistema	30/07/2025 às 11:09:18	Prezados, novamente foram apontadas questões relevantes para tratar com o licitante ora classificado. Assim, trataremos novamente com o licitante. Solicito atenção ao interessado.
Sistema	30/07/2025 às 13:17:11	Prezados, recebidos os documentos, os mesmos serão novamente convocados para análise do setor técnico competente.
Sistema	30/07/2025 às 15:12:27	Prezados, informo que encerraremos os trabalhos por hoje, retornando amanhã (31/07/2025), a partir das 10h (horário Brasília).
Sistema	30/07/2025 às 15:12:40	Aguardo a todos no dia e hora aqui agendados.
Sistema	30/07/2025 às 15:12:53	Obrigado e uma excelente tarde a todos.
Sistema	31/07/2025 às 10:38:56	Prezados Licitantes, bom dia.
Sistema	31/07/2025 às 10:39:28	Em razão de atividades internas deste Órgão, informo que não será possível reabrir a sessão pela manhã.
Sistema	31/07/2025 às 10:40:31	Informo que reabriremos a sessão às 14h (horário Brasília).
Sistema	31/07/2025 às 10:40:47	Aguardo a todos na hora agendada. Obrigado!
Sistema	31/07/2025 às 15:55:46	Senhores, informo que retornaremos aos trabalhos deste certame amanhã (01/08/2025), a partir das 11h (horário Brasília).
Sistema	31/07/2025 às 15:55:57	Aguardo a todos no dia e hora aqui agendados.
Sistema	31/07/2025 às 15:56:07	Obrigado e uma excelente tarde a todos.
Sistema	01/08/2025 às 11:01:37	Prezados, bom dia.
Sistema	01/08/2025 às 11:02:29	Retornamos aos trabalhos deste certame, considerando a proposta de preços apresentada pelo licitante TORINO INFORMATICA LTDA. para o Item 3.
Sistema	01/08/2025 às 11:04:15	Senhores, apresentados e recebidos os documentos em sede de diligência e submetidos à análise do setor técnico deste Órgão.
Sistema	01/08/2025 às 11:06:33	O referido setor manifestou-se através do Parecer Nª 27.2025.SIET.1686055.2025.001317, informando o seguinte:
Sistema	01/08/2025 às 11:07:16	"3. Conclusão: Após análise da documentação apresentada pela licitante TORINO INFORMÁTICA LTDA., referente ao Item 3 – MICROCOMPUTADOR TIPO 3 – “NOTEBOOK COMPACTO DE 14”, o conjunto proposto é compatível com as especificações do Edital. Assim, equipe técnica OPINA pela aceitabilidade do produto ofertado."
Sistema	01/08/2025 às 11:09:47	Informo que o referido Parecer Nª 27.2025.SIET.1686055.2025.001317, encontra-se disponível no Portal do MPAM, no seguinte endereço:
Sistema	01/08/2025 às 11:10:55	https://www.mpam.mp.br/servicos/licitacoes/licitacoes-em-andamento/47-licitacoes/pregao-eletronico-em-andamento/18376-pe-94010-2025-cpl-mp-pgj-srp-estacoes-de-trabalho-e-computadores-portateis
Sistema	01/08/2025 às 11:14:46	Nesse sentido, com fundamento no Parecer Nª 27.2025.SIET. e no atendimento aos dispositivos referentes à proposta de preços no Edital do certame, este Pregoeiro decide pela Aceitação da oferta do licitante TORINO INFORMÁTICA LTDA., para o Item 3.
Sistema	01/08/2025 às 11:56:24	Prezados, informo que em breve o licitante ora classificado para o Item 3 será convocado para envio de documentos de Habilitação.
Sistema	01/08/2025 às 11:56:36	Solicito atenção ao interessado.
Sistema	01/08/2025 às 12:24:25	Prezados, informo que em breve o licitante ora classificado para o Item 3 será convocado para envio de documentos de Habilitação.
Sistema	01/08/2025 às 16:15:07	Prezados, recebidos os documentos, informo que encerraremos os trabalhos por hoje, retornando na terça-feira (05/08/2025), a partir das 10h (horário Brasília).
Sistema	01/08/2025 às 16:15:37	Aguardo a todos no dia e hora aqui agendados.

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Responsável	Data/Hora	Mensagem
Sistema	01/08/2025 às 16:16:08	Agradeço a atenção dispensada. Finalizo desejando uma boa tarde e um excelente fim de semana a todos.
Sistema	05/08/2025 às 10:08:07	Prezados Licitantes, bom dia.
Sistema	05/08/2025 às 10:11:20	Retornamos aos trabalhos deste certame, considerando o julgamento dos documentos de habilitação do licitante TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15.
Sistema	05/08/2025 às 11:27:39	Prezados licitantes, em análise aos documentos de habilitação do licitante ora classificado, verificou-se o atendimento à exigências estabelecidas no Item 11 do Instrumento Convocatório.
Sistema	05/08/2025 às 11:28:07	Nesse sentido, este Pregoeiro decide pela Habilitação do licitante TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15.
Sistema	05/08/2025 às 11:37:05	Senhores. em breve, estaremos habilitando a licitante vencedora do Item 3 no próprio sistema. Solicito atenção aos interessados.

Eventos da compra

Data/Hora	Descrição
30/06/2025 às 10:00:02	Abertura da sessão pública
30/06/2025 às 14:06:48	Início da etapa de julgamento de propostas

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Item 3 - Notebook

Notebook Tela: Até 14POL, Interatividade Da Tela: Sem Interatividade, Memória Ram: Superior A 8GB, Núcleos Por Processador: 4 A 8, Armazenamento Hdd: Sem Disco HddGB, Armazenamento Ssd: 110 A 300, Bateria: Até 4 Células, Alimentação: Bivolt Automática, Sistema Operacional: Proprietário, Garantia On Site: 12MESES

Quantidade:	300	Valor estimado:	R$ 12.053,1900 (unitário)
Unidade de fornecimento:	Unidade		R$ 3.615.957,0000 (total)
Intervalo mínimo entre lances:	R$ 10,0000	Situação:	Aberto para recursos
Critério de julgamento:	Menor Preço		

Aceito e Habilitado por CPF ***.231.***-*9 - MAURICIO ARAUJO MEDEIROS para TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, melhor lance: R$ 8.250,0000 (unitário) / R$ 2.475.000,0000 (total)

Propostas do Item 3

Benefício Me/Epp: Conforme Art. 3ª da Lei Complementar nª 123, de 14 de dezembro de 2006
Programa de integridade: Conforme termos previsos na Lei nª 14.133/2021 e no Decreto nª 12.304/2024

Fornecedor	Valor ofertado	Situação
42.816.024/0001-63 - 42.816.024 LEONARDO CATIVO SOUSA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: AM	R$ 10.000,0000 (unitário) R$ 3.000.000,0000 (total)	-

Marca/Fabricante:	Conf TR				
Modelo/versão:	Conf TR				
Valor proposta:	R$ 10.000,0000 (unitário) R$ 3.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	300

51.750.663/0001-64 - 51.750.663 THIERREZ MATHEUS ALVES SALES Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: DF	R$ 14.800,0000 (unitário) R$ 4.440.000,0000 (total)	-

Marca/Fabricante:	Notebook				
Modelo/versão:	Notebook				
Valor proposta:	R$ 50.000,0000 (unitário) R$ 15.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	300

39.577.541/0001-12 - A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 10.000,0000 (unitário) R$ 3.000.000,0000 (total)	-

Marca/Fabricante:	Dell				
Modelo/versão:	Dell				
Valor proposta:	R$ 10.000,0000 (unitário) R$ 3.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	300

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Fornecedor	Valor ofertado	Situação
01.319.640/0001-21 - AJL INDUSTRIA E COMERCIO LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: AM	R$ 17.530,0000 (unitário) R$ 5.259.000,0000 (total)	-

Marca/Fabricante: LENOVO
Modelo/versão: THINKPAD T14 GEN 5
Valor proposta: R$ 25.000,0000 (unitário) R$ 7.500.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

52.593.051/0001-78 - CENTERDATA COMERCIO DE PRODUTOS DE INFORMATICA E SERVICOS LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 25.000,0000 (unitário) R$ 7.500.000,0000 (total)	-

Marca/Fabricante: Lenovo
Modelo/versão: Lenovo
Valor proposta: R$ 25.000,0000 (unitário) R$ 7.500.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

36.770.097/0001-69 - CIB EMPREENDIMENTOS IMOBILIARIOS LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: MG	R$ 102.360.000,0000 (unitário) R$ 30.708.000.000,0000 (total)	-

Marca/Fabricante: Notebook Tela: Até 14POL, Interatividade Da Tela:
Modelo/versão: Notebook Tela: Até 14POL, Interatividade Da Tela:
Valor proposta: R$ 102.360.000,0000 (unitário) R$ 30.708.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

05.778.325/0005-47 - E.R. SOLUCOES INFORMATICA LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: ES	R$ 8.580,0000 (unitário) R$ 2.574.000,0000 (total)	-

Marca/Fabricante: LENOVO
Modelo/versão: E14 INTEL GEN 6 + ACESSORIOS
Valor proposta: R$ 12.000,0000 (unitário) R$ 3.600.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

53.571.459/0001-01 - ELLOELLA DISTRIBUIDORA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: PE	R$ 15.833,1100 (unitário) R$ 4.749.933,0000 (total)	-

Marca/Fabricante: LENOVO
Modelo/versão: THIKPAD E14
Valor proposta: R$ 17.592,3400 (unitário) R$ 5.277.702,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

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Fornecedor	Valor ofertado	Situação
35.689.930/0001-89 - HOUSE LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: AM	R$ 6.000,0000 (unitário) R$ 1.800.000,0000 (total)	Proposta desclassificada

Marca/Fabricante: Dell
Modelo/versão: Conforme TR
Valor proposta: R$ 6.000,0000 (unitário) R$ 1.800.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

36.306.823/0001-97 - LICITIN TECNOLOGIA E INFORMATICA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 20.000,0000 (unitário) R$ 6.000.000,0000 (total)	-

Marca/Fabricante: DELL
Modelo/versão: LATITUDE
Valor proposta: R$ 20.000,0000 (unitário) R$ 6.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

20.380.331/0001-01 - MR COMERCIO DE PECAS E ACESSORIOS LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: AM	R$ 6.250,0000 (unitário) R$ 1.875.000,0000 (total)	Proposta desclassificada

Marca/Fabricante: NOT IDEAPAD 1 I3
Modelo/versão: 1 I3
Valor proposta: R$ 6.250,0000 (unitário) R$ 1.875.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

81.243.735/0009-03 - POSITIVO TECNOLOGIA S.A. Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: BA	R$ 5.700,0000 (unitário) R$ 1.710.000,0000 (total)	Proposta desclassificada

Marca/Fabricante: Positivo / Positivo Tecnologia S.A.
Modelo/versão: Positivo Master N8450
Valor proposta: R$ 7.000,0000 (unitário) R$ 2.100.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

32.872.401/0001-28 - PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 8.290,0000 (unitário) R$ 2.487.000,0000 (total)	-

Marca/Fabricante: Lenovo
Modelo/versão: ThinkPad T 14
Valor proposta: R$ 10.099,0000 (unitário) R$ 3.029.700,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

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Fornecedor	Valor ofertado	Situação
11.027.350/0003-20 - PROXYS COMERCIO ELETRONICO LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: SC	R$ 11.716,7400 (unitário) R$ 3.515.022,0000 (total)	-

Marca/Fabricante:	LENOVO				
Modelo/versão:	Notebook Lenovo T14 G5 Intel Core Ultra 5 135u Vpr				
Valor proposta:	R$ 14.227,4700 (unitário) R$ 4.268.241,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	300

47.172.975/0001-60 - RENATO PALLADINO DE FREITAS 41131128869 Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: SP	R$ 9.485,0000 (unitário) R$ 2.845.500,0000 (total)	-

Marca/Fabricante:	Lenovo				
Modelo/versão:	ThinkPad				
Valor proposta:	R$ 13.500,0000 (unitário) R$ 4.050.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	300

30.948.812/0001-24 - RL INFORMATICA LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: PE	R$ 15.390,0000 (unitário) R$ 4.617.000,0000 (total)	-

Marca/Fabricante:	Lenovo				
Modelo/versão:	T14 Gen 5 + Acessórios				
Valor proposta:	R$ 20.000,0000 (unitário) R$ 6.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	300

49.853.502/0001-54 - SNT SOLUCOES TECNOLOGICAS LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 9.500,0000 (unitário) R$ 2.850.000,0000 (total)	-

Marca/Fabricante:	DELL				
Modelo/versão:	LATITUDE 5450				
Valor proposta:	R$ 9.500,0000 (unitário) R$ 2.850.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	300

49.264.057/0001-97 - T. D. A. S. Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 9.489,0000 (unitário) R$ 2.846.700,0000 (total)	-

Marca/Fabricante:	Notebook				
Modelo/versão:	pc				
Valor proposta:	R$ 9.489,0000 (unitário) R$ 2.846.700,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	300

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Fornecedor	Valor ofertado	Situação
03.619.767/0005-15 - TORINO INFORMATICA LTDA.. Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: ES	R$ 8.250,0000 (unitário) R$ 2.475.000,0000 (total)	Fornecedor habilitado
Marca/Fabricante: HP Modelo/versão: Notebook HP Valor proposta: R$ 16.000,0000 (unitário) R$ 4.800.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300		
28.880.531/0002-16 - TR TECNOLOGIA E COMERCIO LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: ES	R$ 19.880,0000 (unitário) R$ 5.964.000,0000 (total)	-
Marca/Fabricante: DELL LATITUDE 5450 16GB 256GB WIN11P CORE 5 Modelo/versão: DELL LATITUDE 5450 16GB 256GB WIN11P CORE 5 Valor proposta: R$ 22.000,0000 (unitário) R$ 6.600.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300		
41.680.761/0001-19 - TREER TECNOLOGY LTDA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: MG	R$ 14.000,0000 (unitário) R$ 4.200.000,0000 (total)	-
Marca/Fabricante: Lenovo Modelo/versão: ThinkPAD Valor proposta: R$ 14.000,0000 (unitário) R$ 4.200.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300		

Lances do Item 3

Data/hora	Participante	Lance
30/06/2025 às 12:14:16	30.948.812/0001-24	R$ 15.990,0000
30/06/2025 às 12:14:17	11.027.350/0003-20	R$ 11.716,7400
30/06/2025 às 12:14:18	53.571.459/0001-01	R$ 15.833,1100
30/06/2025 às 12:14:22	30.948.812/0001-24	R$ 15.823,1100
30/06/2025 às 12:15:49	28.880.531/0002-16	R$ 19.880,0000
30/06/2025 às 12:16:13	01.319.640/0001-21	R$ 18.290,0000
30/06/2025 às 12:17:10	01.319.640/0001-21	R$ 17.530,0000
30/06/2025 às 12:19:52	05.778.325/0005-47	R$ 9.470,0000
30/06/2025 às 12:20:04	03.619.767/0005-15	R$ 11.900,0000
30/06/2025 às 12:21:06	32.872.401/0001-28	R$ 9.479,0000
30/06/2025 às 12:21:58	32.872.401/0001-28	R$ 9.459,0000
30/06/2025 às 12:22:27	05.778.325/0005-47	R$ 9.400,0000
30/06/2025 às 12:23:32	81.243.735/0009-03	R$ 6.990,0000
30/06/2025 às 12:24:35	81.243.735/0009-03	R$ 6.980,0000

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Data/hora	Participante	Lance
30/06/2025 às 12:24:54	03.619.767/0005-15	R$ 10.000,0000
30/06/2025 às 12:25:32	81.243.735/0009-03	R$ 6.900,0000
30/06/2025 às 12:25:55	03.619.767/0005-15	R$ 9.400,0000
30/06/2025 às 12:26:21	81.243.735/0009-03	R$ 6.890,0000
30/06/2025 às 12:26:21	03.619.767/0005-15	R$ 9.390,0000
30/06/2025 às 12:26:46	05.778.325/0005-47	R$ 9.300,0000
30/06/2025 às 12:27:44	81.243.735/0009-03	R$ 5.990,0000
30/06/2025 às 12:28:04	03.619.767/0005-15	R$ 9.280,0000
30/06/2025 às 12:28:15	05.778.325/0005-47	R$ 9.200,0000
30/06/2025 às 12:28:51	03.619.767/0005-15	R$ 9.180,0000
30/06/2025 às 12:29:30	05.778.325/0005-47	R$ 9.100,0000
30/06/2025 às 12:30:40	03.619.767/0005-15	R$ 9.080,0000
30/06/2025 às 12:30:59	05.778.325/0005-47	R$ 9.000,0000
30/06/2025 às 12:31:22	03.619.767/0005-15	R$ 8.980,0000
30/06/2025 às 12:31:33	32.872.401/0001-28	R$ 9.090,0000
30/06/2025 às 12:31:39	51.750.663/0001-64	R$ 15.800,0000
30/06/2025 às 12:31:42	30.948.812/0001-24	R$ 15.790,0000
30/06/2025 às 12:32:02	05.778.325/0005-47	R$ 8.900,0000
30/06/2025 às 12:32:18	03.619.767/0005-15	R$ 8.790,0000
30/06/2025 às 12:32:47	32.872.401/0001-28	R$ 8.890,0000
30/06/2025 às 12:32:51	05.778.325/0005-47	R$ 8.750,0000
30/06/2025 às 12:33:29	03.619.767/0005-15	R$ 8.730,0000
30/06/2025 às 12:33:43	05.778.325/0005-47	R$ 8.700,0000
30/06/2025 às 12:33:54	51.750.663/0001-64	R$ 15.400,0000
30/06/2025 às 12:33:54	30.948.812/0001-24	R$ 15.390,0000
30/06/2025 às 12:34:30	51.750.663/0001-64	R$ 14.800,0000
30/06/2025 às 12:35:01	32.872.401/0001-28	R$ 8.790,0000
30/06/2025 às 12:36:19	03.619.767/0005-15	R$ 8.690,0000
30/06/2025 às 12:36:33	05.778.325/0005-47	R$ 8.650,0000
30/06/2025 às 12:36:53	03.619.767/0005-15	R$ 8.620,0000
30/06/2025 às 12:37:07	05.778.325/0005-47	R$ 8.600,0000
30/06/2025 às 12:37:32	03.619.767/0005-15	R$ 8.590,0000
30/06/2025 às 12:38:15	05.778.325/0005-47	R$ 8.580,0000

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Data/hora	Participante	Lance
30/06/2025 às 12:39:14	03.619.767/0005-15	R$ 8.560,0000
30/06/2025 às 12:41:07	32.872.401/0001-28	R$ 8.780,0000
30/06/2025 às 12:42:45	32.872.401/0001-28	R$ 8.770,0000
30/06/2025 às 12:44:40	32.872.401/0001-28	R$ 8.550,0000
30/06/2025 às 12:45:01	03.619.767/0005-15	R$ 8.540,0000
30/06/2025 às 12:45:12	32.872.401/0001-28	R$ 8.530,0000
30/06/2025 às 12:46:26	03.619.767/0005-15	R$ 8.520,0000
30/06/2025 às 12:47:52	47.172.975/0001-60	R$ 9.485,0000
30/06/2025 às 12:49:48	32.872.401/0001-28	R$ 8.510,0000
30/06/2025 às 12:50:17	03.619.767/0005-15	R$ 8.500,0000
30/06/2025 às 12:50:19	32.872.401/0001-28	R$ 8.490,0000
30/06/2025 às 12:50:34	03.619.767/0005-15	R$ 8.470,0000
30/06/2025 às 12:51:50	32.872.401/0001-28	R$ 8.460,0000
30/06/2025 às 12:52:39	03.619.767/0005-15	R$ 8.450,0000
30/06/2025 às 12:52:56	32.872.401/0001-28	R$ 8.440,0000
30/06/2025 às 12:53:29	03.619.767/0005-15	R$ 8.430,0000
30/06/2025 às 12:53:36	32.872.401/0001-28	R$ 8.420,0000
30/06/2025 às 12:53:51	03.619.767/0005-15	R$ 8.400,0000
30/06/2025 às 12:55:50	32.872.401/0001-28	R$ 8.410,0000
30/06/2025 às 12:57:39	81.243.735/0009-03	R$ 5.700,0000
30/06/2025 às 12:58:51	32.872.401/0001-28	R$ 8.390,0000
30/06/2025 às 12:59:02	03.619.767/0005-15	R$ 8.380,0000
30/06/2025 às 12:59:16	32.872.401/0001-28	R$ 8.370,0000
30/06/2025 às 12:59:48	03.619.767/0005-15	R$ 8.350,0000
30/06/2025 às 12:59:58	32.872.401/0001-28	R$ 8.330,0000
30/06/2025 às 13:00:14	03.619.767/0005-15	R$ 8.310,0000
30/06/2025 às 13:01:20	32.872.401/0001-28	R$ 8.290,0000
30/06/2025 às 13:01:55	03.619.767/0005-15	R$ 8.250,0000

Mensagens do chat do Item 3

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 12:04:14	A abertura do item 3 para lances está agendada para daqui a 10 minutos. Mantenham-se conectados.
Sistema	30/06/2025 às 12:14:14	O item 3 foi aberto. Solicitamos o envio de lances.
Sistema	30/06/2025 às 13:03:56	O item 3 está aguardando decisão de reinício ou encerramento da etapa aberta pelo comprador.

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Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 13:13:30	O item 3 está encerrado.
Sistema para o participante 81.243.735/0009-03	01/07/2025 às 10:41:11	Sr. Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 12:45:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Pelo participante 81.243.735/0009-03	01/07/2025 às 11:25:56	O item 3 teve a convocação para envio de anexos encerrada às 11:25:56 de 01/07/2025. 2 anexos foram enviados pelo fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03.
Sistema para o participante 81.243.735/0009-03	08/07/2025 às 14:59:20	Sr. Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 17:04:00 do dia 08/07/2025. Justificativa: Solicito que apresente nos documentos de proposta enviados para o Item 3, o pleno atendimento aos requisitos técnicos exigidos no Termo de Referência Nª 2.2025.DTIC.1525128.2025.001317, Anexo I ao Edital do certame..
Pelo participante 81.243.735/0009-03	08/07/2025 às 15:12:45	Prezado Sr. Pregoeiro, boa tarde! Em razão do tempo necessário para a elaboração de um documento ponto a ponto, solicitamos, gentilmente, a prorrogação do prazo por igual período, totalizando 4 (quatro) horas. Considerando o horário comercial, solicitamos que o novo prazo seja fixado até o dia 09/07/2025, às 9h.
Sistema para o participante 81.243.735/0009-03	08/07/2025 às 15:53:39	Prezada, boa tarde.
Sistema para o participante 81.243.735/0009-03	08/07/2025 às 15:59:41	A comprovação do atendimento da oferta aos requisitos técnicos e formais do Edital é papel do licitante. Tal procedimento, em termos de boas práticas, deve ser realizado desde a apresentação da proposta ajustada aos lances. Ainda, a juntada dos documentos é realizada pela própria proponente, com documentos considerados suficientes para uma análise segura e definitiva do equipamento ofertado.
Sistema para o participante 81.243.735/0009-03	08/07/2025 às 16:00:24	Assim, entende-se ser ela a detentora de todo conhecimento necessário para o adequado esclarecimento sobre sua proposta.
Sistema para o participante 81.243.735/0009-03	08/07/2025 às 16:04:02	Ainda, a solicitação para apresentação no prazo de 2 (duas) horas - mesmo prazo de envio da proposta, não nos parece desarrazoado. Sendo, no entendimento do Instrumento Convocatório, adequado às solicitações realizadas no certame, conforme prevê o subitem 10.9 do Edital.
Sistema para o participante 81.243.735/0009-03	08/07/2025 às 16:04:40	Nesse sentido, indefiro a solicitação de prorrogação do prazo pelos motivos acimas expostos.
Pelo participante 81.243.735/0009-03	08/07/2025 às 16:50:02	O item 3 teve a convocação para envio de anexos encerrada às 16:50:02 de 08/07/2025. 1 anexo foi enviado pelo fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03.
Sistema para o participante 81.243.735/0009-03	11/07/2025 às 11:25:21	Sr. Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 13:28:00 do dia 11/07/2025. Justificativa: Solicito envio de documentos que comprovem o atendimento da oferta aos pontos levantados no Parecer Nª 22.2025.SIET.1668772.2025.001317..
Pelo participante 81.243.735/0009-03	11/07/2025 às 11:49:50	Prezado Sr. Pregoeiro, bom dia! Respeitosamente, solicitamos a Vossa Senhoria prazo para resposta à diligência até às 15h30min de hoje. Devido à quantidade de diligências e com o objetivo de fornecer uma resposta completa e precisa, necessitamos de um prazo adicional para realizar as consultas e levantamentos necessários. Agradecemos pela compreensão e aguardamos sua consideração.
Sistema para o participante 81.243.735/0009-03	11/07/2025 às 12:04:22	Prezado Licitante, bom dia.
Sistema para o participante 81.243.735/0009-03	11/07/2025 às 12:11:16	Considerando a presente solicitação e, nos termos do subitem 10.7.1. c/c subitem 10.9 do Edital, defiro a prorrogação do prazo de convocação.
Sistema para o participante 81.243.735/0009-03	11/07/2025 às 12:11:56	Solicito de V. Sa. que encerre o prazo de convocação para ajuste na convocação.

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Responsável	Data/Hora	Mensagem
Pelo participante 81.243.735/0009-03	11/07/2025 às 12:13:57	O item 3 teve a convocação para envio de anexos encerrada às 12:13:57 de 11/07/2025. Nenhum anexo foi enviado pelo fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03.
Pelo participante 81.243.735/0009-03	11/07/2025 às 12:15:14	Prezado Sr. Pregoeiro, muito obrigada!
Pelo participante 81.243.735/0009-03	11/07/2025 às 12:16:06	A convocação foi encerrada, conforme solicitação.
Sistema para o participante 81.243.735/0009-03	11/07/2025 às 12:17:35	Sr. Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 15:30:00 do dia 11/07/2025. Justificativa: Prorrogado o prazo no tempo requerido. Solicito envio de documentos que comprovem o atendimento da oferta aos pontos levantados no Parecer Nª 22.2025.SIET.1668772.2025.001317...
Pelo participante 81.243.735/0009-03	11/07/2025 às 15:23:57	O item 3 teve a convocação para envio de anexos encerrada às 15:23:57 de 11/07/2025. 1 anexo foi enviado pelo fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03.
Sistema para o participante 35.689.930/0001-89	14/07/2025 às 15:52:39	Sr. Fornecedor HOUSE LTDA, CNPJ 35.689.930/0001-89, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 17:55:00 do dia 14/07/2025. Justificativa: Solicito o envio de proposta de preços ajustada ao lance e a documentação técnica do equipamento ofertado, conforme letra "k" do subitem 9.2 do Edital..
Sistema para o participante 35.689.930/0001-89	14/07/2025 às 17:55:00	O item 3 teve a convocação para envio de anexos encerrada às 17:55:00 de 14/07/2025. Nenhum anexo foi enviado pelo fornecedor HOUSE LTDA, CNPJ 35.689.930/0001-89.
Sistema para o participante 20.380.331/0001-01	16/07/2025 às 14:10:42	Sr. Fornecedor MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 16:15:00 do dia 16/07/2025. Justificativa: Solicito envio de proposta de preços ajustada ao lance, acompanhada dos documentos técnicos do item ofertado, conforme letra "k" do subitem 9.2. do Edital..
Sistema para o participante 20.380.331/0001-01	16/07/2025 às 16:15:00	O item 3 teve a convocação para envio de anexos encerrada às 16:15:00 de 16/07/2025. Nenhum anexo foi enviado pelo fornecedor MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01.
Sistema	17/07/2025 às 11:46:44	O item 3 terá desempate Me/Epp do lance. Mantenham-se conectados.
Sistema para o participante 32.872.401/0001-28	17/07/2025 às 11:46:44	Sr. Fornecedor PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA, CPF/CNPJ 32.872.401/0001-28, em cumprimento à Lei Complementar 123 de 14/12/2006, você poderá enviar ou desistir de apresentar lance final e único para o item 3 até às 11:51:44 do dia 17/07/2025. Acesse a Sala de Disputa.
Sistema	17/07/2025 às 11:51:45	O item 3 teve o 1ª desempate Me/Epp encerrado às 11:51:44 de 17/07/2025. O tempo expirou e o lance não foi enviado pelo fornecedor PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA, CPF/CNPJ 32.872.401/0001-28.
Sistema	17/07/2025 às 11:51:45	O item 3 está encerrado.
Sistema para o participante 03.619.767/0005-15	17/07/2025 às 12:00:31	Sr. Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 14:05:00 do dia 17/07/2025. Justificativa: Solicito envio de proposta de preços ajustada ao lance, acompanhada dos documentos técnicos do item ofertado, conforme letra "k" do subitem 9.2. do Edital...
Pelo participante 03.619.767/0005-15	17/07/2025 às 12:08:04	Sr. Pregoeiro, por favor, poderia prorrogar o envio dos documentos devido ao horario de almoço?
Sistema para o participante 03.619.767/0005-15	17/07/2025 às 12:17:06	Solicito seja encerrado o prazo para realizar a convocação a partir das 13h (horário Brasília).
Sistema para o participante 03.619.767/0005-15	17/07/2025 às 14:05:00	O item 3 teve a convocação para envio de anexos encerrada às 14:05:00 de 17/07/2025. Nenhum anexo foi enviado pelo fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15.
Sistema para o participante 03.619.767/0005-15	17/07/2025 às 14:25:48	Prezados, boa tarde. Considerando o acolhimento da solicitação, informo que V. Sa. será novamente convocada para envio de proposta. Solicito atenção.

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Responsável	Data/Hora	Mensagem
Sistema para o participante 03.619.767/0005-15	17/07/2025 às 14:26:11	Sr. Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 16:28:00 do dia 17/07/2025. Justificativa: Solicito envio de proposta de preços ajustada ao lance, acompanhada dos documentos técnicos do item ofertado, conforme letra "k" do subitem 9.2. do Edital....
Pelo participante 03.619.767/0005-15	17/07/2025 às 15:27:53	O item 3 teve a convocação para envio de anexos encerrada às 15:27:53 de 17/07/2025. 5 anexos foram enviados pelo fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15.
Pelo participante 03.619.767/0005-15	17/07/2025 às 15:31:05	senhor pregoeiro, por favor, como estamos dentro do tempo ainda, por favor, reabrir o envio de anexo, somente para incluirmos 1 documento
Pelo participante 03.619.767/0005-15	17/07/2025 às 15:31:14	é só o tempo de incluir o documento
Pelo participante 03.619.767/0005-15	17/07/2025 às 15:31:26	pois encerramos o envio erroneamente
Sistema para o participante 03.619.767/0005-15	21/07/2025 às 11:14:31	Sr. Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 13:16:00 do dia 21/07/2025. Justificativa: Solicito envio de documentos referente ao item 3 ofertado..
Sistema para o participante 03.619.767/0005-15	21/07/2025 às 13:16:00	O item 3 teve a convocação para envio de anexos encerrada às 13:16:00 de 21/07/2025. 1 anexo foi enviado pelo fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15.
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:20:26	Bom dia!, podemos responder as duvidas, via diligencia, pois temos comprovação de antendimento.
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:24:38	solicitamos o envio do documento que comprova a velocidad de esqrita do hd da hp
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:24:50	que comprova a velocidade solicitada
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:25:05	informação essa que pode ser dirimida via diligencia
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:25:09	é um documento interno da hp
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:25:33	Sr. pregoeiro, está acompanhando as mensagens?
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:28:02	Sequential Write (128/256GB) Up to 1,200 MB/s
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:28:33	diante disso, solicitamos a diligencia para a comprovação do item
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:35:05	documento enviado para o email licitacao@mpam.mp.br
Sistema para o participante 03.619.767/0005-15	28/07/2025 às 10:42:32	Prezado Licitante, diga o que vossa senhora pretende. O que V. Sa. quer dizer?
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:44:12	Quero dizer que o equipamento atende ao solicitado, e temos a comprovação do SSD, e sobre a garantia, se atentar para o documento da HP apresentado, onde a HP confirma que a Torino é Assistencia tecnica autorizada da HP, isto é, o equipamento possuirá a garantia solicitada.
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:45:35	Solicitamos que antes da desclassificação, que o MPAM faça a diligencia para sanar dúvidas dos pontos apresentados.
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:48:56	25.3. É facultada ao pregoeiro ou autoridade superior, em qualquer fase da licitação, a promoção de diligência destinada a esclarecer ou complementar a instrução do processo.
Sistema para o participante 03.619.767/0005-15	28/07/2025 às 11:02:41	Prezada, nos termos do subitem 10.9 do Edital, vou lhe conceder o prazo estabelecido para saneamento do que foi informado no Parecer 26.2025.SIET. Solicito atenção.

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Responsável	Data/Hora	Mensagem
Sistema para o participante 03.619.767/0005-15	28/07/2025 às 11:07:34	Sr. Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 13:10:00 do dia 28/07/2025. Justificativa: Solicito documentos comprobatórios do atendimento aos itens apontados no Parecer Nª 26.2025.SIET.1679784.2025.001317..
Pelo participante 03.619.767/0005-15	28/07/2025 às 11:08:04	ok, ciente, obrigado.
Pelo participante 03.619.767/0005-15	28/07/2025 às 12:07:02	O item 3 teve a convocação para envio de anexos encerrada às 12:07:02 de 28/07/2025. 3 anexos foram enviados pelo fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15.
Sistema para o participante 03.619.767/0005-15	30/07/2025 às 11:09:40	Prezado, bom dia.
Pelo participante 03.619.767/0005-15	30/07/2025 às 11:10:10	bom dia
Pelo participante 03.619.767/0005-15	30/07/2025 às 11:10:34	podemos esclarecer sem problemas os pontos apresentados
Sistema para o participante 03.619.767/0005-15	30/07/2025 às 11:15:45	No PARECER Nª 92.2025.DTIC.1683372.2025.001317, No subitem 5 - UNIDADE DE ARMAZENAMENTO, do quadro do Item 2.2, solicita-se esclarecimentos, bem como no subitem 18 do mesmo quadro.
Sistema para o participante 03.619.767/0005-15	30/07/2025 às 11:18:28	Prezado, o subitem 10.
Sistema para o participante 03.619.767/0005-15	30/07/2025 às 11:20:20	Prezado, com fundamento no subitem 10.7.1. e 10.9 do Edital, V. Sa. será convocada para envio de documento comprobatório do atendimento dos pontos levantados no parecer supramencionado.
Sistema para o participante 03.619.767/0005-15	30/07/2025 às 11:20:28	Solicito atenção.
Sistema para o participante 03.619.767/0005-15	30/07/2025 às 11:21:18	Sr. Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 13:25:00 do dia 30/07/2025. Justificativa: Solicito envio de documentos conforme solicitado através do PARECER Nª 92.2025.DTIC.1683372.2025.001317. .
Pelo participante 03.619.767/0005-15	30/07/2025 às 11:23:59	ok
Pelo participante 03.619.767/0005-15	30/07/2025 às 12:25:19	O item 3 teve a convocação para envio de anexos encerrada às 12:25:19 de 30/07/2025. 3 anexos foram enviados pelo fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15.
Sistema	01/08/2025 às 11:16:53	O item 3 está na etapa de julgamento de proposta no período de intenção de recursos, com acréscimo de 10 minutos a partir de agora - até 01/08/2025 11:26:53.
Sistema para o participante 03.619.767/0005-15	01/08/2025 às 12:25:51	Sr. Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 14:28:00 do dia 01/08/2025. Justificativa: Solicito o envio dos documentos de habilitação, conforme subitem 11 do Instrumento Convocatório..
Pelo participante 03.619.767/0005-15	01/08/2025 às 14:23:15	O item 3 teve a convocação para envio de anexos encerrada às 14:23:15 de 01/08/2025. 1 anexo foi enviado pelo fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15.
Sistema	05/08/2025 às 11:38:17	O item 3 está na etapa de habilitação de fornecedores no período de intenção de recursos, com acréscimo de 10 minutos a partir de agora - até 05/08/2025 11:48:17.
Sistema	05/08/2025 às 12:21:44	A fase de recurso do item 3 está aberta até 08/08/2025.

Eventos do Item 3

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Data/Hora	Descrição
30/06/2025 às 12:14:14	Item aberto para lances.
30/06/2025 às 13:03:56	Item aguardando decisão sobre reinício ou encerramento da etapa aberta.
30/06/2025 às 13:13:30	Item com etapa aberta encerrada.
30/06/2025 às 13:13:30	Item encerrado para lances.
01/07/2025 às 10:41:11	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 convocado para o envio de anexo. Prazo para encerrar o envio: 12:45:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
01/07/2025 às 11:25:56	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 finalizou o envio de anexo.
08/07/2025 às 14:59:20	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 convocado para o envio de anexo. Prazo para encerrar o envio: 17:04:00 do dia 08/07/2025. Justificativa: Solicito que apresente nos documentos de proposta enviados para o Item 3, o pleno atendimento aos requisitos técnicos exigidos no Termo de Referência Nª 2.2025.DTIC.1525128.2025.001317, Anexo I ao Edital do certame..
08/07/2025 às 16:50:02	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 finalizou o envio de anexo.
11/07/2025 às 11:25:21	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 convocado para o envio de anexo. Prazo para encerrar o envio: 13:28:00 do dia 11/07/2025. Justificativa: Solicito envio de documentos que comprovem o atendimento da oferta aos pontos levantados no Parecer Nª 22.2025.SIET.1668772.2025.001317..
11/07/2025 às 12:13:57	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 finalizou o envio de anexo.
11/07/2025 às 12:17:35	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 convocado para o envio de anexo. Prazo para encerrar o envio: 15:30:00 do dia 11/07/2025. Justificativa: Prorrogado o prazo no tempo requerido. Solicito envio de documentos que comprovem o atendimento da oferta aos pontos levantados no Parecer Nª 22.2025.SIET.1668772.2025.001317...
11/07/2025 às 15:23:57	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 finalizou o envio de anexo.
14/07/2025 às 15:48:47	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 teve a proposta desclassificada, melhor lance: R$ 5.700,0000. Motivo: Proposta recusada conforme Parecer Nª 25.2025.SIET.1671649.2025.001317 e o subitem 10.7.1. c/c 10.3.5. do Edital. .
14/07/2025 às 15:52:39	Fornecedor HOUSE LTDA, CNPJ 35.689.930/0001-89 convocado para o envio de anexo. Prazo para encerrar o envio: 17:55:00 do dia 14/07/2025. Justificativa: Solicito o envio de proposta de preços ajustada ao lance e a documentação técnica do equipamento ofertado, conforme letra "k" do subitem 9.2 do Edital..
16/07/2025 às 14:08:32	Fornecedor HOUSE LTDA, CNPJ 35.689.930/0001-89 teve a proposta desclassificada, melhor lance: R$ 6.000,0000. Motivo: Proposta recusada em conformidade ao subitem 9.11 c/c subitem 10.3.5 do Edital..
16/07/2025 às 14:10:42	Fornecedor MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01 convocado para o envio de anexo. Prazo para encerrar o envio: 16:15:00 do dia 16/07/2025. Justificativa: Solicito envio de proposta de preços ajustada ao lance, acompanhada dos documentos técnicos do item ofertado, conforme letra "k" do subitem 9.2. do Edital..
17/07/2025 às 11:40:31	Fornecedor MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01 teve a proposta desclassificada, melhor lance: R$ 6.250,0000. Motivo: Proposta recusada em conformidade ao subitem 9.11 c/c subitem 10.3.5 do Edital..
17/07/2025 às 11:46:44	Retorno de item do julgamento para a etapa de desempate Me/Epp.
17/07/2025 às 11:46:44	Item está em 1ª desempate Me/Epp, aguardando lance.
17/07/2025 às 11:51:45	O Item teve o 1ª desempate Me/Epp encerrado às 11:51:44 de 17/07/2025. O tempo expirou e o lance não foi enviado pelo fornecedor PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA, CPF/CNPJ: 32.872.401/0001-28.
17/07/2025 às 11:51:45	Item encerrado para lances.
17/07/2025 às 12:00:31	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 convocado para o envio de anexo. Prazo para encerrar o envio: 14:05:00 do dia 17/07/2025. Justificativa: Solicito envio de proposta de preços ajustada ao lance, acompanhada dos documentos técnicos do item ofertado, conforme letra "k" do subitem 9.2. do Edital...

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Data/Hora	Descrição
17/07/2025 às 14:26:11	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 convocado para o envio de anexo. Prazo para encerrar o envio: 16:28:00 do dia 17/07/2025. Justificativa: Solicito envio de proposta de preços ajustada ao lance, acompanhada dos documentos técnicos do item ofertado, conforme letra "k" do subitem 9.2. do Edital....
17/07/2025 às 15:27:53	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 finalizou o envio de anexo.
21/07/2025 às 11:14:31	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 convocado para o envio de anexo. Prazo para encerrar o envio: 13:16:00 do dia 21/07/2025. Justificativa: Solicito envio de documentos referente ao item 3 ofertado..
28/07/2025 às 11:07:34	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 convocado para o envio de anexo. Prazo para encerrar o envio: 13:10:00 do dia 28/07/2025. Justificativa: Solicito documentos comprobatórios do atendimento aos itens apontados no Parecer Nª 26.2025.SIET.1679784.2025.001317..
28/07/2025 às 12:07:02	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 finalizou o envio de anexo.
30/07/2025 às 11:21:18	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 convocado para o envio de anexo. Prazo para encerrar o envio: 13:25:00 do dia 30/07/2025. Justificativa: Solicito envio de documentos conforme solicitado através do PARECER Nª 92.2025.DTIC.1683372.2025.001317. .
30/07/2025 às 12:25:19	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 finalizou o envio de anexo.
01/08/2025 às 11:16:53	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 teve a proposta aceita, melhor lance: R$ 8.250,0000. Motivo: Aceitação da Proposta com fundamento no Parecer Nª 27.2025.SIET. e no atendimento aos dispositivos referentes à proposta de preços no Edital do certame..
01/08/2025 às 11:17:05	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 registra a intenção de recurso na fase julgamento.
01/08/2025 às 11:18:11	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 registra a intenção de recurso na fase julgamento.
01/08/2025 às 11:18:47	Fornecedor TREER TECNOLOGY LTDA, CNPJ 41.680.761/0001-19 registra a intenção de recurso na fase julgamento.
01/08/2025 às 11:23:33	Fornecedor RL INFORMATICA LTDA, CNPJ 30.948.812/0001-24 registra a intenção de recurso na fase julgamento.
01/08/2025 às 11:23:58	Fornecedor RL INFORMATICA LTDA, CNPJ 30.948.812/0001-24 registra a desistência da intenção de recurso na fase julgamento.
01/08/2025 às 12:25:51	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 convocado para o envio de anexo. Prazo para encerrar o envio: 14:28:00 do dia 01/08/2025. Justificativa: Solicito o envio dos documentos de habilitação, conforme subitem 11 do Instrumento Convocatório..
01/08/2025 às 14:23:15	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 finalizou o envio de anexo.
05/08/2025 às 11:38:17	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 foi habilitado.
05/08/2025 às 11:38:42	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 registra a intenção de recurso na fase habilitação.
05/08/2025 às 11:40:53	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 registra a intenção de recurso na fase habilitação.
05/08/2025 às 12:21:44	Encerramento da sessão 1 de julgamento / habilitação.

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Ilmo(a). Pregoeiro(a) e Presidente da CPL e Equipe de Apoio da PROCURADORIA GERAL DE JUSTIÇA DO ESTADO DO AMAZONAS

Ref. Pregão Eletrônico N° 94010/2025 (SRP)

UASG: 925849

"Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses."

E. R. SOLUÇÕES INFORMÁTICA LTDA. (recorrente), já qualificada no processo em epígrafe, vem respeitosamente à presença de V. Sa. apresentar, tempestivamente, seu RECURSO contra decisão do(a) nobre pregoeiro(a) que classificou a proposta da empresa Torino Informática Ltda. CNPJ 03.619.767/0005-15, (recorrida), declarando-a vencedora do ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14" (300 unidades), deste certame, pelas razões e fundamentos infracitados. As razões são embasadas nas disposições da Lei nº 14.133, de 1º de abril de 2021.

I) BREVE SÍNTESE

A PROCURADORIA GERAL DE JUSTIÇA DO ESTADO DO AMAZONAS, deflagrou o Pregão Eletrônico n° 94010/2025, visando a contratação de empresa para o fornecimento DE EQUIPAMENTOS DE INFORMÁTICA, conforme Termo de Referência.

A licitação foi realizada por meio de sessão eletrônica, onde várias empresas apresentaram propostas para este item. Após a fase de lances o pregoeiro seguiu

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com a solicitação das propostas e documentos técnicos conforme classificação.

Após a fase de lances e envio da proposta atualizada, o Pregoeiro seguiu com a **declaração de vencedora da empresa Torino Informática Ltda. CNPJ 03.619.767/0005-15,** (recorrida), do **ITEM 3: MICROCOMPUTADOR TIPO 3 – "NOTEBOOK COMPACTO DE 14" (300 unidades).**

Antes de expormos os fatos, gostaríamos de informá-los que somos uma **Revenda Autorizada T1 da LENOVO TECNOLOGIA BRASIL**, um dos maiores fabricantes de tecnologia do mundo, e que atuamos desde 1997 prestando serviços em Tecnologia da Informação, com equipes de profissionais treinados e certificados, elaborando projetos, apresentando soluções, atendendo necessidades, e prevendo demandas para os mais diversos negócios em todo o território nacional, além de possuir larga experiência de atuação no setor governamental.

Somos um revendedor Platinum, ou seja, parceiro que demonstra alto nível de conhecimento técnico e compromisso com a marca Lenovo, podendo oferecer soluções mais complexas e personalizadas. Possuímos a autorização da Lenovo para revender seus produtos e oferecer serviços de suporte técnico.

Revendedores Platinum: Parceiros que demonstram alto nível de conhecimento técnico e compromisso com a marca Lenovo, **podendo oferecer soluções customizadas para atender às suas necessidades específicas do cliente.**

Conforme estabelece a Lei nº 14.133/2021, em seu Artigo 5º, todas as contratações públicas deverão respeitar os princípios da legalidade, impessoalidade, moralidade, publicidade, eficiência, entre outros. As exigências do edital estão em conformidade com tais princípios, garantindo a seleção da proposta mais vantajosa e a promoção do desenvolvimento nacional sustentável.

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II) DO NÃO ATENDIMENTO

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> *"MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS."*
>
> *"25.3. É facultada ao pregoeiro ou autoridade superior, em qualquer fase da licitação, a promoção de diligência destinada a esclarecer ou complementar a instrução do processo."*
>
> *"25.3.1. O pregoeiro, durante as fases de julgamento das propostas e/ou habilitação, **deve sanear eventuais erros ou falhas que não alterem a substância das propostas**, dos documentos e sua validade jurídica, mediante decisão fundamentada, registrada em ata e acessível aos licitantes, sendo que a vedação à inclusão de novo documento, prevista no art. 64 da Nova Lei de Licitações (Lei 14.133/2021), não alcança documento ausente, comprobatório de condição atendida pelo licitante quando apresentou sua proposta, que não foi juntado com os demais comprovantes de habilitação e/ou da proposta, por equívoco ou falha, o qual deverá ser solicitado e avaliado pelo pregoeiro. (Acórdão TCU 1211/2021 - Plenário, relator Ministro Walton Alencar Rodrigues)."*

Antes de demonstrar os pontos em que a Recorrida não está atendendo ao edital, gostaríamos de frisar que, durante a condução da fase de julgamento das propostas, foi verificado que a Recorrida alterou sua proposta comercial diversas vezes, incluindo serviços que não constavam na proposta originalmente apresentada.

Tais alterações incorrem em vício grave, pois a substituição ou adição de serviços impacta diretamente a composição de preços, a análise de exequibilidade e o julgamento objetivo das propostas, o que é vedado pelo próprio edital e pela legislação vigente.

Ocorre que **a inclusão de novos serviços à proposta, após sua apresentação, configura inequívoca alteração de seu conteúdo substancial, indo muito além de meras falhas formais ou ausência de documentos comprobatórios de condição preexistente.**

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a. “2. BIOS”

O edital solicita:

“13. Deve oferecer a possibilidade de, se demandado, vir com logo de inicialização do equipamento customizada de fábrica, com uma imagem previamente fornecida pela CONTRATANTE;”

ITEM	ESPECIFICAÇÃO	QUANT	MARCA	VALOR UNITÁRIO	VALOR TOTAL
Lote 03	COMPUTADOR TIPO 3 - "NOTEBOOK DE 14" NOTEBOOK HP 640 G11 PROC INTEL ULTRA 5 135U - VPRO MEMÓRIA 16GB(2X8) DDR5 5600 HD SSD 256GB NVME – DISCO PM9B1 WEBCAM 5MP WIFI6 + BT AX211 TELA 14 FHD BATERIA 56WHR WINDOWS 11 PROFESSIONAL SOFTWARE ABSOLUTE GARANTIA pelo período de60 (sessenta) meses, conforme estabelecido no Edital e Anexos. A garantia abranger acidente, inclusive danos não intencionais, tais como QUEDA, TELA QUEBRADA, DERRAMAMENTO DE LÍQUIDOS, OSCILAÇÃO DE ENERGIA, não se limitando às ocorrências supracitadas, sendo o rol apresentado um alista não exaustiva.". ACOMPANHA: MOUSE USB 1000 DPI HP E MOCHILA PARA NOTEBOOK. Teclado: Keyboard HP Standard Keyboard, spill-resistant,backlit, Durakey keyboard. Notebook nacional com	300	HP 640 G11	**R$ 8.250,00** (OITO MIL E DUZENTOS E CINQUENTA REAIS)	**R$ 2.475.000,00** (DOIS MILHOES E QUATROCENTOS E SETENTA E CINCO MIL REAIS)
	teclado (Brasil) ABNT-II e retroiluminado. Serviço de aplicação da logo em laser nos equipamentos. Serviço de customização de imagem de instalação do sistema operacional e softwares customizada previamente fornecida pela CONTRATANTE e replicação nos equipamentos.				
				TOTAL DA PROPOSTA	**R$ 2.475.000,00** (DOIS MILHOES E QUATROCENTOS E SETENTA E CINCO MIL REAIS)

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Em sua proposta, a Recorrida **não apresentou se o equipamento poderá vir com o logo da Contratante e se é possível este tipo de serviço em Fábrica**, como é exigido no edital.

b. **"5. Unidade de Armazenamento"**

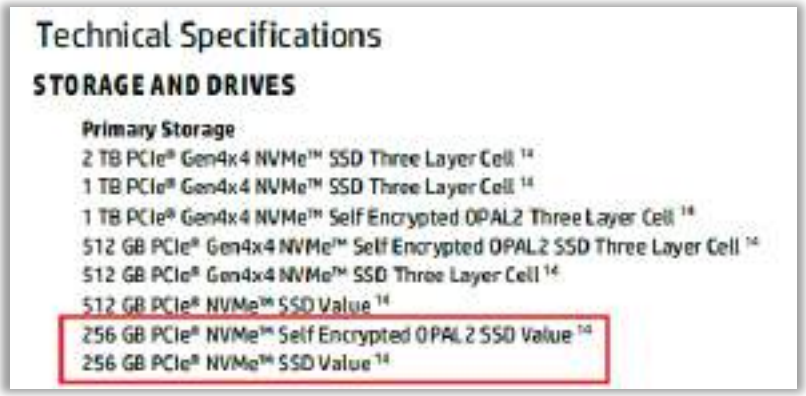
O edital solicita:

"1. Deve possuir, no mínimo, 1 (uma) unidade padrão tipo Solid State Drive (SSD) interna instalada do tipo M.2, na capacidade mínima de 256 GB e velocidade mínima de gravação de 1.200MB/s;"

"2. Deve utilizar interface tipo M.2 PCIe 4.0, com o protocolo NVMe, ou superior;"

"3. Deve ser instalada durante o processo de manufatura do computador, e homologado como parte do equipamento, inclusive estando coberto pela garantia e suporte como descrito no Termo de Referência."

O equipamento ofertado pela Recorrida foi o HP EliteBook 640 14 inch G11 Notebook PC. Em seu catálogo, conforme apresentado, temos o seguinte:



Technical Specifications

STORAGE AND DRIVES

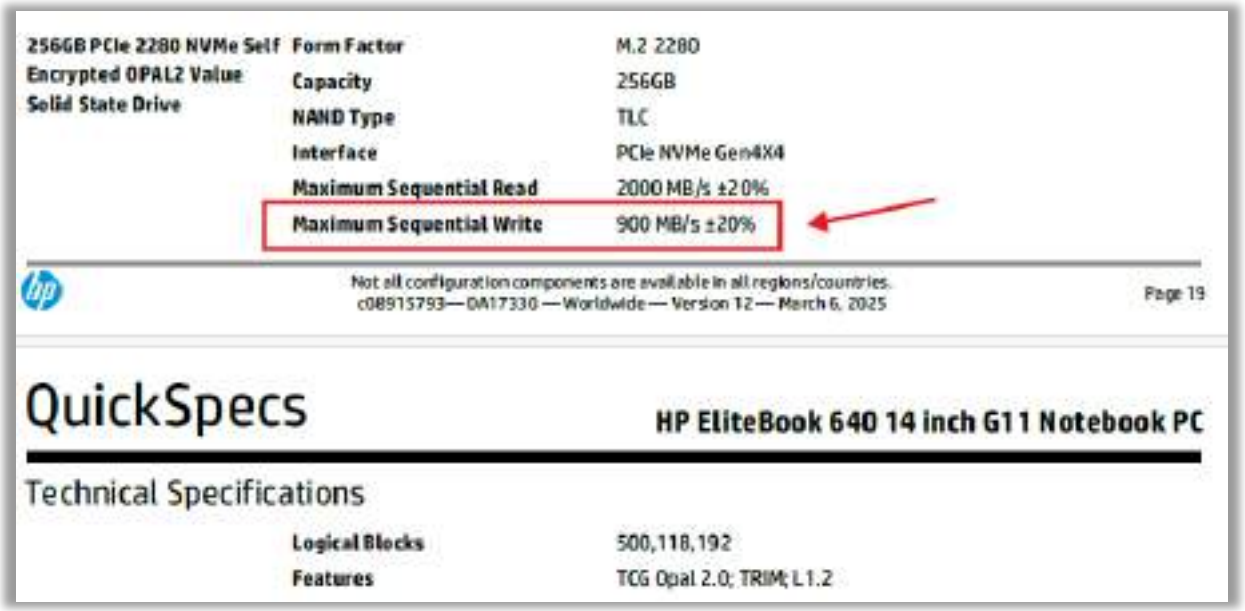
Primary Storage

2 TB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell [14]
1 TB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell [14]
1 TB PCIe® Gen4x4 NVMe™ Self Encrypted OPAL2 Three Layer Cell [14]
512 GB PCIe® Gen4x4 NVMe™ Self Encrypted OPAL2 SSD Three Layer Cell [14]
512 GB PCIe® Gen4x4 NVMe™ SSD Three Layer Cell [14]
512 GB PCIe® NVMe™ SSD Value [14]
256 GB PCIe® NVMe™ Self Encrypted OPAL2 SSD Value [14]
256 GB PCIe® NVMe™ SSD Value [14]

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Opção 1:



256GB PCIe 2280 NVMe Self Encrypted OPAL2 Value Solid State Drive	Form Factor	M.2 2280
	Capacity	256GB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	2000 MB/s ±20%
	Maximum Sequential Write	900 MB/s ±20%

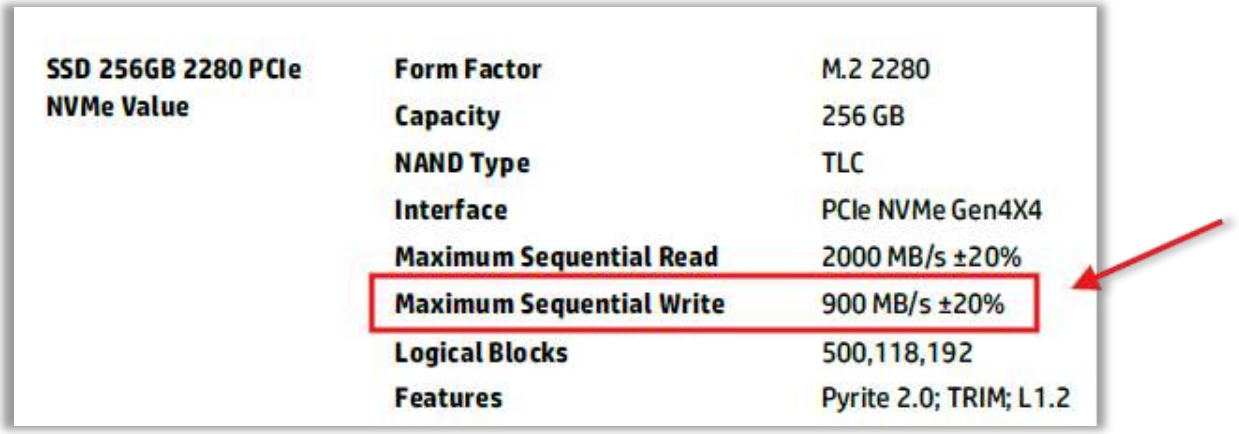
Not all configuration components are available in all regions/countries.
c08915793—DA17330—Worldwide—Version 12—March 6, 2025
Page 19

QuickSpecs
HP EliteBook 640 14 inch G11 Notebook PC

Technical Specifications

Logical Blocks	500,118,192
Features	TCG Opal 2.0; TRIM; L1.2

Opção 2:



SSD 256GB 2280 PCIe NVMe Value	Form Factor	M.2 2280
	Capacity	256 GB
	NAND Type	TLC
	Interface	PCIe NVMe Gen4X4
	Maximum Sequential Read	2000 MB/s ±20%
	Maximum Sequential Write	900 MB/s ±20%
	Logical Blocks	500,118,192
	Features	Pyrite 2.0; TRIM; L1.2

Estas são as duas opções ofertadas no Catálogo OFICIAL do notebook *"HP EliteBook 640 14 inch G11 Notebook PC"*.

Após pedido da Recorrida para que apresentasse um documento comprovando o atendimento:

ersolucoes.com.br | gov@ersolucoes.com.br
Av. Cem, S/N, Quadra 01 - Módulo 01, Sala 01 - Piso 02
Terminal Intermodal Serra ES CEP: 29.161-384

DELL Technologies PLATINUM PARTNER
ERSOLUÇÕES INFORMÁTICA LTDA. (1697794) SEI 2025.001317 / pg. 30



Foi enviado o documento intitulado *"PM9B1 M.2 SSD Datasheet_v1.0_ for HPI"* onde nele constava o catálogo de um SSD de 256GB da marca SAMSUNG e modelo "SAMSUNG SSD PM9B1".

Nosso questionamento é:

Por que não é constado em seu CATÁLOGO OFICIAL este SSD?

Qual a garantia de que o equipamento será integrado em fábrica com este modelo de SSD, se nem o fabricante coloca em seu catálogo?

No arquivo enviado intitulado *"N16683-A - (With Specification) - For Torino"* não fica claro quais os equipamentos acompanham este SSD. Apenas é o catálogo do modelo SAMSUNG SSD PM9B1. Não comprovando que o notebook HP EliteBook 640 14 inch G11 Notebook PC será produzido com este SSD.

c. "14. Formato de manufatura e fonte de alimentação"

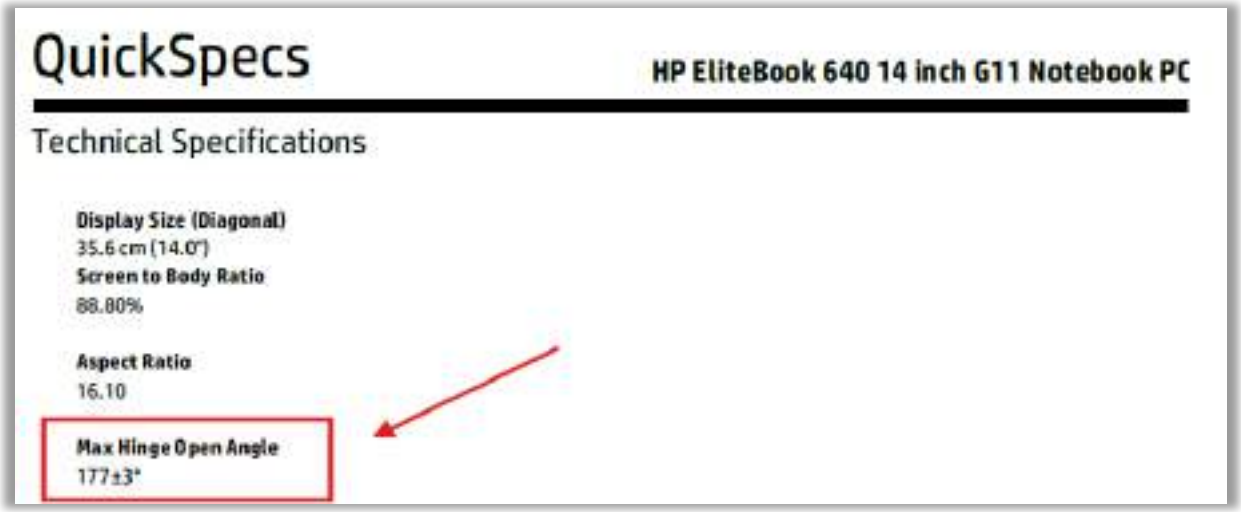
O edital solicita:

*"3. A dobradiça do equipamento, deve ser construída em metal, e com **articulação de 180º**;"*

O equipamento ofertado pela Recorrida foi o HP EliteBook 640 14 inch G11 Notebook PC. Em seu catálogo, conforme apresentado, temos o seguinte:

ersolucoes.com.br | gov@ersolucoes.com.br
Av. Cem, S/N, Quadra 01 - Módulo 01, Sala 01 - Piso 02
Terminal Intermodal Serra ES CEP: 29.161-384

Partner Cegep Program Platinum DELL Technologies PLATINUM PARTNER
Impresso por ER SOLUÇÕES INFORMÁTICA LTDA. (1697794) SEI 2025.0013177 / pg. 31



QuickSpecs

HP EliteBook 640 14 inch G11 Notebook PC

Technical Specifications

Display Size (Diagonal)
35.6 cm (14.0")
Screen to Body Ratio
88.80%

Aspect Ratio
16.10

Max Hinge Open Angle
177±3°

O edital exige que a abertura da tampa total do notebook deve ser de 180° (cento e oitenta graus), o que é comprovado que o Notebook "EliteBook 640 14 inch G11 Notebook PC" não atende a este requisito, pois o mesmo chega no máximo à 177° (cento e setenta e sete graus).

d. "14. Formato de manufatura e fonte de alimentação"

O edital solicita:

"6. Deve possuir leitor biométrico integrado, em área acessível, quando o notebook estiver aberto;"

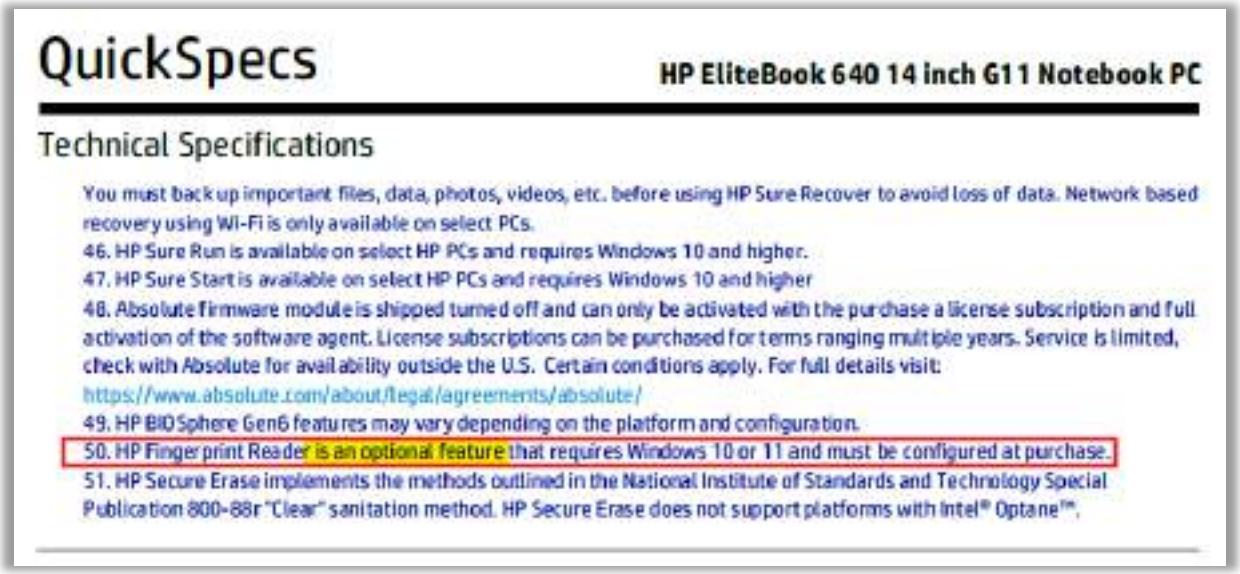
Em seu catálogo, conforme apresentado, temos o seguinte:



BIOS
Absolute Persistence Module [48]
BIOS Update via Network
HP BIOSphere Gen6 [49]
HP DriveLock & Automatic DriveLock
HP Fingerprint Sensor [50]
HP Secure Erase [51]
HP Wake on WLAN

ersolucoes.com.br | gov@ersolucoes.com.br
Av. Cem, S/N, Quadra 01 - Módulo 01, Sala 01 - Piso 02
Terminal Intermodal, Serra - ES | CEP: 29.161-384

DELL Technologies PLATINUM PARTNER
SOLUÇÕES INFORMÁTICA LTDA. (1697794) SEI 2025.001317 / pg. 32



QuickSpecs

HP EliteBook 640 14 inch G11 Notebook PC

Technical Specifications

You must back up important files, data, photos, videos, etc. before using HP Sure Recover to avoid loss of data. Network based recovery using Wi-Fi is only available on select PCs.
46. HP Sure Run is available on select HP PCs and requires Windows 10 and higher.
47. HP Sure Start is available on select HP PCs and requires Windows 10 and higher
48. Absolute firmware module is shipped turned off and can only be activated with the purchase a license subscription and full activation of the software agent. License subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S. Certain conditions apply. For full details visit: https://www.absolute.com/about/legal/agreements/absolute/
49. HP BIOSphere Gen6 features may vary depending on the platform and configuration.
50. HP Fingerprint Reader is an optional feature that requires Windows 10 or 11 and must be configured at purchase.
51. HP Secure Erase implements the methods outlined in the National Institute of Standards and Technology Special Publication 800-88r "Clear" sanitation method. HP Secure Erase does not support platforms with Intel® Optane™.

Traduzindo *"50. HP Fingerprint Reader is an optional feature that requires Windows 10 or 11 and must be configured at purchase."* temos: 50. O leitor de impressão digital HP é um recurso opcional que requer o Windows 10 ou 11 e deve ser configurado na compra."

A Recorrida não colocou em sua proposta este item, deixando claro que não foi considerado em seus custos, impactando diretamente a composição de preços, a análise de exequibilidade e o julgamento objetivo das propostas. Sendo assim, não sendo possível comprovar que este item foi ofertado em sua proposta.

e. "18. Outros requisitos"

O edital solicita:

"2. Deverá acompanhar maleta, pasta, mochila ou similar, para transporte com segurança, de tamanho suficiente para acondicionar o equipamento e seus acessórios (fonte de alimentação e cabos), confeccionada em material resistente e impermeável;"

"k) Quando solicitada pelo Pregoeiro, ***documentação técnica (manuais, catálogos ou prospectos)****, com as características detalhadas (marca, modelo, cor, tipo de material e medidas) e imagens ilustrativas dos produtos propostos, que possibilitem a completa averiguação de conformidade com as especificações, visando facilitar a avaliação a ser*

ersolucoes.com.br | gov@ersolucoes.com.br
Av. Cem, S/N, Quadra 01 - Módulo 01, Sala 01 - Piso 02
Terminal Intermodal Serra ES CEP: 29.161-384

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realizada por técnicos deste Órgão."

A Recorrida **não apresentou em sua proposta qual o modelo e marca ofertado da Mochila**, não sendo possível a comprovação de que este item atenderá ao que é exigido no edital.

ersolucoes.com.br | gov@ersolucoes.com.br
Av. Cem, S/N, Quadra 01 - Módulo 01, Sala 01 - Piso 02
Terminal Intermodal Serra ES CEP: 29.161-384

Partner Digital Program ONLINE
DELL Technologies PLATINUM PARTNER
Impresso por: ER SOLUÇÕES INFORMÁTICA LTDA. (1697794) SEI 2025.001317 / pg. 34

III) DO DIREITO:

Em uma análise fática, é possível concluir que a **RECORRIDA não cumpriu** com todas as especificações do Edital.

Certo é que a Administração Pública não pode quedar-se às vontades e aos interesses dos particulares, mas deve trabalhar em prol da satisfação dos interesses coletivos, visando garantir a melhor contratação possível para a Administração Pública, considerando a conjugação do pleno atendimento às exigências com o menor preço.

IV) DAS CONSIDERAÇÕES E REQUERIMENTOS FINAIS

Como demonstrado acima, a empresa **RECORRIDA não atende** aos requisitos mínimos necessários exigidos no edital.

Por todo exposto, a **E.R. SOLUÇÕES INFORMÁTICA LTDA** requer, respeitosamente, que sejam apreciados os concretos e irrefutáveis argumentos apresentados neste recurso, para ao final julgar totalmente procedente o Recurso proposto pela licitante **E.R. Soluções Informática LTDA**.

Isto é o que se impõe, pela estrita observância aos ditames legais e aos princípios basilares!

Termos em que, pede deferimento.

Julia Barbosa Avelar
julia@ersolucoes.com.br

Vendas - Governo

CPF: 318.101.328-51

RG: 54.193.926-9

Serra, 08 de agosto de 2025

E.R. SOLUÇÕES INFORMÁTICA LTDA. (1697794) SEI 2025.001317 / pg. 35

2º TABELIÃO DE NOTAS DE RIBEIRÃO PRETO
DANIEL PAES DE ALMEIDA - Tabelião
Reconheço por semelhança 2 Firma(s) SEM VALOR ECONÔMICO de: (1) ANDRÉ LUIS MACHADO PELICIONI
GEORGE EDUARDO SALIBY
Ribeirão Preto, 07/07/2025. Em test. da Verdade
Leandro Daniel Pereira - ESCREVENTE
Valor: R$ 17,24. Selos(s): 0863AA133344
123877 FIRMA 2
S20863AA0133344
SEGUNDO TABELIÃO DE NOTAS
Escrevente
Leandro Daniel Pereira

SOLUÇÕES
Integrando negócios

PROCURAÇÃO

E.R. Soluções Informática Ltda, inscrita no CNPJ sob o nº 05.778.325/0001-13**(MATRIZ)** situada na cidade de Ribeirão Preto/SP e CNPJ sob o nº 05.778.325/0005-47 **(FILIAL)** situada na cidade de Serra/ES, através de seus Representantes Legais Srs George Eduardo Saliby, portador do RG Nº 7.854.271-6/SSP –CPF 982.913.358-34 e André Luis Machado Pelicioni portador do RG Nº 18.658.107-5/SSP – CPF 248.785.548-78, DECLARAM pela presente que a **Srta. Julia Barbosa Avelar, brasileira, solteira, portadora da Cédula de Identidade n° 54.193.926-9 SSP/SP, cadastrada no CPF sob nº 318.101.328-51, residente e domiciliado na cidade de Ribeirão Preto na Rua João Vendruscolo, 3100, Jardim Florestan Fernandes, Cep 14079-328**, está autorizada por esta empresa a representá-la comercialmente para zelar dos seus interesses , inclusive com poderes de retirar editais, elaborar propostas de preços, assinar declarações, apresentar documentação para cadastro, retirar Certificados de Registro Cadastral, participar de sessões públicas de habilitação e julgamento da documentação e propostas, formular ofertas e lances verbais de preços nos pregões, assinar as respectivas atas, registrar ocorrências, formular impugnações, interpor recurso, renunciar o exercício de direito de recurso, transigir, requerer, assinar em licitações públicas, bem como assinar todos e quaisquer documentos, inclusive Contratos de Compra, indispensáveis ao bom e fiel cumprimento do presente mandato junto aos Órgãos FEDERAIS, ESTADUAIS, MUNICIPAIS E AUTARQUIAS E SOCIEDADES MISTAS.

A presente procuração é válida até 30/09/2025

Ribeirão Preto, 30 de junho de 2025

2º TABELIÃO

GEORGE EDUARDO SALIBY
Diretor Comercial

2º TABELIÃO

ANDRE LUIS MACHADO PELICIONI
Diretor Administrativo.

Documento(s) Razões Recursais - E.R. SOLUÇÕES INFORMÁTICA LTDA. (1697794) SEI 2025.001317 / pg. 36



SEGUNDO TABELIÃO DE NOTAS
Av. Prof. João Fiusa, 970 - Rib. Preto-SP
AUTENTICAÇÃO - Autentico a presente cópia reprográfica conforme ao original a mim apresentado. Dou fé.
RIB. PRETO SP 17 OUT. 2024
Paula Carolina Amarante Farinelli - Escrevente
Aldo Dias Borborema - Subst. Tabelião
Selos pagos por verba

VALIDO SOMENTE COM O SELO DE AUTENTICIDADE

123877 AUTENTICAÇÃO
AU0863AG0014813

SEGUNDO TABELIÃO DE NOTAS
Leandro Daniel Pereira
Escrevente
RIBEIRÃO PRETO - SP

Serra, 13 de Agosto de 2025

À
MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS

EDITAL DO PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP
ABERTURA: 29/06/2025 ÀS 10H00MIN.

CONTRARRAZÃO DO RECURSO DA EMPRESA E.R.

TORINO INFORMÁTICA LTDA., pessoa jurídica de direito privado, inscrita no Cadastro de Pessoa Jurídica do Ministério da Fazenda - CNPJ/MF - sob nº 03.619.767/0005-15, com sede na Avenida 600, S/N, QUADRA 15, MODULO 10, SETOR INDUSTRIAL, BAIRRO: TIMS, SERRA/ES, CEP 29161-399, por seu representante ao final indicado, vem com fulcro no artigo 4º, inciso XVIII da Lei nº 10.520/2002, apresentar suas

CONTRARRAZÕES DE RECURSO

Face o recurso apresentado pela empresa E. R. SOLUÇÕES INFORMÁTICA LTDA., no processo licitatório em epígrafe, com base nos fatos e fundamentos que passa a expor de maneira direta e sucinta para dar andamento ao processo.

Antes de apresentarmos as razões que justificam o presente recurso, é sobremodo assinalar que a Recorrente atua diuturnamente no ramo de licitações públicas há 23 anos, firmando contratos administrativos para fornecimento de equipamentos de informática e prestação de serviço nas diversas esferas do Poder Público, sendo uma constância a nossa participação em licitações públicas, sempre atuando com lisura, idoneidade e respeito às regras legais. Necessário registrar que esta Recorrida cumpriu com todos os requisitos previstos no edital, inclusive com a apresentação de toda a documentação exigida em Edital, tanto é verdade que o Sr. Pregoeiro decidiu por declarar vencedora esta Recorrida.

Primeiro ponto:

Em nenhum momento foi alterada a proposta, pois foi ofertado o equipamento HP 640 G11 que atende integralmente o que o edital solicita. A partir do momento que se vincula e incluir uma proposta, estamos cientes de todas as condições do edital e que a oferta abrange todos os requisitos do termo de referência.

Nesse sentido a comissão de maneira exemplar, efetuou as diligências, somente para sanar dúvidas, não havendo em nenhum momento qualquer alteração do objeto ofertado.

BIOS

Se a ER está a tanto tempo no mercado, é fácil perceber a má fé, em querer afirmar: se é possível o serviço de logo na BIOS! Eles mesmos já participaram de vários processos em que também participamos onde o serviço além de ofertado foi entregue.

Isso demonstra clara insatisfação e desespero, além de despreparo em apontar de forma leviana entendimentos os quais não refletem a realidade e até mesmo o meio o qual atua, pois são serviços comuns em diversos processos no governo, que solicitam esses tipos de serviços.

Vale ressaltar, que são serviços comuns e são há anos solicitados por diversos órgãos, pois sabem que todos os equipamentos corporativos suportam tais customizações.

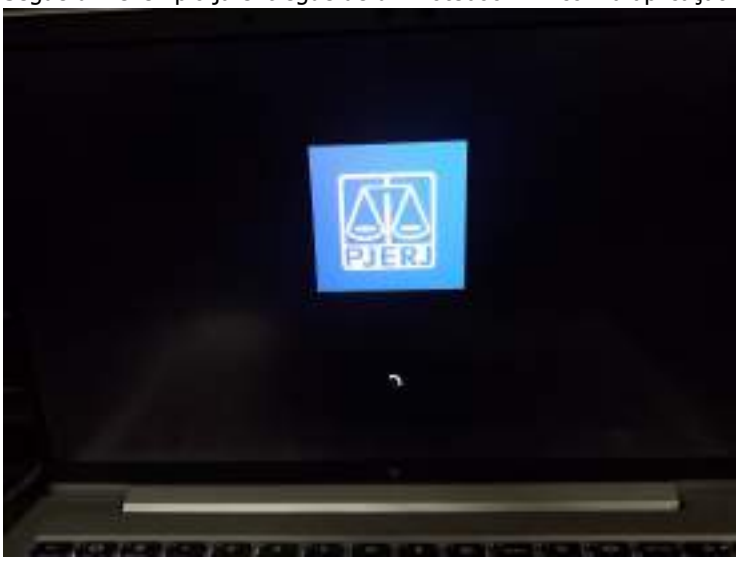
O trecho da carta do fabricante HP demonstra que os equipamentos suportam e podem ser realizadas customizações.

Declaramos ainda que, o produto **9Z0P1AV#TMP** – EliteBook 640 G11:

- Além de possuir equipamentos com configurações padrão de fábrica a HPI realiza customizações para atendimento as necessidades dos clientes. Para atendimento a este edital a CONTRATADA fará as solicitações de customização à HP de modo a atender plenamente as exigências edilícias. Estas customizações deverão estar descritas na proposta comercial emitida pela CONTRADA. As declarações a seguir, se aplicam aos modelos de equipamento mencionados, independentemente das customizações a serem realizadas;

Por fim, afirmamos na proposta que será entregue o serviço, caso seja solicitado.

Segue um exemplo já entregue de um notebook HP com a aplicação da logo na BIOS.



Sobre HD

Desde a nossa proposta inicial até a final, o SSD não foi alterado, que será entregue um SSD que atende ao solicitado.
É de conhecimento comum no mercado que os fabricantes utilizam diversos fornecedores para atender várias partes e peças de seus equipamentos, desde que eles atendam os requisitos mínimos.

Vamos ajudar a empresa ER com informação que mesmo os anos de mercado parece desconhecer, mas o que é mais provável, atua de forma sorrateira, em dizer sobre o mercado de SSD.

Os fabricantes dos equipamentos, não são indústria de SSD, eles capacitam e homologam itens para equiparem seus equipamentos, ou a LENOVO, DELL e HP produzem SSDs? Não, eles não são indústria desse componente, e sim, homologam esses componentes para seus equipamentos.

E mais, não existe 1 único fabricante de SSD no mercado para atender toda a demanda de produção de computadores e notebooks no mercado, assim, as Multinacionais como HP, DELL e LENOVO, adquirem de diversos fabricantes e homologam esses itens para seus equipamentos.

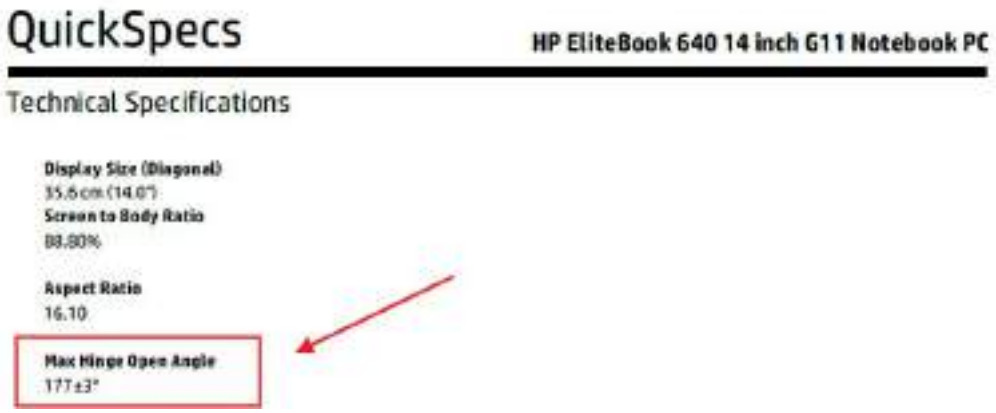
Não podemos prever o futuro no momento da proposta sem terem recebido os equipamentos, visto que todos os equipamentos quando forem entregues, podem serem vistoriados e conferidos se atendem ao solicitado.

Foi apresentado inclusive documento interno do Fabricante HP, com clara informação que o documento foi feito para a HP do componente SSD, com posterior comprovação de que o SSD é o homologado pela HP, e ele é utilizado em todos os modelos de equipamentos HP.

Isto é, comprovamos fielmente que o SSD é homologado pela HP, **e que o equipamento que será entregue atendendo todos os requisitos solicitados do SSD.**

Sobre a abertura do notebook.

Parece que a ER também precisa de ajuda a interpretar regras básicas de matemática e física, quando é colocado 177 +- 3, quer dizer que a tela chega a **180º (177+3).** Logo, atende ao solicitado.



Sobre o fingerprint.

Novamente, a empresa ER quer prever o futuro, sobre o que o equipamento possuirá na entrega, ou mesmo "tentam" adivinhar os nossos custos ou mesmo o que foi considerado ou não em nossa proposta.
Toda essa preocupação com os custos de nossa proposta, eles deveriam ser mais diligentes com a proposta deles mesmos, não com a dos outros fornecedores.

O catálogo do produto possui todas as configurações possíveis que ele pode ter, nesse sentido, **reafirmamos que o equipamento sim possuirá o leitor de impressão digital (fingerprint**), pois a partir do momento que ofertamos a proposta, aceitamos todas as condições do edital e do termo de referência.

Sobre a mochila.

Nossa proposta contempla a mochila que atende todos os requisitos.
Afinal, a mochila é um acessório do objeto principal notebook.
Mochilas do mercado corporativo atendem todos os requisitos solicitados.
Abaixo está a imagem e o detalhe da mochila, que será entregue.

Mochila



Mochila resistente e estruturada, com diversos compartimentos e excelente espaço interno.
Ideal para uso diário.
Medidas em cm: L28,0/H43,0/P23,0 (aproximadas).
Produzido em: nylon estruturado impermeável.
Forrada internamente em: Nylon resinado e verso almofadado.
Bolsos internos: 04 localizados dentro do bolso frontal menor, ideal para acesso rápido a itens pequenos.
Bolsos externos: 01 grande no verso para notebook, 01 em cada lateral em tela espumada, 01 em cada lateral em ziper, 02 frontais sendo o menor com sobre bolso em ziper e 01 superior.

Diante do exposto, solicitamos a reavaliação das alegações com base nas evidências documentais fornecidas e reiteramos nosso compromisso com a transparência e a excelência no cumprimento das obrigações contratuais.

Com o devido respeito, não há como prosperar o pedido formulado no recurso da E. R. SOLUÇÕES INFORMÁTICA LTDA., que conforme se está vendo pormenorizado ao longo desta contrarrazão, esta dissociada da veracidade dos fatos, e tem por objetivo claro e inequívoco tumultuar o presente certame, pois ao trazer "dúvidas" que não existem no mercado tecnológico em uma licitação de tecnologia com o suporte de uma equipe técnica capacitada, é, no mínimo, irresponsável, pois o processo licitatório está suspenso até decisão final desta D. Comissão, e ainda, estamos tendo que esclarecer conceitos básicos e fundamentais para qualquer técnico da área de informática, que deveriam fazer parte do cotidiano da RECORRENTE.

Sem maiores delongas, é evidente o objetivo único e exclusivo desta RECORRENTE em tumultuar o processo licitatório em questão trazendo à baila questionamentos tão estapafúrdios, como os apresentados por ela em sua peça recursal.

Assim, sem maior morosidade, em razão do quanto exposto e demonstrado, de rigor é o provimento da presente contrarrazão para manter a CLASSIFICAÇÃO desta TORINO, nos termos registrados no processo licitatório em epígrafe.

Não sobrevindo este entendimento, requer-se o encaminhamento para a Autoridade Superior competente, para que aprecie seu mérito, sendo esta a única forma de se alcançar a tão almejada Justiça!!!

Rodrigo do Amaral Rissio
RG: 27.954.969-6 SSP/SP
Sócio / Procurador

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

OFÍCIO Nº 316.2025.CPL.1697802.2025.001317

Manaus, *na data da assinatura.*

Ao Senhor

CARLOS ALEXANDRE DOS SANTOS NOGUEIRA

Chefe do Setor de Infraestrutura e Telecomunicação

Assunto: Análise de Propostas de Preços referente ao **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ SRP**.

Senhor Chefe,

Cumprimentando-o com o presente, informamos que tramita nesta Comissão Permanente de Licitação o Processo SEI n.º 2025.001317, referente ao **PREGÃO ELETRÔNICO N.º 94010/2025-CPL/MP/PGJ SRP,** cujo objeto é o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses*.

Isto posto, tendo sido aceita a proposta de preços para o Item 3 e habilitado o licitante **TORINO INFORMÁTICA LTDA.**, CNPJ (MF) n.º 03.619.767/0005-15 no sistema Compras.gov.br, oportunamente, registraram intenção de recurso os seguintes licitantes: a) **E.R. SOLUÇÕES INFORMÁTICA LTDA.**, CNPJ Nº 05.778.325/0005-47 (apresentou razões de recurso); b) **POSITIVO TECNOLOGIA S.A.**, CNPJ Nº 81.243.735/0009-03 (não registrou razões de recurso); e c) **TREER TECNOLOGY LTDA.** , CNPJ Nº 41.680.761/0001-19 (desistiu do cadastro das razões de recurso).

Por se tratar de tema técnico referente ao resultado das análises realizadas na documentação do Item 3, encaminho os autos em epígrafe a esse **Setor de Infraestrutura e Telecomunicação - SIET,** para **análise e manifestação** quanto às peças abaixo apresentadas em sede de recurso:

1. Razões Recursais - **E.R. SOLUÇÕES INFORMÁTICA LTDA.** , CNPJ Nº 05.778.325/0005-47 (doc. 1697794); e

2 . Contrarrazões Recursais - **TORINO INFORMÁTICA LTDA.** , CNPJ (MF) n.º 03.619.767/0005-15 (doc. 1697800).

A data limite para decisão no sistema é 25/08/2025. Nesse sentido,

solicito o retorno seja realizado até o dia 21/08/2025 para que seja emitida a decisão por parte deste Pregoeiro.

Atenciosamente,

Maurício Araújo Medeiros

Pregoeiro - PORTARIA 606/2025/SUBADM

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 14/08/2025, às 11:22, conforme art. 1º, III, "b", da Lei 11.419/2006.

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MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - CEP 69000-000 - Manaus - AM - www.mpam.mp.br

PARECER Nº 28.2025.SIET.1701819.2025.001317

PROCESSO DE COMPRA: 2025.001317 Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ SRP Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317
OBJETO: Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.

1. Relatório

Trata-se de expediente encaminhado pela CPL, a respeito de recurso apresentado pela empresa **E.R. SOLUÇÕES INFORMÁTICA LTDA.**, CNPJ Nº 05.778.325/0005-47 (doc. 1697794), e contrarrazões recursais apresentado pela empresa **TORINO INFORMÁTICA LTDA.**, CNPJ (MF) n.º 03.619.767/0005-15 (doc. 1697800), para que este SIET analise e se manifeste tecnicamente sobre o tema.

2. Fundamentação

A equipe técnica deste SIET analisou as razões de recurso apresentadas pela empresa E.R. Soluções Informática Ltda., CNPJ nº 05.778.325/0005-47 (doc. 1697794), e as contrarrazões apresentadas pela empresa Torino Informática Ltda., CNPJ nº 03.619.767/0005-15 (doc. 1697800), conforme solicitado pela Comissão Permanente de Licitação.

A análise foi realizada tomando por base:

- As especificações técnicas constantes do Anexo de Especificações – Item 3 do edital;
- A documentação apresentada pela empresa Torino em atendimento às diligências promovidas pelo Pregoeiro;
- Os argumentos constantes nas razões recursais da E.R. e nas contrarrazões da Torino;
- A legislação aplicável, notadamente a Lei nº 14.133/2021, art. 64, e o Decreto nº 10.024/2019, art. 17, inciso VI, que autorizam a promoção de diligências destinadas a sanar falhas formais, desde que não alterem a substância da proposta nem impliquem em modificação de valores;
- O entendimento consolidado pelo Acórdão TCU nº 1211/2021 – Plenário, que admite a juntada de documentos comprobatórios de

condições já atendidas à época da proposta, desde que ausentes apenas por falha formal ou omissão involuntária.

Dessa forma, a avaliação técnica buscou verificar a aderência da proposta da empresa Torino aos requisitos do edital, com especial atenção aos pontos questionados pela E.R. (BIOS, unidade de armazenamento, articulação da tela, leitor biométrico, mochila de transporte), além de confirmar o atendimento dos demais requisitos principais (processador, memória RAM, conectividade, sistema operacional, webcam e softwares complementares).

3. Matriz de Aderência Técnica

Requisito editalício	Conformidade	Observações técnicas
BIOS – suporte a logotipo customizável de fábrica (item 2.13)	**Atende**	O modelo ofertado dispõe de recurso de customização corporativa de BIOS, já utilizado em fornecimentos anteriores. Documentação apresentada pelo fabricante HP confirma a aderência.
Unidade de armazenamento – SSD M.2 PCIe 4.0 NVMe ≥ 256GB, ≥ 1200 MB/s, instalado de fábrica e homologado (item 5)	**Atende**	Foi apresentado datasheet do modelo Samsung PM9B1, homologado pela HP. Considerando que o fabricante pode adotar diferentes fornecedores homologados, será realizada a verificação pela equipe técnica (fiscalização) no recebimento para assegurar o atendimento integral ao requisito.
Articulação da tela em 180° (item 14.3)	**Atende**	A especificação técnica do fabricante indica ângulo de abertura de 177° ± 3°, compatível com a exigência de 180°.
Leitor biométrico integrado (item 14.6)	**Atende**	Embora o catálogo do fabricante apresente o recurso como opcional, a empresa declarou o atendimento integral ao edital.
Webcam integrada, FHD, com mecanismo de privacidade (item 13)	**Atende**	O modelo ofertado contempla webcam compatível com as exigências, sem ressalvas.
Mochila/case de transporte (item 18.2)	**Atende**	O acessório teve sua especificação detalhada em diligência e foi aceito como em conformidade com o edital.

Requisito editalício	Conformidade	Observações técnicas
Demais requisitos principais (processador ≥ 6 núcleos, RAM 16GB DDR5, sistema operacional Windows 11 Pro OEM, conectividade, portas USB/HDMI, Wi-Fi 6, bateria, softwares de controle e certificações)	**Atende**	Documentação apresentada confirma a aderência aos requisitos principais do Termo de Referência.

4. Conclusão

Todos os itens questionados em recurso apresentaram conformidade, alguns após diligências realizadas junto ao fornecedor pela equipe técnica do MPAM. Não foram constatadas alterações substanciais na proposta ou de valores com as diligências.

É o parecer.

Manaus, 25 de agosto de 2025.

FRANCISCO ELVISLÂNIO PEREIRA
Agente de apoio - Manutenção/Informática

CARLOS ALEXANDRE DOS SANTOS NOGUEIRA
Chefe do Setor de Infraestrututa e Telecomunicações

Documento assinado eletronicamente por **Francisco Elvislânio Pereira**, **Agente de Apoio - Administrativo**, em 25/08/2025, às 11:55, conforme art. 1º, III, "b", da Lei 11.419/2006.

Documento assinado eletronicamente por **Carlos Alexandre dos Santos Nogueira**, **Chefe do Setor de Infraestrutura e Telecomunicação - SIET**, em 27/08/2025, às 09:17, conforme art. 1º, III, "b", da Lei 11.419/2006.

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DECISÃO Nº 35.2025.CPL.1707654.2025.001317

RAZÕES
RECURSAIS APRESENTADAS PELA EMPRESA LICITANTE **E. R. SOLUÇÕES INFORMÁTICA LTDA.**, CNPJ Nº 05.778.325/0005-47, NO INTERESSE DO PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ SRP. PRESSUPOSTOS SUBJETIVOS (SUCUMBÊNCIA, LEGITIMIDADE, INTERESSE DE AGIR) ATENDIDOS. PRESSUPOSTOS OBJETIVOS (A EXISTÊNCIA DE UM ATO ADMINISTRATIVO, TEMPESTIVIDADE E FUNDAMENTAÇÃO) ATENDIDOS. MANTER A DECISÃO DE ACEITAÇÃO DE PROPOSTA E HABILITAÇÃO DA VENCEDORA PARA O ITEM 3.

1. DA DECISÃO

Analisados os aspectos objetivos dos recursos administrativos dirigidos, este **PREGOEIRO**, com fundamento no artigo 60, § 1.º, do ATO PGJ N.º 008/2024, decide:

a) **Receber** e **conhecer** do recurso interposto pela empresa **E. R. SOLUÇÕES INFORMÁTICA LTDA.**, inscrita no CNPJ Nº 05.778.325/0005-47, no interesse do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ, pelo qual se busca o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses*, conforme especificações e condições constantes do Edital do certame e seus anexos;

b) Após exame das razões recursais apresentadas pelas empresas *susomencionada* no ***subitem "a",*** este Pregoeiro informa as motivações que culminaram nas decisões outrora prolatadas, para, no mérito, **NEGAR PROVIMENTO** ao recurso interposto pela empresa **E. R. SOLUÇÕES INFORMÁTICA LTDA.**, inscrita no CNPJ Nº 05.778.325/0005-47**,** nos termos artigo 165 da Lei n.º 14.133/2021.

2. DO RELATÓRIO

Trata-se de recurso administrativo interposto pela empresa **E. R. SOLUÇÕES INFORMÁTICA LTDA.** , inscrita no CNPJ Nº 05.778.325/0005-47 em sede do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ, pelo qual se busca busca o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses*, conforme especificações e condições constantes do Edital do certame e seus anexos.

2.1. Da Manifestação de Intento Recursal

Durante a sessão pública do certame em epígrafe, a aludida empresa irresignada manifestou intenção de apresentar recurso:

2.1.1. E. R. SOLUÇÕES INFORMÁTICA LTDA. , inscrita no CNPJ Nº 05.778.325/0005-47**:**

> Intenção de recurso
>
> Intenção de recurso do julgamento de propostas registrada às 11:17 de 01/08/2025
>
> Intenção de recurso da habilitação de propostas registrada às 11:40 de 05/08/2025

Nessa senda, após a fase de habilitação de propostas, foi aberto, em 05/08/2025, o prazo legal de 3 (três) dias úteis para oferecimento das razões de recurso, logo, **com data final até o dia 08 de agosto de 2025**, às 23h59min.

2.2. Das Razões de Recurso

2.2.1. E. R. SOLUÇÕES INFORMÁTICA LTDA. , inscrita no CNPJ Nº 05.778.325/0005-47 **(doc. 1697794):**

No dia 08/08/2025, a empresa irresignada anexou ao Sistema Compras.gov suas razões recursais, as quais foram apensadas aos autos e também disponibilizadas no Portal do MP-AM, em inteiro teor, na página eletrônica de acompanhamento deste certame (pelo link PE 94010/2025/CPL/MP/PGJ-SRP – Estações de trabalho e computadores portáteis), arguindo, em suma, supostas irregularidades na proposta de preços da empresa recorrida - TORINO INFORMÁTICA LTDA., CNPJ Nº 03.619.767/0005-15, bem como na aceitação da oferta vencedora, conforme transcrição abaixo:

> **III) DO DIREITO:**
>
> Em uma análise fática, é possível concluir que a

> **RECORRIDA não cumpriu** com todas as especificações do Edital. Certo é que a Administração Pública não pode quedar-se às vontades e aos interesses dos particulares, mas deve trabalhar em prol da satisfação dos interesses coletivos, visando garantir a melhor contratação possível para a Administração Pública, considerando a conjugação do pleno atendimento às exigências com o menor preço.
>
> **IV) DAS CONSIDERAÇÕES E REQUERIMENTOS FINAIS**
>
> Como demonstrado acima, a empresa **RECORRIDA não atende** aos requisitos mínimos necessários exigidos no edital.
>
> Por todo exposto, a **E.R. SOLUÇÕES INFORMÁTICA LTDA** requer, respeitosamente, que sejam apreciados os concretos e irrefutáveis argumentos apresentados neste recurso, para ao final julgar totalmente procedente o Recurso proposto pela licitante E.R. Soluções Informática LTDA.
>
> Isto é o que se impõe, pela estrita observância aos ditameslegais e aos princípios basilares!
>
> Termos em que, pede deferimento.
>
> Julia Barbosa Avelar
>
> Vendas - Governo

2.3. Das Contrarrazões

O prazo final estabelecido e apresentado durante a Sessão realizada no Sistema Compras.gov, para todos os interessados, foi o dia 14/08/2025, até 23h59min.

Sendo assim, observada a data final, a empresa **TORINO INFORMÁTICA LTDA.** , inscrita no CNPJ sob o nº 03.619.767/0005-15, apresentou, pontualmente, suas CONTRARRAZÕES (doc. 1697800), as quais foram apensadas aos autos e também disponibilizadas, em inteiro teor, na página eletrônica de acompanhamento deste certame (pelo link PE 94010/2025/CPL/MP/PGJ-SRP – Estações de trabalho e computadores portáteis).

No intuito de refutar os argumentos apresentados pela empresa **E. R. SOLUÇÕES INFORMÁTICA LTDA.** , inscrita no CNPJ Nº 05.778.325/0005-47 **(doc. 1697794)**, a RECORRIDA solicita, em suma:

> [...]
>
> Com o devido respeito, não há como prosperar o pedido formulado no recurso da E. R. SOLUÇÕES INFORMÁTICA LTDA., que conforme se está vendo pormenorizado ao longo desta contrarrazão, esta dissociada da veracidade dos fatos, e tem por objetivo claro e inequívoco tumultuar o presente certame, pois ao trazer “dúvidas” que não existem no mercado tecnológico em uma licitação de tecnologia com o suporte de uma equipe técnica capacitada, é, no mínimo, irresponsável, pois o processo

> licitatório está suspenso até decisão final desta D. Comissão, e ainda, estamos tendo que esclarecer conceitos básicos e fundamentais para qualquer técnico da área de informática, que deveriam fazer parte do cotidiano da RECORRENTE.
>
> Sem maiores delongas, é evidente o objetivo único e exclusivo desta RECORRENTE em tumultuar o processo licitatório em questão trazendo à baila questionamentos tão estapafúrdios, como os apresentados por ela em sua peça recursal.
>
> Assim, sem maior morosidade, em razão do quanto exposto e demonstrado, de rigor é o provimento da presente contrarrazão para manter a CLASSIFICAÇÃO desta TORINO, nos termos registrados no processo licitatório em epígrafe.
>
> Não sobrevindo este entendimento, requer-se o encaminhamento para a Autoridade Superior competente, para que aprecie seu mérito, sendo esta a única forma de se alcançar a tão almejada Justiça!!!
>
> Rodrigo do Amaral Rissio
> RG: 27.9XX.XXX-6 SSP/SP
> Sócio/ Procurador

É o que, em síntese, cabe relatar.

3. DAS RAZÕES DE DECIDIR

Vale ressaltar, em caráter preliminar, que o Pregoeiro conduziu o certame sob os parâmetros dos princípios e regras legais que disciplinam o procedimento licitatório, no presente caso, estabelecidos na **Lei nº. 14.133/2021** (Nova Lei de Licitações e Contratos Administrativos).

Nesse sentido, lembremos que o dever administrativo de adotar critérios claros, objetivos e legais durante a análise das documentações dos concorrentes em uma licitação decorre da obrigação da Administração Pública manter plena transparência de seus atos, a fim de definir qual a licitante reúne condições de qualificação técnica, jurídica, fiscal e econômica indispensáveis à garantia do cumprimento de seus deveres, sem se desviar da observância necessária do princípio da igualdade entre os licitantes, estimulando o caráter competitivo da licitação, constante no artigo 5º da Lei n.º 14.133/2021, abaixo disposto:

> Art. 5º Na aplicação desta Lei, serão observados os **princípios da legalidade, da impessoalidade, da moralidade, da publicidade, da eficiência, do interesse público, da probidade administrativa, da igualdade, do planejamento, da transparência, da eficácia, da segregação de funções, da motivação, da vinculação ao edital, do julgamento objetivo, da segurança jurídica, da razoabilidade, da competitividade, da proporcionalidade, da celeridade, da economicidade e do**

desenvolvimento nacional sustentável, assim como as disposições do Decreto-Lei nº 4.657, de 4 de setembro de 1942 (Lei de Introdução às Normas do Direito Brasileiro).

Dentre esses princípios, no caso em foco, destaca-se o da ***vinculação ao instrumento convocatório,*** a um, porque esse primado serviu de lastro para toda a construção do inconformismo da licitante vencida; e, a duas, porque corresponde exatamente ao fundamento primeiro das providências adotadas pelo Pregoeiro do certame. Portanto, esse será o norte para as ponderações e conclusões expostas no presente *decisum*, a seguir delineadas.

Assim, passemos à análise de mérito.

Da análise das impugnações colacionadas, infere-se que as solicitações referem-se, especificamente, às disposições estabelecidas no **Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317**, Anexo I e parte integrante do Edital do **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ-SRP.** Nesse sentido, as peças foram encaminhadas ao setor técnico demandante - Setor de Infraestrututa e Telecomunicações - SIET, que se manifestou de forma sintética, porém, abrangente, nos termos do **Parecer Nº 28.2025.SIET.1701819.2025.001317**, transcrito abaixo:

Parecer Nº 28.2025.SIET.1701819.2025.001317

1. <u>Relatório</u>

Trata-se de expediente encaminhado pela CPL, a respeito de recurso apresentado pela empresa **E.R. SOLUÇÕES INFORMÁTICA LTDA.**, CNPJ Nº 05.778.325/0005-47 (doc. 1697794), e contrarrazões recursais apresentado pela empresa **TORINO INFORMÁTICA LTDA.**, CNPJ (MF) n.º 03.619.767/0005-15 (doc. 1697800), para que este SIET analise e se manifeste tecnicamente sobre o tema.

2. <u>Fundamentação</u>

A equipe técnica deste SIET analisou as razões de recurso apresentadas pela empresa E.R. Soluções Informática Ltda., CNPJ nº 05.778.325/0005-47 (doc. 1697794), e as contrarrazões apresentadas pela empresa Torino Informática Ltda., CNPJ nº 03.619.767/0005-15 (doc. 1697800), conforme solicitado pela Comissão Permanente de Licitação.

A análise foi realizada tomando por base:

2.1. As especificações técnicas constantes do Anexo de Especificações – Item 3 do edital;

2.2. A documentação apresentada pela empresa Torino em atendimento às diligências promovidas pelo Pregoeiro;

2.3. Os argumentos constantes nas razões recursais da E.R. e nas contrarrazões da Torino;

2.4. A legislação aplicável, notadamente a Lei nº 14.133/2021, art. 64, e o Decreto nº 10.024/2019, art. 17, inciso VI, que autorizam a promoção de diligências destinadas a sanar falhas formais, desde que não

alterem a substância da proposta nem impliquem em modificação de valores;

2.5. O entendimento consolidado pelo Acórdão TCU nº 1211/2021 – Plenário, que admite a juntada de documentos comprobatórios de condições já atendidas à época da proposta, desde que ausentes apenas por falha formal ou omissão involuntária.

Dessa forma, a avaliação técnica buscou verificar a aderência da proposta da empresa Torino aos requisitos do edital, com especial atenção aos pontos questionados pela E.R. (BIOS, unidade de armazenamento, articulação da tela, leitor biométrico, mochila de transporte), além de confirmar o atendimento dos demais requisitos principais (processador, memória RAM, conectividade, sistema operacional, webcam e softwares complementares).

3. Matriz de Aderência Técnica

Requisito editalício	Conformidade	Observações técnicas
BIOS – suporte a logotipo customizável de fábrica (item 2.13)	**Atende**	O modelo ofertado dispõe de recurso de customização corporativa de BIOS, já utilizado em fornecimentos anteriores. Documentação apresentada pelo fabricante HP confirma a aderência.
Unidade de armazenamento – SSD M.2 PCIe 4.0 NVMe ≥ 256GB, ≥ 1200 MB/s, instalado de fábrica e homologado (item 5)	**Atende**	Foi apresentado datasheet do modelo Samsung PM9B1, homologado pela HP. Considerando que o fabricante pode adotar diferentes fornecedores homologados, será realizada a verificação pela equipe técnica (fiscalização) no recebimento para assegurar o atendimento integral ao requisito.
Articulação da tela em 180° (item 14.3)	**Atende**	A especificação técnica do fabricante indica ângulo de abertura de 177° ± 3°, compatível com a exigência de 180°.
Leitor biométrico integrado (item 14.6)	**Atende**	Embora o catálogo do fabricante apresente o recurso como opcional, a empresa declarou o atendimento integral ao edital.
Webcam integrada, FHD, com mecanismo de privacidade (item 13)	**Atende**	O modelo ofertado contempla webcam compatível com as exigências, sem ressalvas.
Mochila/case de transporte (item 18.2)	**Atende**	O acessório teve sua especificação detalhada em diligência e foi aceito como em conformidade com o edital.
Demais requisitos principais (processador ≥ 6 núcleos, RAM 16GB DDR5, sistema operacional Windows 11 Pro OEM, conectividade, portas USB/HDMI, Wi-Fi 6, bateria, softwares de controle e certificações)	**Atende**	Documentação apresentada confirma a aderência aos requisitos principais do Termo de Referência.

4. <u>Conclusão</u>

Todos os itens questionados em recurso apresentaram conformidade, alguns após diligências realizadas junto ao fornecedor pela equipe técnica do MPAM. Não foram constatadas alterações substanciais na proposta ou de valores com as diligências.

É o parecer.

Manaus, 25 de agosto de 2025.

FRANCISCO ELVISLÂNIO PEREIRA
Agente de apoio - Manutenção/Informática

CARLOS ALEXANDRE DOS SANTOS NOGUEIRA
Chefe do Setor de Infraestrututa e Telecomunicações

Fundamentado no parecer exposto acima, afere-se que não há divergência técnica quanto ao Item 3 ofertado e as exigências do Instrumento Convocatório referentes ao item, não se fazendo necessárias maiores digressões.

Quanto às oportunidades concedidas à recorrida, relembro que o Edital do certame prevê, em seu subitem 10.7. c/c 10.7.1., o seguinte:

> **10.7. Erros no preenchimento da planilha não constituem motivo para a desclassificação da proposta.** A planilha poderá ser ajustada pelo fornecedor, no prazo indicado pelo sistema, desde que não haja majoração do preço.
>
> 10.7.1. Verificada a presença de erros sanáveis na proposta de preços, **o Pregoeiro ou Administração poderá realizar diligência junto à Licitante para a devida correção apenas das falhas apontadas, <u>limitado a 3 (três) oportunidades</u>**, vedada a juntada de documento novo.

Nesse sentido, as oportunidades foram concedidas com lastro no Instrumento Convocatório, bem como as alterações, em sede de diligências, de acordo com o parecer técnico supracitado, não representaram alteração da proposta vencedora, mas esclarecimento e complementação das informações anteriormente apresentadas, sem majoração de preço.

Ante todo o exposto, as razões de irresignação da empresa **E. R. SOLUÇÕES INFORMÁTICA LTDA.** , inscrita no CNPJ Nº 05.778.325/0005-47, não tem como progredir, pois restaram esvaídas de quaisquer lastros fáticos e/ou jurídicos capazes de fazer valer sua vontade, não havendo, portanto, que se falar em reconsideração da decisão de **<u>aceitação da proposta de preços</u>** e **<u>habilitação</u>** da empresa **TORINO INFORMÁTICA LTDA.** , inscrita no CNPJ sob o nº 03.619.767/0005-15 para o Item 3, conforme demonstrado na presente peça.

4. DA CONCLUSÃO

Portanto, pelos fundamentos expostos, por entender que os requisitos e princípios que permeiam os atos da Administração Pública foram devidamente observados, este subscrevente decide:

a) **NEGAR provimento** aos recursos interpostos pelas empresas **E. R. SOLUÇÕES INFORMÁTICA LTDA.** , inscrita no CNPJ Nº 05.778.325/0005-47, referente ao Item 3 do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ SRP, a fim de dar seguimento ao processo, nos termos do artigo 165, da Lei nº. 14.133/2021;

Desta feita, os autos devem ser submetidos à análise e manifestação do ilustre **Ordenador de Despesas**, a fim de que, caso assim entenda, mantenha a decisão proferida por este Pregoeiro, segundo inteligência do §2º, do artigo 165, da Lei nº. 14.133/2021.

Manaus, 01 de setembro de 2025.

Maurício Araújo Medeiros

Pregoeiro - PORTARIA 606/2025/SUBADM

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 01/09/2025, às 12:48, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1707654** e o código CRC **F7D2F4C8**.

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

RELATÓRIO DE LICITAÇÃO Nº 30.2025.CPL.1707664.2025.001317

RELATÓRIO CIRCUNSTANCIADO REFERENTE AO PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ/SRP

PROCESSO SEI Nº 2025.001317

Excelentíssimo Senhor Subprocurador-Geral de Justiça para Assuntos Administrativos,

O Pregoeiro, senhor **Maurício Araújo Medeiros**, designado por força da PORTARIA 606/2025/SUBADM, de 04/06/2025 (doc. 1640921), vem apresentar e submeter à apreciação de Vossa Excelência o **relatório circunstanciado parcial, referente ao item 3** do **Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ/SRP**, tipo **MENOR PREÇO POR ITEM**, concernente ao **Processo SEI N.º 2025.001317**, que tem por objeto o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.*

1. DA EVOLUÇÃO DOS AUTOS

A evolução dos autos ocorreu conforme descrição e datas constantes n o **Histórico do Processo 2025.001317,** disponível para consulta na rotina "Consultar Andamento".

2. DA PUBLICIDADE

O Aviso da Licitação foi publicado: no *Compras.gov*, em 11/06/2025 (doc. 1677171); no matutino local “Jornal do Commercio”, Edição n.º 44.318, de 12/06/2025 (doc. 1677170); no Diário Oficial Eletrônico do Ministério Público do Estado do Amazonas – DOMPE, Edição n.º 3101, no dia 11/06/2025 (doc. 1648705) e no sítio institucional do MPE/AM (www.mpam.mp.br).

3. DA SESSÃO PÚBLICA

3.1. Do Credenciamento – Os licitantes credenciaram-se na Secretaria de Logística e Tecnologia de Informação – SLTI, do Ministério do Planejamento, Orçamente e Gestão, através das regras do sistema *Compras.gov*, no sítio eletrônico https://www.gov.br/compras/pt-br.

3.2. Da Proposta – As propostas foram enviadas pelos licitantes, através da internet, desde 13/06/2025 até a data e hora marcadas para a abertura da sessão, a saber, dia 30/06/2025, às 10h (horário de Brasília/DF).

3.3. Da Fase de Lances – Iniciada a disputa, os interessados tiveram a oportunidade de propor, em lances, condições mais favoráveis que as primeiras, o que ocorreu de fato, encerrando-se a fase com propostas mais vantajosas para a Administração, conforme registrado nos **Termos de Julgamento da Sessão** (doc. 1676291), para o Item 1; **Termos de Julgamento da Sessão** (doc. 1676292), para o Item 2; e **Termos de Julgamento da Sessão** (doc. 1676293), para o Item 3.

3.4. Da Aceitação das Propostas – Logo em seguida, o Pregoeiro convocou os licitantes mais bem colocadas na ordem de classificação dos lances, para envio de suas propostas ajustadas aos seus últimos lances, acompanhadas dos documentos complementares, para análise.

Uma vez observado o cumprimento dos prazos fixados e, também, dos aspectos formais reclamados pela Instituição, e diante da necessidade de análise técnica das propostas apresentadas, foram os documentos submetidos ao exame d o **Setor de Infraestrutura e Telecomunicação - SIET,** para análise e manifestação, nos termos do item 10.2 do instrumento convocatório (doc. 1647931).

Após algumas desclassificações de propostas, nos termos expostos nos **Termos de Julgamento da Sessão** supramencionados, com base nas análises técnicas realizadas pelo **Setor de Infraestrutura e Telecomunicação - SIET (**Parecer Nº 26.2025.SIET.1679784.2025.001317, Parecer Nº 92.2025.DTIC.1683372.2025.001317 e Parecer Nº 27.2025.SIET.1686055.2025.001317 para o Item 3), o Pregoeiro, com auxílio da equipe de apoio, promoveu à **aceitação** da seguinte proposta apresentada pelo licitante **TORINO INFORMÁTICA LTDA.**, CNPJ (MF) n.º 03.619.767/0005-15, abaixo elencada:

- **Item 3 (doc's. 1685870)** no Valor Unitário de **R$ 8.250,00** (*oito mil duzentos e cinquenta reais*) e Valor Total de **R$ 2.475.000,00** (*dois milhões quatrocentos e setenta e cinco mil reais*)**.**

3.5. Da Habilitação – Dando regular prosseguimento ao feito, o Pregoeiro e equipe de apoio passaram à verificação dos documentos de habilitação do Licitante acima destacada (doc. 1711813).

Desta feita, procedeu-se à fase de julgamento das condições de habilitação (doc. 1676241), utilizando-se, inclusive, das informações do **Sistema de Cadastro de Fornecedores – SICAF** do Compras.gov, verificando-se, sobretudo, as condições do licitante quanto à ausência de sanções pela Administração Pública, não sendo constatados registros que indicassem restrições à contratação.

Sobre o exame das condições do licitante, verificou-se à ausência de sanções pela Administração Pública, no SICAF do *Comprasnet*, bem como na Relação de Empresas com Sanção Administrativa em Vigor, do **TRIBUNAL DE CONTAS DO ESTADO DO AMAZONAS – TCE**, na Relação de Licitantes Inidôneos do **TRIBUNAL DE CONTAS DA UNIÃO – TCU,** na Lista de Empresas Suspensas/Impedidas da **COMISSÃO GERAL DE LICITAÇÃO DO ESTADO DO AMAZONAS – CGL** , no Cadastro Nacional de Empresas Inidôneas e Suspensas (CEIS), da **CONTROLADORIA GERAL DA UNIÃO – CGU**, no Cadastro Nacional de Condenações Civis por Ato de Improbidade Administrativa (CNCIA) do **CONSELHO NACIONAL DE JUSTIÇA – CNJ** e na Relação de pessoas jurídicas impedidas de contratar com a Administração Pública da **SEFAZ-AM**, **não** sendo constatados registros que indicassem restrições à contratação.

Além disso, o Pregoeiro e equipe de apoio verificaram a autenticidade das certidões negativa (ou positiva com efeitos de negativa) de débitos mediante SICAF, bem como da de ausência de distribuição de feitos de falência ou recuperação judicial, junto à Justiça Estadual de domicílio do licitante. De igual modo, procedeu-se com os demais documentos de habilitação das interessadas que permitiam a convalidação eletrônica, conforme consta dos autos.

Cabe registrar que, com o objetivo de atender aos princípios de simplificação e racionalização de serviços públicos digitais, presentes nas Leis nº 12.965/14 e nº 13.460/18, e no Decreto nº 8.638/16, o **Tribunal de Contas da União** passou a disponibilizar ferramenta que permite a consulta consolidada de pessoas jurídicas que reúne, em relatório único, os Licitantes Inidôneos do TCU, CNIA - Cadastro Nacional de Condenações Cíveis por Ato de Improbidade Administrativa e Inelegibilidade do CNJ; Cadastro Nacional de Empresas Inidôneas e Suspensas e CNEP - Cadastro Nacional de Empresas Punidas ambos do Portal da Transparência. Assim, a Pregoeiro promoveu a juntada da **CONSULTA CONSOLIDADA DE PESSOA JURÍDICA** do licitante aos autos.

Isto posto, concluída a análise dos documentos habilitatórios, conforme item 11 do instrumento convocatório, procedeu-se à **HABILITAÇÃO** do licitante **TORINO INFORMÁTICA LTDA.** , CNPJ (MF) n.º 03.619.767/0005-15, declarando-a vencedora, nos termos do subitem 11.32 do Instrumento Convocatório.

4. DOS RECURSOS

Passo seguinte, ao encerrar a sessão pública, este Pregoeiro constatou que o licitante **E. R. SOLUÇÕES INFORMÁTICA LTDA.** , inscrita no CNPJ Nº 05.778.325/0005-47 manifestou intenção de interpor recurso em relação ao **Item 3**.

Em resumo, pelos fundamentos expostos na **Decisão Nº 35.2025.CPL.1707654.2025.001317,** este subscrevente decidiu:

a) Após exame das razões recursais apresentadas pelas empresas *susomencionada* no ***subitem "a",*** este Pregoeiro informa as motivações que culminaram nas decisões outrora prolatadas, para, no mérito, **NEGAR PROVIMENTO** ao recurso interposto pela empresa **E. R. SOLUÇÕES INFORMÁTICA LTDA.** , inscrita no CNPJ Nº 05.778.325/0005-47**,** nos termos artigo 165 da Lei n.º 14.133/2021.

5. DA ECONOMICIDADE

Destaque-se que o valor estimado para aquisição do objeto deste certame foi de **R$ 16.631.944,90** (*dezesseis milhões, seiscentos e trinta e um mil novecentos e quarenta e quatro reais e noventa centavos*), conforme **Quadro - Resumo do Processo de Compra Nº 195.2025.SCOMS.1609045.2025.001317**.

Por se tratar de um relatório parcial da sessão do **Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ/SRP** referente ao Item 3, considerando o valor total estimado para a contratação do mencionado item, temos o total de **R$ 3.615.957,00** (*três milhões, seiscentos e quinze mil novecentos e cinquenta e sete reais*), conforme o **Quadro - Resumo do Processo de Compra Nº 195.2025.SCOMS**.

Considerando o valor total a ser adjudicado para o Item 3 de **R$ 2.475.000,00** (dois milhões quatrocentos e setenta e cinco mil reais)**,** a realização deste Pregão significou uma **economia parcial de R$ 1.140.957** (*um milhão, cento e quarenta mil novecentos e cinquenta e sete reais*), ou seja, uma **redução de aproximadamente 31,55% do valor parcial estimado pela Administração**.

Por fim, considerando o Relatório de Licitação Nº 23.2025.CPL.1676202.2025.001317 e o presente relatório, o valor total a ser adjudicado para o objeto do **Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ/SRP (Itens 1, 2, 3 e 4)**, no montante de **R$ 13.709.800,00** (*treze milhões, setecentos e nove mil e oitocentos reais*), a realização deste Pregão significou uma **economia total de R$ 2.922.144,90** (*dois milhões, novecentos e vinte e dois mil cento e quarenta e quatro reais e noventa centavos*), ou seja, uma **redução de aproximadamente 17,86% do valor total estimado pela Administração**.

É o Relatório.

Manaus, 01 de setembro de 2025.

Maurício Araújo Medeiros

Pregoeiro - PORTARIA 606/2025/SUBADM

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 01/09/2025, às 15:47, conforme art. 1º, III, "b", da Lei 11.419/2006.

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MINUTA

MINUTA Nº 1707676

*** MINUTA DE DOCUMENTO**

PROCESSO SEI N.º 2025.001317

Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP

A D J U DI C A Ç Ã O E H O M O L O G A Ç Ã O

C O N S I D E R A N D O a solicitação constante do Ofício Nº 41.2025.DTIC.1566526.2025.001317, bem como o teor do Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317 e Anexos;

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 21/07/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a *formação de ata de registro de preços para aquisição de gêneros alimentícios (açúcar, café e leite) a serem disponibilizados pelo Almoxarifado, localizado no edifício-sede da PGJ, a fim de garantir o aprimoramento da distribuição dos bens de consumo existentes em estoque, melhorando a qualidade de atendimento das demandas das diversas unidades da Procuradoria-Geral de Justiça, por um período estimado de 12 meses,* quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos*;*

CONSIDERANDO a aceitação da proposta de preço e habilitação da empresa **TORINO INFORMÁTICA LTDA.**, CNPJ (MF) n.º 03.619.767/0005-15, para o **Item 3** - no Valor Total de **R$ 2.475.000,00** (*dois milhões quatrocentos e setenta e cinco mil reais*);

CONSIDERANDO o Relatório Parcial de Licitação Nº 30.2025.CPL.1707664.2025.001317, referente ao Item 3, no qual consta que a realização do Pregão significou uma economia de **R$ 1.140.957** (*um milhão, cento e quarenta mil novecentos e cinquenta e sete reais*), ou seja, uma **redução de aproximadamente 31,55% do valor parcial estimado pela Administração**.

CONSIDERANDO o teor da Lei Federal N.º 14.133, de 01.04.2021 e do Ato n.º 008/2024/PGJ;

CONSIDERANDO a interposição de Recurso por parte da empresa **E. R. SOLUÇÕES INFORMÁTICA LTDA.**, inscrita no CNPJ Nº 05.778.325/0005-47;

CONSIDERANDO o teor da **DECISÃO Nº 35.2025.CPL.1707654.2025.001317** para **NEGAR provimento** ao recurso interposto pela empresa suso mencionada;

CONSIDERANDO o teor da **DECISÃO Nº XXX.2025.XXAJ-SUBADM (XXX**), através da qual foi mantida a **DECISÃO Nº 35.2025.CPL.1707654.2025.001317**, proferida pelo(a) Sr(a) Pregoeiro(a), segundo inteligência do artigo 71 c/c artigo 165, da Lei n° 14.133/2021;

R E S O L V E:

I – **ADJUDICAR** o objeto do certame à empresa **TORINO INFORMÁTICA LTDA.**, CNPJ (MF) n.º 03.619.767/0005-15, para o Item 3, no Valor Total de **R$ 2.475.000,00** (*dois milhões quatrocentos e setenta e cinco mil reais*);

II - **HOMOLOGAR** o resultado parcial do procedimento licitatório, referente ao item 3 do **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ-SRP**, em consonância com os Termos de Julgamentos gerados pelo Sistema Compras.gov e o Relatório Parcial de Licitação Nº 30.2025.CPL.1707664.2025.001317 e suas documentações complementares;

III – À **COMISSÃO PERMANENTE DE LICITAÇÃO – CPL**, para as providências cabíveis;

IV – Após, ao **SETOR DE COMPRAS E SERVIÇOS** - **SCOMS,** para prosseguimento do feito.

Cientifique-se. Publique-se. Cumpra-se.

GABINETE DO SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus (AM), XX de setembro de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos

Ordenador de Despesas

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 01/09/2025, às 15:48, conforme art. 1º, III, "b", da Lei 11.419/2006.

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MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

DESPACHO Nº 61.2025.CPL.1712118.2025.001317

PROCESSO SEI N.º 2025.001317

Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ

Objeto*:* Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, **estações de trabalho e computadores portáteis**, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.

Considerando a realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ SRP, iniciado no dia 30 de junho e encerrado no dia 05 de agosto do corrente ano;

Considerando a aceitação da proposta de preços e das condições de habilitação do licitante **TORINO INFORMÁTICA LTDA.**, CNPJ (MF) n.º 03.619.767/0005-15 para o Item 3;

Considerando a interposição de Recurso, por parte da empresa **E. R. SOLUÇÕES INFORMÁTICA LTDA.**, inscrita no CNPJ Nº 05.778.325/0005-47, no prazo e condições de que trata o artigo 165 da Lei Federal n.º 14.133/2021;

CONSIDERANDO o teor da **DECISÃO Nº 35.2025.CPL.1707654.2025.001317** para a **NEGAR provimento** ao recurso interposto pela empresa suso mencionada;

Considerando que, dentre os requisitos de validade, o resultado do certame necessita da adjudicação e homologação pelo Ordenador de Despesas desta Procuradoria-Geral de Justiça, nos termos da Lei Federal N.º 14.133, de 01.04.2021, e do Ato n.º 008/2024/PGJ;

Encaminhem-se os autos do Procedimento Interno ao Exmo. Sr. Dr. **SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS**, para análise e pronunciamento decisório quanto ao teor

da **DECISÃO Nº 35.2025.CPL.1707654.2025.001317,** a fim de que, caso assim entenda, mantenha a decisão proferida pelo Sr. Pregoeiro, segundo inteligência do artigo 165, § 2º, da Lei n.° 14.133/2021, e proceda, se entender cabível, à adjudicação e homologação do objeto do certame, nos termos do artigo 71 da Lei n.° 14.133/21.

Manaus, 01 de setembro de 2025.

Maurício Araújo Medeiros

Pregoeiro - PORTARIA N° 606/2025/SUBADM

Documento assinado eletronicamente por **Maurício Araújo Medeiros**, **Membro da Comissão Permanente de Licitação - CPL**, em 01/09/2025, às 15:47, conforme art. 1º, III, "b", da Lei 11.419/2006.

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MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

DECISÃO Nº 7.2025.01AJ-SUBADM.1713818.2025.001317

PROCESSO N° 2025.001317

ASSUNTO: Recurso interposto pela empresa **E. R. SOLUÇÕES INFORMÁTICA LTDA.**, inscrita no CNPJ Nº 05.778.325/0005-47, no interesse do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ, pelo qual se busca o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses*, conforme especificações e condições constantes do Edital do certame e seus anexos

I. DO RELATÓRIO

Trata-se do **Ofício 41 (1566526),** de lavra do **Sr. Eudo de Lima Assis Júnior**, **Diretor(a) de Tecnologia de Informação e Comunicação - DTIC,** por onde são encaminhados o **Estudo Técnico Preliminar - ETP 2 (1525120)** e o **Termo de Referência 2 (1525128),** que tem por objeto a formação de registro de preços para eventual fornecimento de equipamentos de informática: **estações de trabalho e computadores portáteis**, com garantia e assistência técnica on-site, visando atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 (doze) meses**,** conforme especificações, quantitativos e prazos contidos no documento. A unidade técnica, informa ainda que no "*planejamento da contratação foram* ***identificados a necessidade de renovação média de 57% do parque computacional****, considerando sua obsolescência, a supressão do déficit dos dispositivos alimentadores de energia, bem como o atendimento de demandas específicas explanadas no Estudo Técnico Preliminar - ETP Nº 2.2025.DTIC.1525120.2025.001317*".

Neste momento processual, a Comissão Permanente de Licitação acostou aos autos o **Relatório de Licitação 30 (1707664) , relatório circunstanciado parcial, referente ao item 3** d o **Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ/SRP**, tipo **MENOR PREÇO POR ITEM**, concernente ao **Processo SEI N.º 2025.001317**, que tem por objeto o *registro de preços para eventual fornecimento de equipamentos de informática, quais sejam,* ***estações de***

***trabalho e computadores portáteis**, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.*

Informa o Pregoeiro que, ao encerrar a sessão pública, a licitante **E. R. SOLUÇÕES INFORMÁTICA LTDA.** , inscrita no CNPJ Nº 05.778.325/0005-47, manifestou intenção de interpor recurso em relação ao **Item 3**.

Das razões recursais

No dia 08/08/2025, a empresa irresignada anexou ao Sistema Compras.gov suas razões recursais, as quais foram apensadas aos autos e também disponibilizadas no Portal do MP-AM, em inteiro teor, na página eletrônica de acompanhamento deste certame (pelo link PE 94010/2025/CPL/MP/PGJ-SRP – Estações de trabalho e computadores portáteis), arguindo, em suma, supostas irregularidades na proposta de preços da empresa recorrida - TORINO INFORMÁTICA LTDA., CNPJ Nº 03.619.767/0005-15, bem como na aceitação da oferta vencedora, conforme transcrição abaixo:

> **III) DO DIREITO:**
>
> Em uma análise fática, é possível concluir que a **RECORRIDA não cumpriu** com todas as especificações do Edital. Certo é que a Administração Pública não pode quedar-se às vontades e aos interesses dos particulares, mas deve trabalhar em prol da satisfação dos interesses coletivos, visando garantir a melhor contratação possível para a Administração Pública, considerando a conjugação do pleno atendimento às exigências com o menor preço.
>
> **IV) DAS CONSIDERAÇÕES E REQUERIMENTOS FINAIS**
>
> Como demonstrado acima, a empresa **RECORRIDA não atende** aos requisitos mínimos necessários exigidos no edital.
>
> Por todo exposto, a **E.R. SOLUÇÕES INFORMÁTICA LTDA** requer, respeitosamente, que sejam apreciados os concretos e irrefutáveis argumentos apresentados neste recurso, para ao final julgar totalmente procedente o Recurso proposto pela licitante E.R. Soluções Informática LTDA.
>
> Isto é o que se impõe, pela estrita observância aos ditameslegais e aos princípios basilares!
>
> Termos em que, pede deferimento.
>
> Julia Barbosa Avelar
>
> Vendas - Governo

Das Contrarrazões

Sendo assim, observada a data final, a empresa **TORINO INFORMÁTICA LTDA.** , inscrita no CNPJ sob o nº 03.619.767/0005-15, apresentou, pontualmente, suas CONTRARRAZÕES (doc. 1697800), as quais foram apensadas aos autos e também disponibilizadas, em inteiro teor, na página eletrônica de acompanhamento deste certame (pelo link PE 94010/2025/CPL/MP/PGJ-SRP – Estações de trabalho e computadores portáteis), abaixo detalhadas:

> [...]
>
> Com o devido respeito, não há como prosperar o pedido formulado no recurso da E. R. SOLUÇÕES INFORMÁTICA LTDA., que conforme se está vendo pormenorizado ao longo desta contrarrazão, esta dissociada da veracidade dos fatos, e tem por objetivo claro e inequívoco tumultuar o presente certame, pois ao trazer “dúvidas” que não existem no mercado tecnológico em uma licitação de tecnologia com o suporte de uma equipe técnica capacitada, é, no mínimo, irresponsável, pois o processo licitatório está suspenso até decisão final desta D. Comissão, e ainda, estamos tendo que esclarecer conceitos básicos e fundamentais para qualquer técnico da área de informática, que deveriam fazer parte do cotidiano da RECORRENTE.
>
> Sem maiores delongas, é evidente o objetivo único e exclusivo desta RECORRENTE em tumultuar o processo licitatório em questão trazendo à baila questionamentos tão estapafúrdios, como os apresentados por ela em sua peça recursal.
>
> Assim, sem maior morosidade, em razão do quanto exposto e demonstrado, de rigor é o provimento da presente contrarrazão para manter a CLASSIFICAÇÃO desta TORINO, nos termos registrados no processo licitatório em epígrafe.
>
> Não sobrevindo este entendimento, requer-se o encaminhamento para a Autoridade Superior competente, para que aprecie seu mérito, sendo esta a única forma de se alcançar a tão almejada Justiça!!!
>
> Rodrigo do Amaral Rissio
>
> RG: 27.9XX.XXX-6 SSP/SP
>
> Sócio/ Procurador

Análise do Pregoeiro

Em sua decisão, o Pregoeiro apontou que:

> Da análise das impugnações colacionadas, infere-se que as solicitações referem-se, especificamente, às disposições estabelecidas no **Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317**, Anexo I e parte integrante do Edital do **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ-SRP.** Nesse sentido, as peças foram encaminhadas ao setor técnico demandante - Setor de Infraestrututa e Telecomunicações - SIET, que se manifestou de forma sintética, porém, abrangente, nos

termos do **Parecer Nº 28.2025.SIET.1701819.2025.001317**, transcrito abaixo:

Parecer Nº 28.2025.SIET.1701819.2025.001317

1. Relatório

Trata-se de expediente encaminhado pela CPL, a respeito de recurso apresentado pela empresa **E.R. SOLUÇÕES INFORMÁTICA LTDA.**, CNPJ Nº 05.778.325/0005-47 (doc. 1697794), e contrarrazões recursais apresentado pela empresa **TORINO INFORMÁTICA LTDA.**, CNPJ (MF) n.º 03.619.767/0005-15 (doc. 1697800), para que este SIET analise e se manifeste tecnicamente sobre o tema.

2. Fundamentação

A equipe técnica deste SIET analisou as razões de recurso apresentadas pela empresa E.R. Soluções Informática Ltda., CNPJ nº 05.778.325/0005-47 (doc. 1697794), e as contrarrazões apresentadas pela empresa Torino Informática Ltda., CNPJ nº 03.619.767/0005-15 (doc. 1697800), conforme solicitado pela Comissão Permanente de Licitação.

A análise foi realizada tomando por base:

2.1. As especificações técnicas constantes do Anexo de Especificações – Item 3 do edital;

2.2. A documentação apresentada pela empresa Torino em atendimento às diligências promovidas pelo Pregoeiro;

2.3. Os argumentos constantes nas razões recursais da E.R. e nas contrarrazões da Torino;

2.4. A legislação aplicável, notadamente a Lei nº 14.133/2021, art. 64, e o Decreto nº 10.024/2019, art. 17, inciso VI, que autorizam a promoção de diligências destinadas a sanar falhas formais, desde que não alterem a substância da proposta nem impliquem em modificação de valores;

2.5. O entendimento consolidado pelo Acórdão TCU nº 1211/2021 – Plenário, que admite a juntada de documentos comprobatórios de condições já atendidas à época da proposta, desde que ausentes apenas por falha formal ou omissão involuntária.

Dessa forma, a avaliação técnica buscou verificar a aderência da proposta da empresa Torino aos requisitos do edital, com especial atenção aos pontos questionados pela E.R. (BIOS, unidade de armazenamento, articulação da tela, leitor biométrico, mochila de transporte), além de confirmar o atendimento dos demais requisitos principais (processador, memória RAM, conectividade, sistema operacional, webcam e softwares complementares).

3. Matriz de Aderência Técnica

Requisito editalício	Conformidade	Observações técnicas

Requisito editalício	Conformidade	Observações técnicas
BIOS – suporte a logotipo customizável de fábrica (item 2.13)	**Atende**	O modelo ofertado dispõe de recurso de customização corporativa de BIOS, já utilizado em fornecimentos anteriores. Documentação apresentada pelo fabricante HP confirma a aderência.
Unidade de armazenamento – SSD M.2 PCIe 4.0 NVMe ≥ 256GB, ≥ 1200 MB/s, instalado de fábrica e homologado (item 5)	**Atende**	Foi apresentado datasheet do modelo Samsung PM9B1, homologado pela HP. Considerando que o fabricante pode adotar diferentes fornecedores homologados, será realizada a verificação pela equipe técnica (fiscalização) no recebimento para assegurar o atendimento integral ao requisito.
Articulação da tela em 180° (item 14.3)	**Atende**	A especificação técnica do fabricante indica ângulo de abertura de 177° ± 3°, compatível com a exigência de 180°.
Leitor biométrico integrado (item 14.6)	**Atende**	Embora o catálogo do fabricante apresente o recurso como opcional, a empresa declarou o atendimento integral ao edital.

Requisito editalício	Conformidade	Observações técnicas
Webcam integrada, FHD, com mecanismo de privacidade (item 13)	**Atende**	O modelo ofertado contempla webcam compatível com as exigências, sem ressalvas.
Mochila/case de transporte (item 18.2)	**Atende**	O acessório teve sua especificação detalhada em diligência e foi aceito como em conformidade com o edital.
Demais requisitos principais (processador ≥ 6 núcleos, RAM 16GB DDR5, sistema operacional Windows 11 Pro OEM, conectividade, portas USB/HDMI, Wi-Fi 6, bateria, softwares de controle e certificações)	**Atende**	Documentação apresentada confirma a aderência aos requisitos principais do Termo de Referência.

4. <u>Conclusão</u>

Todos os itens questionados em recurso apresentaram conformidade, alguns após diligências realizadas junto ao fornecedor pela equipe técnica do MPAM. Não foram constatadas alterações substanciais na proposta ou de valores com as diligências.

É o parecer.

Manaus, 25 de agosto de 2025.

FRANCISCO ELVISLÂNIO PEREIRA
Agente de apoio - Manutenção/Informática

CARLOS ALEXANDRE DOS SANTOS NOGUEIRA
Chefe do Setor de Infraestrututa e Telecomunicações

Fundamentado no parecer exposto acima, afere-se que não há divergência técnica quanto ao Item 3 ofertado e as exigências do Instrumento Convocatório referentes ao item, não se fazendo necessárias maiores digressões.

Quanto às oportunidades concedidas à recorrida,

relembro que o Edital do certame prevê, em seu subitem 10.7. c/c 10.7.1., o seguinte:

10.7. Erros no preenchimento da planilha não constituem motivo para a desclassificação da proposta. A planilha poderá ser ajustada pelo fornecedor, no prazo indicado pelo sistema, desde que não haja majoração do preço.

10.7.1. Verificada a presença de erros sanáveis na proposta de preços, **o Pregoeiro ou Administração poderá realizar diligência junto à Licitante para a devida correção apenas das falhas apontadas, limitado a 3 (três) oportunidades**, vedada a juntada de documento novo.

Nesse sentido, as oportunidades foram concedidas com lastro no Instrumento Convocatório, bem como as alterações, em sede de diligências, de acordo com o parecer técnico supracitado, não representaram alteração da proposta vencedora, mas esclarecimento e complementação das informações anteriormente apresentadas, sem majoração de preço.

Ante todo o exposto, as razões de irresignação da empresa **E. R. SOLUÇÕES INFORMÁTICA LTDA.**, inscrita no CNPJ Nº 05.778.325/0005-47, não tem como progredir, pois restaram esvaídas de quaisquer lastros fáticos e/ou jurídicos capazes de fazer valer sua vontade, não havendo, portanto, que se falar em reconsideração da decisão de **aceitação da proposta de preços** e **habilitação** da empresa **TORINO INFORMÁTICA LTDA.**, inscrita no CNPJ sob o nº 03.619.767/0005-15 para o Item 3, conforme demonstrado na presente peça.

4. DA CONCLUSÃO

Portanto, pelos fundamentos expostos, por entender que os requisitos e princípios que permeiam os atos da Administração Pública foram devidamente observados, este subscrevente decide:

a) **NEGAR provimento** aos recursos interpostos pelas empresas **E. R. SOLUÇÕES INFORMÁTICA LTDA.**, inscrita no CNPJ Nº 05.778.325/0005-47, referente ao Item 3 do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ SRP, a fim de dar seguimento ao processo, nos termos do artigo 165, da Lei nº. 14.133/2021;

É o relatório. Passo a decisão.

II. DOS FUNDAMENTOS

O presente processo licitatório, na modalidade Pregão Eletrônico, seguiu o critério de julgamento menor preço por item, conforme previsto no art. 33, inciso I, da Lei nº 14.133/2021, com o objetivo de garantir a contratação mais vantajosa para a Administração Pública, nos termos do art. 11, inciso I.

No tocante à admissibilidade do presente recurso, cumpre registrar que o direito à interposição encontra respaldo no art. 165 da Lei nº 14.133/2021, que prevê, no inciso I, alíneas “b” e “c”, a possibilidade de impugnação administrativa contra o julgamento das propostas e os atos de habilitação ou inabilitação, desde que observados os prazos legais.

Conforme §1º do referido artigo, a intenção de recorrer deve ser manifestada de forma imediata, sob pena de preclusão, sendo o prazo para apresentação das razões recursais de 3 (três) dias úteis, contados da intimação ou da lavratura da respectiva ata. Ainda nos termos da legislação aplicável, o recurso deve ser dirigido à autoridade que proferiu a decisão recorrida, que poderá exercer juízo de retratação no prazo de 3 (três) dias úteis ou, não sendo o caso, encaminhá-lo à autoridade superior para decisão final no prazo de até 10 (dez) dias úteis, conforme §2º do dispositivo supracitado.

Deste modo, verificada a tempestividade e a regular manifestação da intenção recursal, impõe-se a análise do mérito do recurso interposto.

Do recurso de E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47, na fase de julgamento:

Na fase de aceitação de propostas, a empresa retromencionada argumentou, em suas razões recursais, que:

i) a Recorrida alterou sua proposta comercial diversas vezes, incluindo serviços que não constavam na proposta originalmente apresentada;

ii) a inclusão de novos serviços à proposta, após sua apresentação, configura inequívoca alteração de seu conteúdo substancial, indo muito além de meras falhas formais ou ausência de documentos comprobatórios de condição preexistente;

iii) A Recorrida não apresentou em sua proposta qual o modelo e marca ofertado da Mochila, não sendo possível a comprovação de que este item atenderá ao que é exigido no edital.

O cerne do recurso interposto pela **Recorrente**, na presente hipótese, reside na alegação de violação ao princípio da vinculação ao edital, sob o argumento de que a atuação do Pregoeiro teria extrapolado os limites estabelecidos na cláusula 25.3.1 do instrumento convocatório. Sustenta-se, em síntese, que foram realizadas diligências em desacordo com os parâmetros previamente definidos no edital. Ocorre que a cláusula em questão, ao contrário do que alega a recorrente, dispõe expressamente:

25.3.1. O pregoeiro, durante as fases de julgamento das

> propostas e/ou habilitação, deve sanear eventuais erros ou falhas que não alterem a substância das propostas, dos documentos e sua validade jurídica, mediante decisão fundamentada, registrada em ata e acessível aos licitantes, sendo que a vedação à inclusão de novo documento, prevista no art. 64 da Nova Lei de Licitações (Lei 14.133/2021), não alcança documento ausente, comprobatório de condição atendida pelo licitante quando apresentou sua proposta, que não foi juntado com os demais comprovantes de habilitação e/ou da proposta, por equívoco ou falha, o qual deverá ser solicitado e avaliado pelo pregoeiro. (Acórdão TCU 1211/2021 - Plenário, relator Ministro Walton Alencar Rodrigues).

Ao apresentar suas contrarrazões, a Recorrida sustentou que:

i) Em nenhum momento foi alterada a proposta, pois foi ofertado o equipamento HP 640 G11 que atende integralmente o que o edital solicita;

ii) O trecho da carta do fabricante HP demonstra que os equipamentos suportam e podem ser realizadas customizações;

ii) Desde a nossa proposta inicial até a final, o SSD não foi alterado, que será entregue um SSD que atende ao solicitado. É de conhecimento comum no mercado que os fabricantes utilizam diversos fornecedores para atender várias partes e peças de seus equipamentos, desde que eles atendam os requisitos mínimos;

iv) Os fabricantes dos equipamentos, não são indústria de SSD, eles capacitam e homologam itens para equiparem seus equipamentos, ou a LENOVO, DELL e HP produzem SSDs? Não, eles não são indústria desse componente, e sim, homologam esses componentes para seus equipamentos;

v) não existe 1 único fabricante de SSD no mercado para atender toda a demanda de produção de computadores e notebooks no mercado, assim, as Multinacionais como HP, DELL e LENOVO, adquirem de diversos fabricantes e homologam esses itens para seus equipamentos;

vi) Foi apresentado inclusive documento interno do Fabricante HP, com clara informação que o documento foi feito para a HP do componente SSD, com posterior comprovação de que o SSD é o homologado pela HP, e ele é utilizado em todos os modelos de equipamentos HP;

v) O catálogo do produto possui todas as configurações possíveis que ele pode ter, nesse sentido, reafirmamos que o equipamento sim possuirá o leitor de impressão digital (fingerprint), pois a partir do momento que ofertamos a proposta, aceitamos todas as condições do edital e do termo de referência.

vi) Sobre a abertura do notebook. Parece que a ER [Recorrente] também precisa de ajuda a interpretar regras básicas de matemática e física, quando é colocado 177 +- 3, quer dizer que a tela chega a 180º (177+3);

vii) Sobre a mochila. Nossa proposta contempla a mochila que atende todos os requisitos. Afinal, a mochila é um acessório do objeto principal notebook.

Dessa forma, verifica-se que os argumentos apresentados pela **Recorrida**, acompanhados de documentação técnica e fundamentação compatível com as práticas de mercado, demonstram esforço em comprovar a aderência de sua proposta às exigências do edital, o que, somado à prerrogativa do Pregoeiro de sanar falhas que não comprometam a substância da proposta (cláusula 25.3.1), contribui para afastar a alegação de violação ao princípio da vinculação ao instrumento convocatório.

O pregoeiro, ao realizar sua análise, destacou que:

> i) Da análise das impugnações colacionadas, infere-se que as solicitações referem-se, especificamente, às disposições estabelecidas no **Termo de Referência Nº 2.2025.DTIC. 1525128.2025.001317**, Anexo I e parte integrante do Edital do **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ-SRP.** Nesse sentido, as peças foram encaminhadas ao setor técnico demandante - Setor de Infraestrututa e Telecomunicações - SIET, que se manifestou de forma sintética, porém, abrangente, nos termos do **Parecer Nº 28.2025.SIET.1701819.2025.001317;**
>
> ii) Fundamentado no parecer exposto acima, afere-se que não há divergência técnica quanto ao Item 3 ofertado e as exigências do Instrumento Convocatório referentes ao item, não se fazendo necessárias maiores digressões**;**
>
> iii) Quanto às oportunidades concedidas à recorrida, relembro que o Edital do certame prevê, em seu subitem 10.7. c/c 10.7.1.;
>
> iv) Nesse sentido, as oportunidades foram concedidas com lastro no Instrumento Convocatório, bem como as alterações, em sede de diligências, de acordo com o parecer técnico supracitado, não representaram alteração da proposta vencedora, mas esclarecimento e complementação das informações anteriormente apresentadas, sem majoração de preço.

Nesta senda, o **Ato PGJ nº 008/2024**, que regulamenta a aplicação da Lei nº 14.133/2021 no âmbito do MPAM, assegura em art. 55, inciso IV, que o Pregoeiro deve fazer a verificação da propostas e proceder a desclassificação daquelas que não estejam em conformidade com os requisitos estabelecidos no edital, fazendo constar no sistema, de forma imediata, a fundamentação que motivou a decisão.

No caso específico, o Pregoeiro agiu em conformidade com as disposições estabelecidas no Edital do certame, que prevê expressamente o seguinte:

> **10.7. Erros no preenchimento da planilha não constituem motivo para a desclassificação da proposta.** A planilha poderá ser ajustada pelo fornecedor, no prazo indicado pelo sistema, desde que não haja majoração do preço.

> 10.7.1. Verificada a presença de erros sanáveis na proposta de preços, **o Pregoeiro ou Administração poderá realizar diligência junto à Licitante para a devida correção apenas das falhas apontadas, limitado a 3 (três) oportunidades**, vedada a juntada de documento novo.
>
> (...)
>
> 25.3. É facultada ao pregoeiro ou autoridade superior, em qualquer fase da licitação, a promoção de diligência destinada a esclarecer ou complementar a instrução do processo.
>
> 25.3.1. O pregoeiro, durante as fases de julgamento das propostas e/ou habilitação, deve sanear eventuais erros ou falhas que não alterem a substância das propostas, dos documentos e sua validade jurídica, mediante decisão fundamentada, registrada em ata e acessível aos licitantes, sendo que a vedação à inclusão de novo documento, prevista no art. 64 da Nova Lei de Licitações (Lei 14.133/2021), não alcança documento ausente, comprobatório de condição atendida pelo licitante quando apresentou sua proposta, que não foi juntado com os demais comprovantes de habilitação e/ou da proposta, por equívoco ou falha, o qual deverá ser solicitado e avaliado pelo pregoeiro. (Acórdão TCU 1211/2021 - Plenário, relator Ministro Walton Alencar Rodrigues).

Pela leitura das cláusulas mencionadas, a análise conduzida pelo Pregoeiro considerou improcedentes os argumentos apresentados pela Recorrente, tendo em vista que o edital do certame autoriza expressamente a realização de diligências destinadas ao saneamento de falhas na proposta da licitante melhor classificada. Observando os princípios do formalismo moderado e da busca da proposta mais vantajosa, a atuação do Pregoeiro foi legítima e devidamente respaldada nas cláusulas 10.7 e 25.3 do instrumento convocatório, bem como no entendimento consolidado pelo Tribunal de Contas da União (Acórdão nº 1211/2021 – Plenário).

Ademais, nos termos do precedente do Tribunal de Contas da União (Acórdão 1811/2014-Plenário) "não restando configurada a lesão à obtenção da melhor proposta, não se configura a nulidade do ato**.** Erro no preenchimento da planilha de formação de preço do licitante não constitui motivo suficiente para a desclassificação da proposta, quando a planilha puder ser ajustada sem a necessidade de majoração do preço ofertado".

Portanto, a interpretação do pregoeiro e equipe de apoio representou a concreta aplicação do **princípio do formalismo moderado**, especificamente no Processo licitatório.

Sobre o princípio do formalismo moderado, colho do ensinamento de Felipe Dalenogare Alves e Marilene Carneiro Matos (2025, p. 82)[1]**:**

> A Administração deve atuar de forma a preservar a participação de licitantes que apresentem propostas ou documentos contendo vícios ou irregularidades sanáveis, de forma a prestigiar o princípio do formalismo moderado

> e a máxima competitividade do certame91. Neste sentido, cabe observar que a manutenção de propostas contendo vícios sanáveis adentrou o ordenamento jurídico brasileiro, por inspiração no Direito Europeu das Contratações Públicas, mediante o art. 24 da Lei n. 12.462/2011 – Regime Diferenciado de Contratações Públicas92.
>
> Acerca do assunto, defende Adilson Abreu Dallari93 que há evidentes posicionamentos na doutrina e jurisprudência que defendem que na fase de habilitação não deve haver rigidez excessiva. O foco deve ser na finalidade dessa etapa, ou seja, verificar se o proponente possui a idoneidade necessária. Defeitos mínimos, irrelevantes para essa comprovação, não devem ser motivo de exclusão do licitante. É necessário "haver uma certa elasticidade em função do objetivo, da razão de ser da fase de habilitação; convém ao interesse público, que haja o maior número possível de participantes".

Com efeito, o Tribunal de Contas da União tem consolidado o entendimento — v.g., Acórdãos 1.217/2023-TCU-Plenário e 2.585/2024-TCU-Plenário — de que devem prevalecer o formalismo moderado e o princípio da razoabilidade no julgamento das propostas e na fase de habilitação. Busca-se, assim, evitar que o meio (análise documental) frustre o fim maior da licitação: obter a proposta mais vantajosa para a Administração. Consequentemente, o TCU orienta que não se promova a desclassificação ou a inabilitação de licitantes sem antes oportunizar a correção de falhas sanáveis, desde que demonstrada a existência dos requisitos exigidos antes da abertura do certame.

Assim, constata-se que a análise realizada pelo Pregoeiro observou os **princípios previstos no art. 37, caput, da Constituição Federal**, com especial destaque para o princípio da **legalidade**. Dessa forma, com fundamento no **art. 5º da Lei nº 14.133/2021**, verifica-se que foram atendidos os critérios de **julgamento objetivo das propostas**, **preservação da competitividade** e **seleção da proposta mais vantajosa**, em conformidade com os dispositivos legais aplicáveis e os princípios que regem as contratações públicas.

Portanto, não há amparo para a desclassificação da empresa recorrida, pois os documentos apresentados conferem segurança técnica e econômica à execução contratual, atendendo às exigências legais e editalícias.

III. DA DECISÃO

Diante do exposto e com fundamento nos **arts. 71 e 165 da Lei nº 14.133/2021**, bem como nos termos do **Ato PGJ nº 008/2024**, DECIDO:

I) CONHECER o recurso interposto pela empresa **E. R. SOLUÇÕES INFORMÁTICA LTDA.**, inscrita no CNPJ Nº 05.778.325/0005-47, por ser **tempestivo** e **preencher os requisitos legais** de admissibilidade.

II) No mérito, NEGAR PROVIMENTO a presente recurso, mantendo

a decisão do Pregoeiro que aceitou a proposta, habilitou e declarou vencedora a empresa **TORINO INFORMÁTICA LTDA.**, CNPJ (MF) n.º 03.619.767/0005-15**,** para o Item 3, no Valor Total de **R$ 2.475.000,00** (*dois milhões quatrocentos e setenta e cinco mil reais*).

À Comissão Permanente de Licitação - CPL para as providências subsequentes.

GABINETE DA SUBPROCURADORIA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus, na data de assinatura.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos

[1] ALVES, Felipe Dalenogare. Manual de Licitações e Contratos Administrativos / Felipe Dalenogare Alves, Marilene Carneiro Matos, São Paulo: Saraiva-jur, 2025.

Documento assinado eletronicamente por **André Virgílio Belota Seffair**, **Subprocurador(a)-Geral de Justiça para Assuntos Administrativos**, em 08/09/2025, às 14:36, conforme art. 1º, III, "b", da Lei 11.419/2006.

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DESPACHO Nº 799.2025.01AJ-SUBADM.1716955.2025.001317

PROCESSO SEI N.º 2025.001317

Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP

A D J U DI C A Ç Ã O E H O M O L O G A Ç Ã O

C O N S I D E R A N D O a solicitação constante do Ofício Nº 41.2025.DTIC.1566526.2025.001317, bem como o teor do Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317 e Anexos;

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 21/07/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a *formação de ata de registro de preços para aquisição de gêneros alimentícios (açúcar, café e leite) a serem disponibilizados pelo Almoxarifado, localizado no edifício-sede da PGJ, a fim de garantir o aprimoramento da distribuição dos bens de consumo existentes em estoque, melhorando a qualidade de atendimento das demandas das diversas unidades da Procuradoria-Geral de Justiça, por um período estimado de 12 meses,* quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos*;*

CONSIDERANDO a aceitação da proposta de preço e habilitação da empresa **TORINO INFORMÁTICA LTDA.** , CNPJ (MF) n.º 03.619.767/0005-15, para o **Item 3** - no Valor Total de **R$ 2.475.000,00** (*dois milhões quatrocentos e setenta e cinco mil reais*);

CONSIDERANDO o Relatório Parcial de Licitação Nº 30.2025.CPL.1707664.2025.001317, referente ao Item 3, no qual consta que a realização do Pregão significou uma economia de **R$ 1.140.957** (*um milhão, cento e quarenta mil novecentos e cinquenta e sete reais*), ou seja, uma **redução de aproximadamente 31,55% do valor parcial estimado pela Administração**.

CONSIDERANDO o teor da Lei Federal N.º 14.133, de 01.04.2021 e do Ato n.º 008/2024/PGJ;

CONSIDERANDO a interposição de Recurso por parte da empresa **E. R. SOLUÇÕES INFORMÁTICA LTDA.**, inscrita no CNPJ Nº 05.778.325/0005-47;

CONSIDERANDO o teor da **DECISÃO Nº 35.2025.CPL.1707654.2025.001317** para **NEGAR provimento** ao recurso interposto pela empresa suso mencionada;

CONSIDERANDO o teor da **DECISÃO Nº 7.2025.01AJ-SUBADM.1713818.2025.001317**, através da qual foi mantida a **DECISÃO Nº 35.2025.CPL.1707654.2025.001317**, proferida pelo(a) Sr(a) Pregoeiro(a), segundo inteligência do artigo 71 c/c artigo 165, da Lei n° 14.133/2021;

R E S O L V E:

I – **ADJUDICAR** o objeto do certame à empresa **TORINO INFORMÁTICA LTDA.**, CNPJ (MF) n.º 03.619.767/0005-15, para o Item 3, no Valor Total de **R$ 2.475.000,00** (*dois milhões quatrocentos e setenta e cinco mil reais*);

II - **HOMOLOGAR** o resultado parcial do procedimento licitatório, referente ao item 3 do **PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ-SRP**, em consonância com os Termos de Julgamentos gerados pelo Sistema Compras.gov e o Relatório Parcial de Licitação Nº 30.2025.CPL.1707664.2025.001317 e suas documentações complementares;

III – À **COMISSÃO PERMANENTE DE LICITAÇÃO – CPL**, para as providências cabíveis;

IV – Após, ao **SETOR DE COMPRAS E SERVIÇOS** - **SCOMS,** para prosseguimento do feito.

Cientifique-se. Publique-se. Cumpra-se.

GABINETE DO SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus (AM), 08 de setembro de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos
Ordenador de Despesas

Documento assinado eletronicamente por **André Virgílio Belota Seffair**, **Subprocurador(a)-Geral de Justiça para Assuntos Administrativos**, em 08/09/2025, às 14:36, conforme art. 1º, III, "b", da Lei 11.419/2006.

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MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

ERRATA Nº 5.2025.CPL.1719258.2025.001317

No texto do **DESPACHO Nº 799.2025.01AJ-SUBADM.1716955.2025.001317,** assinado em 08/09/2025, publicado no **Diário Oficial do Ministério Público do Estado do Amazonas - DOMPE AM**, Edição N.º 3159, página 9, datado de 09 de setembro de 2025, decorrente do PREGÃO ELETRÔNICO N.° 94010/2025-CPL/MP/PGJ-SRP, Processo SEI N.º 2025.001317.

ONDE SE LÊ:

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 21/07/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a *formação de ata de registro de preços para aquisição de gêneros alimentícios (açúcar, café e leite) a serem disponibilizados pelo Almoxarifado, localizado no edifício-sede da PGJ, a fim de garantir o aprimoramento da distribuição dos bens de consumo existentes em estoque, melhorando a qualidade de atendimento das demandas das diversas unidades da Procuradoria-Geral de Justiça, por um período estimado de 12 meses,* quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos*;*

LEIA-SE:

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 05/08/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a *formação de registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses,* quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos*;*

Cientifique-se. Publique-se. Cumpra-se.

GABINETE DA SUBPROCURADORA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus (AM), 10 de setembro de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR

Subprocurador-Geral de Justiça para Assuntos Administrativos

Ordenador de Despesas

Documento assinado eletronicamente por **André Virgílio Belota Seffair**, **Subprocurador(a)-Geral de Justiça para Assuntos Administrativos**, em 10/09/2025, às 13:54, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1719258** e o código CRC **A5C1D736**.

Subprocurador-Geral de Justiça para Assuntos Administrativos

ERRATA Nº 4.2025.CPL.1719255.2025.001317

No texto do DESPACHO Nº 621.2025.01AJ-SUBADM.1677976.2025.001317, assinado em 22/07/2025, publicado no Diário Oficial do Ministério Público do Estado do Amazonas - DOMPE AM, Edição N.º 3127, página 8, datado de 23 de julho de 2025, decorrente do PREGÃO ELETRÔNICO N.° 94010/2025-CPL/MP/PGJ-SRP, Processo SEI N.º 2025.001317.

ONDE SE LÊ:

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 21/07/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a formação de ata de registro de preços para aquisição de gêneros alimentícios (açúcar, café e leite) a serem disponibilizados pelo Almoxarifado, localizado no edifício-sede da PGJ, a fim de garantir o aprimoramento da distribuição dos bens de consumo existentes em estoque, melhorando a qualidade de atendimento das demandas das diversas unidades da Procuradoria-Geral de Justiça, por um período estimado de 12 meses, quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos;

LEIA-SE:

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 21/07/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a formação de registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses, quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos;

Cientifique-se. Publique-se. Cumpra-se.

GABINETE DA SUBPROCURADORA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus (AM), 10 de setembro de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos
Ordenador de Despesas

ERRATA Nº 5.2025.CPL.1719258.2025.001317

No texto do DESPACHO Nº 799.2025.01AJ-SUBADM.1716955.2025.001317, assinado em 08/09/2025, publicado no Diário Oficial do Ministério Público do Estado do Amazonas - DOMPE AM, Edição N.º 3159, página 9, datado de 09 de setembro de 2025, decorrente do PREGÃO ELETRÔNICO N.° 94010/2025-CPL/MP/PGJ-SRP, Processo SEI N.º 2025.001317.

ONDE SE LÊ:

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 21/07/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a formação de ata de registro de preços para aquisição de gêneros alimentícios (açúcar, café e leite) a serem disponibilizados pelo Almoxarifado, localizado no edifício-sede da PGJ, a fim de garantir o aprimoramento da distribuição dos bens de consumo existentes em estoque, melhorando a qualidade de atendimento das demandas das diversas unidades da Procuradoria-Geral de Justiça, por um período estimado de 12 meses, quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos;

LEIA-SE:

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 05/08/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a formação de registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses, quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos;

Cientifique-se. Publique-se. Cumpra-se.

GABINETE DA SUBPROCURADORA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus (AM), 10 de setembro de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos
Ordenador de Despesas

DESPACHO Nº 804.2025.01AJ-SUBADM.1718714.2024.013232

PROCESSO SEI n.º 2024.013232
Pregão Eletrônico n.º 94.008/2025-CPL/MP/PGJ - SRP

ADJUDICAÇÃO E HOMOLOGAÇÃO

CONSIDERANDO a solicitação constante do Memorando n.º 134.2024.SAL.1346604.2024.013232, retificado por meio do Memorando Nº 142.2025.SAL.1618715.2024.013232, bem como o teor do Termo de Referência Nº 4.2025.SAL.1618626.2024.013232 e seus anexos;

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.008/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 04/06/2025 a 03/09/2025, sobretudo, as ponderações do relatório circunstanciado de apreciação do certame de referência, tendo por objeto registro de preço destinado à

PROCURADORIA-GERAL DE JUSTIÇA

Procuradora-Geral de Justiça:
Leda Mara Nascimento Albuquerque
Subprocuradora-Geral de Justiça para Assuntos Jurídicos e Institucionais:
Anabel Vitória Pereira Mendonça de Souza
Subprocurador-Geral de Justiça para Assuntos Administrativos:
André Virgílio Belota Seffair
Corregedora-Geral do Ministério Público:
Silvana Nobre de Lima Cabral
Secretária-Geral do Ministério Público:
Wandete de Oliveira Netto

PROCURADORES DE JUSTIÇA

Câmaras Cíveis
Elvys de Paula Freitas
Sandra Cal Oliveira
Jussara Maria Pordeus e Silva
Mara Nóbia Albuquerque da Cunha
Suzete Maria dos Santos
Nilda Silva de Sousa
Delisa Olívia Vieiralves Ferreira
Jorge Michel Ayres Martins
Anabel Vitória Pereira Mendonça de Souza
Marco Aurélio Lisciotto

Câmaras Criminais
Carlos Lélio Lauria Ferreira
Marlene Franco da Silva
Mauro Roberto Veras Bezerra
Sarah Pirangy de Souza
Aguinelo Balbi Júnior
Liani Mônica Guedes de Freitas Rodrigues
Adelton Albuquerque Matos

Câmaras Reunidas
Karla Fregapani Leite
Públio Caio Bessa Cyrino
Sílvia Abdala Tuma
José Bernardo Ferreira Júnior
Neyde Regina Demósthenes Trindade
Silvana Nobre de Lima Cabral

CONSELHO SUPERIOR

Leda Mara Nascimento Albuquerque (Presidente)
Silvana Nobre de Lima Cabral
Mara Nóbia Albuquerque da Cunha
Adelton Albuquerque Matos
Elvys de Paula Freitas
Jorge Michel Ayres Martins
Nilda Silva de Sousa

OUVIDORIA
Sílvia Abdala Tuma

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

CERTIDÃO Nº 831.2025.SUBADM.1717530.2025.001317

Certifico, para todos os fins, que o documento 1716955 foi inserido, nesta data, no Diário Oficial Eletrônico do Ministério Público do Estado do Amazonas – DOMPE, seguindo para publicação conforme fila do referido sistema eletrônico.

Manaus-AM, data da assinatura eletrônica.

Wilson Ribeiro Junior

Agente de Apoio - Administrativo da SUBADM

Documento assinado eletronicamente por **Wilson Ribeiro Júnior**, **Agente de Apoio - Administrativo**, em 09/09/2025, às 08:49, conforme art. 1º, III, "b", da Lei 11.419/2006.

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PROCURADORIA GERAL DE JUSTIÇA

TERMO DE HOMOLOGAÇÃO

UASG 925849 - PROCURADORIA GERAL DE JUSTIÇA - AM

PREGÃO 94010/2025

Às 16:23 horas do dia 08 de setembro do ano de 2025, após constatada a regularidade dos atos procedimentais, a autoridade competente, ANDRE VIRGILIO BELOTA SEFFAIR, HOMOLOGA a adjudicação referente ao Processo nª 2025.001317, Pregão nª 94010/2025.

Fundamentação legal:	Lei 14.133/2021	Característica:	SRP - Registro de Preço
Critério de julgamento:	Menor Preço / Maior Desconto	Modo de disputa:	Aberto
Compra emergencial:	Não	UF da UASG:	AM
Objeto da compra:	Registro de preços para eventual fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 mes		
Entrega de propostas:	De 12/06/2025 às 08:00 até 30/06/2025 às 10:00		
Abertura da sessão pública:	Dia 30/06/2025 às 10:00 (horário de Brasília)		

Eventos da compra

Data/Hora	Descrição
30/06/2025 às 10:00:02	Abertura da sessão pública
30/06/2025 às 14:06:48	Início da etapa de julgamento de propostas

Termo PNCP - ITEM 3 (1718116) SEI 2025.001317 / pg. 85

Item 3 - Notebook

Notebook Tela: Até 14POL, Interatividade Da Tela: Sem Interatividade, Memória Ram: Superior A 8GB, Núcleos Por Processador: 4 A 8, Armazenamento Hdd: Sem Disco HddGB, Armazenamento Ssd: 110 A 300, Bateria: Até 4 Células, Alimentação: Bivolt Automática, Sistema Operacional: Proprietário, Garantia On Site: 12MESES

Quantidade:	300	Valor estimado:	R$ 12.053,1900 (unitário)
Unidade de fornecimento:	Unidade		R$ 3.615.957,0000 (total)
Intervalo mínimo entre lances:	R$ 10,0000	Situação:	Adjudicado e Homologado
Critério de julgamento:	Menor Preço		

Adjudicado e Homologado por CPF ***.287.***-*3 - ANDRE VIRGILIO BELOTA SEFFAIR para TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, melhor lance: R$ 8.250,0000 (unitário) / R$ 2.475.000,0000 (total)

Propostas do Item 3

Benefício Me/Epp: Conforme Art. 3ª da Lei Complementar nª 123, de 14 de dezembro de 2006
Programa de integridade: Conforme termos previsos na Lei nª 14.133/2021 e no Decreto nª 12.304/2024

Fornecedor	Valor ofertado	Situação
42.816.024/0001-63 - 42.816.024 LEONARDO CATIVO SOUSA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: AM	R$ 10.000,0000 (unitário) R$ 3.000.000,0000 (total)	-
Marca/Fabricante: Conf TR Modelo/versão: Conf TR Valor proposta: R$ 10.000,0000 (unitário) R$ 3.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300		
51.750.663/0001-64 - 51.750.663 THIERREZ MATHEUS ALVES SALES Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: DF	R$ 14.800,0000 (unitário) R$ 4.440.000,0000 (total)	-
Marca/Fabricante: Notebook Modelo/versão: Notebook Valor proposta: R$ 50.000,0000 (unitário) R$ 15.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300		
39.577.541/0001-12 - A&G EQUIPAMENTOS TECNOLOGICOS E INFORMATICA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 10.000,0000 (unitário) R$ 3.000.000,0000 (total)	-
Marca/Fabricante: Dell Modelo/versão: Dell Valor proposta: R$ 10.000,0000 (unitário) R$ 3.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300		

Termo PNCP - ITEM 3 (1718116) SEI 2025.001317 / pg. 86

Fornecedor	Valor ofertado	Situação
01.319.640/0001-21 - AJL INDUSTRIA E COMERCIO LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: AM	R$ 17.530,0000 (unitário) R$ 5.259.000,0000 (total)	-

Marca/Fabricante: LENOVO
Modelo/versão: THINKPAD T14 GEN 5
Valor proposta: R$ 25.000,0000 (unitário) R$ 7.500.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

52.593.051/0001-78 - CENTERDATA COMERCIO DE PRODUTOS DE INFORMATICA E SERVICOS LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 25.000,0000 (unitário) R$ 7.500.000,0000 (total)	-

Marca/Fabricante: Lenovo
Modelo/versão: Lenovo
Valor proposta: R$ 25.000,0000 (unitário) R$ 7.500.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

36.770.097/0001-69 - CIB EMPREENDIMENTOS IMOBILIARIOS LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: MG	R$ 102.360.000,0000 (unitário) R$ 30.708.000.000,0000 (total)	-

Marca/Fabricante: Notebook Tela: Até 14POL, Interatividade Da Tela:
Modelo/versão: Notebook Tela: Até 14POL, Interatividade Da Tela:
Valor proposta: R$ 102.360.000,0000 (unitário) R$ 30.708.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

05.778.325/0005-47 - E.R. SOLUCOES INFORMATICA LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: ES	R$ 8.580,0000 (unitário) R$ 2.574.000,0000 (total)	-

Marca/Fabricante: LENOVO
Modelo/versão: E14 INTEL GEN 6 + ACESSORIOS
Valor proposta: R$ 12.000,0000 (unitário) R$ 3.600.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

53.571.459/0001-01 - ELLOELLA DISTRIBUIDORA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: PE	R$ 15.833,1100 (unitário) R$ 4.749.933,0000 (total)	-

Marca/Fabricante: LENOVO
Modelo/versão: THIKPAD E14
Valor proposta: R$ 17.592,3400 (unitário) R$ 5.277.702,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

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Fornecedor	Valor ofertado	Situação
35.689.930/0001-89 - HOUSE LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: AM	R$ 6.000,0000 (unitário) R$ 1.800.000,0000 (total)	Proposta desclassificada

Marca/Fabricante: Dell
Modelo/versão: Conforme TR
Valor proposta: R$ 6.000,0000 (unitário) R$ 1.800.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

36.306.823/0001-97 - LICITIN TECNOLOGIA E INFORMATICA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 20.000,0000 (unitário) R$ 6.000.000,0000 (total)	-

Marca/Fabricante: DELL
Modelo/versão: LATITUDE
Valor proposta: R$ 20.000,0000 (unitário) R$ 6.000.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

20.380.331/0001-01 - MR COMERCIO DE PECAS E ACESSORIOS LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: AM	R$ 6.250,0000 (unitário) R$ 1.875.000,0000 (total)	Proposta desclassificada

Marca/Fabricante: NOT IDEAPAD 1 I3
Modelo/versão: 1 I3
Valor proposta: R$ 6.250,0000 (unitário) R$ 1.875.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

81.243.735/0009-03 - POSITIVO TECNOLOGIA S.A. Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: BA	R$ 5.700,0000 (unitário) R$ 1.710.000,0000 (total)	Proposta desclassificada

Marca/Fabricante: Positivo / Positivo Tecnologia S.A.
Modelo/versão: Positivo Master N8450
Valor proposta: R$ 7.000,0000 (unitário) R$ 2.100.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

32.872.401/0001-28 - PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 8.290,0000 (unitário) R$ 2.487.000,0000 (total)	-

Marca/Fabricante: Lenovo
Modelo/versão: ThinkPad T 14
Valor proposta: R$ 10.099,0000 (unitário) R$ 3.029.700,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300

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Fornecedor	Valor ofertado	Situação
11.027.350/0003-20 - PROXYS COMERCIO ELETRONICO LTDA Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: SC	R$ 11.716,7400 (unitário) R$ 3.515.022,0000 (total)	-

Marca/Fabricante:	LENOVO				
Modelo/versão:	Notebook Lenovo T14 G5 Intel Core Ultra 5 135u Vpr				
Valor proposta:	R$ 14.227,4700 (unitário) R$ 4.268.241,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	300

Fornecedor	Valor ofertado	Situação
47.172.975/0001-60 - RENATO PALLADINO DE FREITAS 41131128869 Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: SP	R$ 9.485,0000 (unitário) R$ 2.845.500,0000 (total)	-

Marca/Fabricante:	Lenovo				
Modelo/versão:	ThinkPad				
Valor proposta:	R$ 13.500,0000 (unitário) R$ 4.050.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	300

Fornecedor	Valor ofertado	Situação
30.948.812/0001-24 - RL INFORMATICA LTDA Benefício Me/Epp: Não Programa de integridade: Não UF endereço: PE	R$ 15.390,0000 (unitário) R$ 4.617.000,0000 (total)	-

Marca/Fabricante:	Lenovo				
Modelo/versão:	T14 Gen 5 + Acessórios				
Valor proposta:	R$ 20.000,0000 (unitário) R$ 6.000.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	300

Fornecedor	Valor ofertado	Situação
49.853.502/0001-54 - SNT SOLUCOES TECNOLOGICAS LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 9.500,0000 (unitário) R$ 2.850.000,0000 (total)	-

Marca/Fabricante:	DELL				
Modelo/versão:	LATITUDE 5450				
Valor proposta:	R$ 9.500,0000 (unitário) R$ 2.850.000,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	300

Fornecedor	Valor ofertado	Situação
49.264.057/0001-97 - T. D. A. S. Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: DF	R$ 9.489,0000 (unitário) R$ 2.846.700,0000 (total)	-

Marca/Fabricante:	Notebook				
Modelo/versão:	pc				
Valor proposta:	R$ 9.489,0000 (unitário) R$ 2.846.700,0000 (total)	Valor negociado:	Não Realizado	Quantidade ofertada:	300

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Fornecedor	Valor ofertado	Situação
03.619.767/0005-15 - TORINO INFORMATICA LTDA.. Benefício Me/Epp: Não Programa de integridade: Sim UF endereço: ES	R$ 8.250,0000 (unitário) R$ 2.475.000,0000 (total)	Proposta adjudicada
Marca/Fabricante: HP Modelo/versão: Notebook HP Valor proposta: R$ 16.000,0000 (unitário) R$ 4.800.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300		
28.880.531/0002-16 - TR TECNOLOGIA E COMERCIO LTDA Benefício Me/Epp: Sim Programa de integridade: Sim UF endereço: ES	R$ 19.880,0000 (unitário) R$ 5.964.000,0000 (total)	-
Marca/Fabricante: DELL LATITUDE 5450 16GB 256GB WIN11P CORE 5 Modelo/versão: DELL LATITUDE 5450 16GB 256GB WIN11P CORE 5 Valor proposta: R$ 22.000,0000 (unitário) R$ 6.600.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300		
41.680.761/0001-19 - TREER TECNOLOGY LTDA Benefício Me/Epp: Sim Programa de integridade: Não UF endereço: MG	R$ 14.000,0000 (unitário) R$ 4.200.000,0000 (total)	-
Marca/Fabricante: Lenovo Modelo/versão: ThinkPAD Valor proposta: R$ 14.000,0000 (unitário) R$ 4.200.000,0000 (total) Valor negociado: Não Realizado Quantidade ofertada: 300		

Lances do Item 3

Data/hora	Participante	Lance
30/06/2025 às 12:14:16	30.948.812/0001-24	R$ 15.990,0000
30/06/2025 às 12:14:17	11.027.350/0003-20	R$ 11.716,7400
30/06/2025 às 12:14:18	53.571.459/0001-01	R$ 15.833,1100
30/06/2025 às 12:14:22	30.948.812/0001-24	R$ 15.823,1100
30/06/2025 às 12:15:49	28.880.531/0002-16	R$ 19.880,0000
30/06/2025 às 12:16:13	01.319.640/0001-21	R$ 18.290,0000
30/06/2025 às 12:17:10	01.319.640/0001-21	R$ 17.530,0000
30/06/2025 às 12:19:52	05.778.325/0005-47	R$ 9.470,0000
30/06/2025 às 12:20:04	03.619.767/0005-15	R$ 11.900,0000
30/06/2025 às 12:21:06	32.872.401/0001-28	R$ 9.479,0000
30/06/2025 às 12:21:58	32.872.401/0001-28	R$ 9.459,0000
30/06/2025 às 12:22:27	05.778.325/0005-47	R$ 9.400,0000
30/06/2025 às 12:23:32	81.243.735/0009-03	R$ 6.990,0000
30/06/2025 às 12:24:35	81.243.735/0009-03	R$ 6.980,0000

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Data/hora	Participante	Lance
30/06/2025 às 12:24:54	03.619.767/0005-15	R$ 10.000,0000
30/06/2025 às 12:25:32	81.243.735/0009-03	R$ 6.900,0000
30/06/2025 às 12:25:55	03.619.767/0005-15	R$ 9.400,0000
30/06/2025 às 12:26:21	81.243.735/0009-03	R$ 6.890,0000
30/06/2025 às 12:26:21	03.619.767/0005-15	R$ 9.390,0000
30/06/2025 às 12:26:46	05.778.325/0005-47	R$ 9.300,0000
30/06/2025 às 12:27:44	81.243.735/0009-03	R$ 5.990,0000
30/06/2025 às 12:28:04	03.619.767/0005-15	R$ 9.280,0000
30/06/2025 às 12:28:15	05.778.325/0005-47	R$ 9.200,0000
30/06/2025 às 12:28:51	03.619.767/0005-15	R$ 9.180,0000
30/06/2025 às 12:29:30	05.778.325/0005-47	R$ 9.100,0000
30/06/2025 às 12:30:40	03.619.767/0005-15	R$ 9.080,0000
30/06/2025 às 12:30:59	05.778.325/0005-47	R$ 9.000,0000
30/06/2025 às 12:31:22	03.619.767/0005-15	R$ 8.980,0000
30/06/2025 às 12:31:33	32.872.401/0001-28	R$ 9.090,0000
30/06/2025 às 12:31:39	51.750.663/0001-64	R$ 15.800,0000
30/06/2025 às 12:31:42	30.948.812/0001-24	R$ 15.790,0000
30/06/2025 às 12:32:02	05.778.325/0005-47	R$ 8.900,0000
30/06/2025 às 12:32:18	03.619.767/0005-15	R$ 8.790,0000
30/06/2025 às 12:32:47	32.872.401/0001-28	R$ 8.890,0000
30/06/2025 às 12:32:51	05.778.325/0005-47	R$ 8.750,0000
30/06/2025 às 12:33:29	03.619.767/0005-15	R$ 8.730,0000
30/06/2025 às 12:33:43	05.778.325/0005-47	R$ 8.700,0000
30/06/2025 às 12:33:54	51.750.663/0001-64	R$ 15.400,0000
30/06/2025 às 12:33:54	30.948.812/0001-24	R$ 15.390,0000
30/06/2025 às 12:34:30	51.750.663/0001-64	R$ 14.800,0000
30/06/2025 às 12:35:01	32.872.401/0001-28	R$ 8.790,0000
30/06/2025 às 12:36:19	03.619.767/0005-15	R$ 8.690,0000
30/06/2025 às 12:36:33	05.778.325/0005-47	R$ 8.650,0000
30/06/2025 às 12:36:53	03.619.767/0005-15	R$ 8.620,0000
30/06/2025 às 12:37:07	05.778.325/0005-47	R$ 8.600,0000
30/06/2025 às 12:37:32	03.619.767/0005-15	R$ 8.590,0000
30/06/2025 às 12:38:15	05.778.325/0005-47	R$ 8.580,0000
30/06/2025 às 12:39:14	03.619.767/0005-15	R$ 8.560,0000

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Data/hora	Participante	Lance
30/06/2025 às 12:41:07	32.872.401/0001-28	R$ 8.780,0000
30/06/2025 às 12:42:45	32.872.401/0001-28	R$ 8.770,0000
30/06/2025 às 12:44:40	32.872.401/0001-28	R$ 8.550,0000
30/06/2025 às 12:45:01	03.619.767/0005-15	R$ 8.540,0000
30/06/2025 às 12:45:12	32.872.401/0001-28	R$ 8.530,0000
30/06/2025 às 12:46:26	03.619.767/0005-15	R$ 8.520,0000
30/06/2025 às 12:47:52	47.172.975/0001-60	R$ 9.485,0000
30/06/2025 às 12:49:48	32.872.401/0001-28	R$ 8.510,0000
30/06/2025 às 12:50:17	03.619.767/0005-15	R$ 8.500,0000
30/06/2025 às 12:50:19	32.872.401/0001-28	R$ 8.490,0000
30/06/2025 às 12:50:34	03.619.767/0005-15	R$ 8.470,0000
30/06/2025 às 12:51:50	32.872.401/0001-28	R$ 8.460,0000
30/06/2025 às 12:52:39	03.619.767/0005-15	R$ 8.450,0000
30/06/2025 às 12:52:56	32.872.401/0001-28	R$ 8.440,0000
30/06/2025 às 12:53:29	03.619.767/0005-15	R$ 8.430,0000
30/06/2025 às 12:53:36	32.872.401/0001-28	R$ 8.420,0000
30/06/2025 às 12:53:51	03.619.767/0005-15	R$ 8.400,0000
30/06/2025 às 12:55:50	32.872.401/0001-28	R$ 8.410,0000
30/06/2025 às 12:57:39	81.243.735/0009-03	R$ 5.700,0000
30/06/2025 às 12:58:51	32.872.401/0001-28	R$ 8.390,0000
30/06/2025 às 12:59:02	03.619.767/0005-15	R$ 8.380,0000
30/06/2025 às 12:59:16	32.872.401/0001-28	R$ 8.370,0000
30/06/2025 às 12:59:48	03.619.767/0005-15	R$ 8.350,0000
30/06/2025 às 12:59:58	32.872.401/0001-28	R$ 8.330,0000
30/06/2025 às 13:00:14	03.619.767/0005-15	R$ 8.310,0000
30/06/2025 às 13:01:20	32.872.401/0001-28	R$ 8.290,0000
30/06/2025 às 13:01:55	03.619.767/0005-15	R$ 8.250,0000

Mensagens do chat do Item 3

Responsável	Data/Hora	Mensagem
Sistema	30/06/2025 às 12:04:14	A abertura do item 3 para lances está agendada para daqui a 10 minutos. Mantenham-se conectados.
Sistema	30/06/2025 às 12:14:14	O item 3 foi aberto. Solicitamos o envio de lances.
Sistema	30/06/2025 às 13:03:56	O item 3 está aguardando decisão de reinício ou encerramento da etapa aberta pelo comprador.
Sistema	30/06/2025 às 13:13:30	O item 3 está encerrado.

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Responsável	Data/Hora	Mensagem
Sistema para o participante 81.243.735/0009-03	01/07/2025 às 10:41:11	Sr. Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 12:45:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
Pelo participante 81.243.735/0009-03	01/07/2025 às 11:25:56	O item 3 teve a convocação para envio de anexos encerrada às 11:25:56 de 01/07/2025. 2 anexos foram enviados pelo fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03.
Sistema para o participante 81.243.735/0009-03	08/07/2025 às 14:59:20	Sr. Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 17:04:00 do dia 08/07/2025. Justificativa: Solicito que apresente nos documentos de proposta enviados para o Item 3, o pleno atendimento aos requisitos técnicos exigidos no Termo de Referência Nª 2.2025.DTIC.1525128.2025.001317, Anexo I ao Edital do certame..
Pelo participante 81.243.735/0009-03	08/07/2025 às 15:12:45	Prezado Sr. Pregoeiro, boa tarde! Em razão do tempo necessário para a elaboração de um documento ponto a ponto, solicitamos, gentilmente, a prorrogação do prazo por igual período, totalizando 4 (quatro) horas. Considerando o horário comercial, solicitamos que o novo prazo seja fixado até o dia 09/07/2025, às 9h.
Sistema para o participante 81.243.735/0009-03	08/07/2025 às 15:53:39	Prezada, boa tarde.
Sistema para o participante 81.243.735/0009-03	08/07/2025 às 15:59:41	A comprovação do atendimento da oferta aos requisitos técnicos e formais do Edital é papel do licitante. Tal procedimento, em termos de boas práticas, deve ser realizado desde a apresentação da proposta ajustada aos lances. Ainda, a juntada dos documentos é realizada pela própria proponente, com documentos considerados suficientes para uma análise segura e definitiva do equipamento ofertado.
Sistema para o participante 81.243.735/0009-03	08/07/2025 às 16:00:24	Assim, entende-se ser ela a detentora de todo conhecimento necessário para o adequado esclarecimento sobre sua proposta.
Sistema para o participante 81.243.735/0009-03	08/07/2025 às 16:04:02	Ainda, a solicitação para apresentação no prazo de 2 (duas) horas - mesmo prazo de envio da proposta, não nos parece desarrazoado. Sendo, no entendimento do Instrumento Convocatório, adequado às solicitações realizadas no certame, conforme prevê o subitem 10.9 do Edital.
Sistema para o participante 81.243.735/0009-03	08/07/2025 às 16:04:40	Nesse sentido, indefiro a solicitação de prorrogação do prazo pelos motivos acimas expostos.
Pelo participante 81.243.735/0009-03	08/07/2025 às 16:50:02	O item 3 teve a convocação para envio de anexos encerrada às 16:50:02 de 08/07/2025. 1 anexo foi enviado pelo fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03.
Sistema para o participante 81.243.735/0009-03	11/07/2025 às 11:25:21	Sr. Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 13:28:00 do dia 11/07/2025. Justificativa: Solicito envio de documentos que comprovem o atendimento da oferta aos pontos levantados no Parecer Nª 22.2025.SIET.1668772.2025.001317..
Pelo participante 81.243.735/0009-03	11/07/2025 às 11:49:50	Prezado Sr. Pregoeiro, bom dia! Respeitosamente, solicitamos a Vossa Senhoria prazo para resposta à diligência até às 15h30min de hoje. Devido à quantidade de diligências e com o objetivo de fornecer uma resposta completa e precisa, necessitamos de um prazo adicional para realizar as consultas e levantamentos necessários. Agradecemos pela compreensão e aguardamos sua consideração.
Sistema para o participante 81.243.735/0009-03	11/07/2025 às 12:04:22	Prezado Licitante, bom dia.
Sistema para o participante 81.243.735/0009-03	11/07/2025 às 12:11:16	Considerando a presente solicitação e, nos termos do subitem 10.7.1. c/c subitem 10.9 do Edital, defiro a prorrogação do prazo de convocação.
Sistema para o participante 81.243.735/0009-03	11/07/2025 às 12:11:56	Solicito de V. Sa. que encerre o prazo de convocação para ajuste na convocação.
Pelo participante 81.243.735/0009-03	11/07/2025 às 12:13:57	O item 3 teve a convocação para envio de anexos encerrada às 12:13:57 de 11/07/2025. Nenhum anexo foi enviado pelo fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03.

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Responsável	Data/Hora	Mensagem
Pelo participante 81.243.735/0009-03	11/07/2025 às 12:15:14	Prezado Sr. Pregoeiro, muito obrigada!
Pelo participante 81.243.735/0009-03	11/07/2025 às 12:16:06	A convocação foi encerrada, conforme solicitação.
Sistema para o participante 81.243.735/0009-03	11/07/2025 às 12:17:35	Sr. Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 15:30:00 do dia 11/07/2025. Justificativa: Prorrogado o prazo no tempo requerido. Solicito envio de documentos que comprovem o atendimento da oferta aos pontos levantados no Parecer Nª 22.2025.SIET.1668772.2025.001317...
Pelo participante 81.243.735/0009-03	11/07/2025 às 15:23:57	O item 3 teve a convocação para envio de anexos encerrada às 15:23:57 de 11/07/2025. 1 anexo foi enviado pelo fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03.
Sistema para o participante 35.689.930/0001-89	14/07/2025 às 15:52:39	Sr. Fornecedor HOUSE LTDA, CNPJ 35.689.930/0001-89, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 17:55:00 do dia 14/07/2025. Justificativa: Solicito o envio de proposta de preços ajustada ao lance e a documentação técnica do equipamento ofertado, conforme letra "k" do subitem 9.2 do Edital..
Sistema para o participante 35.689.930/0001-89	14/07/2025 às 17:55:00	O item 3 teve a convocação para envio de anexos encerrada às 17:55:00 de 14/07/2025. Nenhum anexo foi enviado pelo fornecedor HOUSE LTDA, CNPJ 35.689.930/0001-89.
Sistema para o participante 20.380.331/0001-01	16/07/2025 às 14:10:42	Sr. Fornecedor MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 16:15:00 do dia 16/07/2025. Justificativa: Solicito envio de proposta de preços ajustada ao lance, acompanhada dos documentos técnicos do item ofertado, conforme letra "k" do subitem 9.2. do Edital..
Sistema para o participante 20.380.331/0001-01	16/07/2025 às 16:15:00	O item 3 teve a convocação para envio de anexos encerrada às 16:15:00 de 16/07/2025. Nenhum anexo foi enviado pelo fornecedor MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01.
Sistema	17/07/2025 às 11:46:44	O item 3 terá desempate Me/Epp do lance. Mantenham-se conectados.
Sistema para o participante 32.872.401/0001-28	17/07/2025 às 11:46:44	Sr. Fornecedor PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA, CPF/CNPJ 32.872.401/0001-28, em cumprimento à Lei Complementar 123 de 14/12/2006, você poderá enviar ou desistir de apresentar lance final e único para o item 3 até às 11:51:44 do dia 17/07/2025. Acesse a Sala de Disputa.
Sistema	17/07/2025 às 11:51:45	O item 3 teve o 1ª desempate Me/Epp encerrado às 11:51:44 de 17/07/2025. O tempo expirou e o lance não foi enviado pelo fornecedor PRIMUS TECNOLOGIA E SERVICOS DE INFORMATICA LTDA, CPF/CNPJ 32.872.401/0001-28.
Sistema	17/07/2025 às 11:51:45	O item 3 está encerrado.
Sistema para o participante 03.619.767/0005-15	17/07/2025 às 12:00:31	Sr. Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 14:05:00 do dia 17/07/2025. Justificativa: Solicito envio de proposta de preços ajustada ao lance, acompanhada dos documentos técnicos do item ofertado, conforme letra "k" do subitem 9.2. do Edital...
Pelo participante 03.619.767/0005-15	17/07/2025 às 12:08:04	Sr. Pregoeiro, por favor, poderia prorrogar o envio dos documentos devido ao horario de almoço?
Sistema para o participante 03.619.767/0005-15	17/07/2025 às 12:17:06	Solicito seja encerrado o prazo para realizar a convocação a partir das 13h (horário Brasília).
Sistema para o participante 03.619.767/0005-15	17/07/2025 às 14:05:00	O item 3 teve a convocação para envio de anexos encerrada às 14:05:00 de 17/07/2025. Nenhum anexo foi enviado pelo fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15.
Sistema para o participante 03.619.767/0005-15	17/07/2025 às 14:25:48	Prezados, boa tarde. Considerando o acolhimento da solicitação, informo que V. Sa. será novamente convocada para envio de proposta. Solicito atenção.

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Responsável	Data/Hora	Mensagem
Sistema para o participante 03.619.767/0005-15	17/07/2025 às 14:26:11	Sr. Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 16:28:00 do dia 17/07/2025. Justificativa: Solicito envio de proposta de preços ajustada ao lance, acompanhada dos documentos técnicos do item ofertado, conforme letra "k" do subitem 9.2. do Edital....
Pelo participante 03.619.767/0005-15	17/07/2025 às 15:27:53	O item 3 teve a convocação para envio de anexos encerrada às 15:27:53 de 17/07/2025. 5 anexos foram enviados pelo fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15.
Pelo participante 03.619.767/0005-15	17/07/2025 às 15:31:05	senhor pregoeiro, por favor, como estamos dentro do tempo ainda, por favor, reabrir o envio de anexo, somente para incluirmos 1 documento
Pelo participante 03.619.767/0005-15	17/07/2025 às 15:31:14	é só o tempo de incluir o documento
Pelo participante 03.619.767/0005-15	17/07/2025 às 15:31:26	pois encerramos o envio erroneamente
Sistema para o participante 03.619.767/0005-15	21/07/2025 às 11:14:31	Sr. Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 13:16:00 do dia 21/07/2025. Justificativa: Solicito envio de documentos referente ao item 3 ofertado..
Sistema para o participante 03.619.767/0005-15	21/07/2025 às 13:16:00	O item 3 teve a convocação para envio de anexos encerrada às 13:16:00 de 21/07/2025. 1 anexo foi enviado pelo fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15.
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:20:26	Bom dia!, podemos responder as duvidas, via diligencia, pois temos comprovação de antendimento.
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:24:38	solicitamos o envio do documento que comprova a velocidad de esqrita do hd da hp
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:24:50	que comprova a velocidade solicitada
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:25:05	informação essa que pode ser dirimida via diligencia
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:25:09	é um documento interno da hp
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:25:33	Sr. pregoeiro, está acompanhando as mensagens?
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:28:02	Sequential Write (128/256GB) Up to 1,200 MB/s
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:28:33	diante disso, solicitamos a diligencia para a comprovação do item
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:35:05	documento enviado para o email licitacao@mpam.mp.br
Sistema para o participante 03.619.767/0005-15	28/07/2025 às 10:42:32	Prezado Licitante, diga o que vossa senhora pretende. O que V. Sa. quer dizer?
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:44:12	Quero dizer que o equipamento atende ao solicitado, e temos a comprovação do SSD, e sobre a garantia, se atentar para o documento da HP apresentado, onde a HP confirma que a Torino é Assistencia tecnica autorizada da HP, isto é, o equipamento possuirá a garantia solicitada.
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:45:35	Solicitamos que antes da desclassificação, que o MPAM faça a diligencia para sanar dúvidas dos pontos apresentados.
Pelo participante 03.619.767/0005-15	28/07/2025 às 10:48:56	25.3. É facultada ao pregoeiro ou autoridade superior, em qualquer fase da licitação, a promoção de diligência destinada a esclarecer ou complementar a instrução do processo.
Sistema para o participante 03.619.767/0005-15	28/07/2025 às 11:02:41	Prezada, nos termos do subitem 10.9 do Edital, vou lhe conceder o prazo estabelecido para saneamento do que foi informado no Parecer 26.2025.SIET. Solicito atenção.

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Responsável	Data/Hora	Mensagem
Sistema para o participante 03.619.767/0005-15	28/07/2025 às 11:07:34	Sr. Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 13:10:00 do dia 28/07/2025. Justificativa: Solicito documentos comprobatórios do atendimento aos itens apontados no Parecer Nª 26.2025.SIET.1679784.2025.001317..
Pelo participante 03.619.767/0005-15	28/07/2025 às 11:08:04	ok, ciente, obrigado.
Pelo participante 03.619.767/0005-15	28/07/2025 às 12:07:02	O item 3 teve a convocação para envio de anexos encerrada às 12:07:02 de 28/07/2025. 3 anexos foram enviados pelo fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15.
Sistema para o participante 03.619.767/0005-15	30/07/2025 às 11:09:40	Prezado, bom dia.
Pelo participante 03.619.767/0005-15	30/07/2025 às 11:10:10	bom dia
Pelo participante 03.619.767/0005-15	30/07/2025 às 11:10:34	podemos esclarecer sem problemas os pontos apresentados
Sistema para o participante 03.619.767/0005-15	30/07/2025 às 11:15:45	No PARECER Nª 92.2025.DTIC.1683372.2025.001317, No subitem 5 - UNIDADE DE ARMAZENAMENTO, do quadro do Item 2.2, solicita-se esclarecimentos, bem como no subitem 18 do mesmo quadro.
Sistema para o participante 03.619.767/0005-15	30/07/2025 às 11:18:28	Prezado, o subitem 10.
Sistema para o participante 03.619.767/0005-15	30/07/2025 às 11:20:20	Prezado, com fundamento no subitem 10.7.1. e 10.9 do Edital, V. Sa. será convocada para envio de documento comprobatório do atendimento dos pontos levantados no parecer supramencionado.
Sistema para o participante 03.619.767/0005-15	30/07/2025 às 11:20:28	Solicito atenção.
Sistema para o participante 03.619.767/0005-15	30/07/2025 às 11:21:18	Sr. Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 13:25:00 do dia 30/07/2025. Justificativa: Solicito envio de documentos conforme solicitado através do PARECER Nª 92.2025.DTIC.1683372.2025.001317. .
Pelo participante 03.619.767/0005-15	30/07/2025 às 11:23:59	ok
Pelo participante 03.619.767/0005-15	30/07/2025 às 12:25:19	O item 3 teve a convocação para envio de anexos encerrada às 12:25:19 de 30/07/2025. 3 anexos foram enviados pelo fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15.
Sistema	01/08/2025 às 11:16:53	O item 3 está na etapa de julgamento de proposta no período de intenção de recursos, com acréscimo de 10 minutos a partir de agora - até 01/08/2025 11:26:53.
Sistema para o participante 03.619.767/0005-15	01/08/2025 às 12:25:51	Sr. Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15, você foi convocado para enviar anexos para o item 3. Prazo para encerrar o envio: 14:28:00 do dia 01/08/2025. Justificativa: Solicito o envio dos documentos de habilitação, conforme subitem 11 do Instrumento Convocatório..
Pelo participante 03.619.767/0005-15	01/08/2025 às 14:23:15	O item 3 teve a convocação para envio de anexos encerrada às 14:23:15 de 01/08/2025. 1 anexo foi enviado pelo fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15.
Sistema	05/08/2025 às 11:38:17	O item 3 está na etapa de habilitação de fornecedores no período de intenção de recursos, com acréscimo de 10 minutos a partir de agora - até 05/08/2025 11:48:17.
Sistema	05/08/2025 às 12:21:44	A fase de recurso do item 3 está aberta até 08/08/2025.
Sistema	09/08/2025 às 00:00:03	A fase de recurso do item 3 foi finalizada no prazo previsto. O item está aberto para registro de contrarrazão até 13/08/2025.

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Responsável	Data/Hora	Mensagem
Sistema	14/08/2025 às 00:00:03	A fase de contrarrazão do item 3 foi finalizada no prazo previsto. O item está aberto para decisão do pregoeiro.

Eventos do Item 3

Data/Hora	Descrição
01/07/2025 às 10:41:11	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 convocado para o envio de anexo. Prazo para encerrar o envio: 12:45:00 do dia 01/07/2025. Justificativa: Solicito seja encaminhada a Proposta de Preços ajustada ao lance e documentação técnica completa dos itens ofertados, conforme letra "k" do subitem 9.2. do Edital..
01/07/2025 às 11:25:56	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 finalizou o envio de anexo.
08/07/2025 às 14:59:20	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 convocado para o envio de anexo. Prazo para encerrar o envio: 17:04:00 do dia 08/07/2025. Justificativa: Solicito que apresente nos documentos de proposta enviados para o Item 3, o pleno atendimento aos requisitos técnicos exigidos no Termo de Referência Nª 2.2025.DTIC.1525128.2025.001317, Anexo I ao Edital do certame..
08/07/2025 às 16:50:02	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 finalizou o envio de anexo.
11/07/2025 às 11:25:21	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 convocado para o envio de anexo. Prazo para encerrar o envio: 13:28:00 do dia 11/07/2025. Justificativa: Solicito envio de documentos que comprovem o atendimento da oferta aos pontos levantados no Parecer Nª 22.2025.SIET.1668772.2025.001317..
11/07/2025 às 12:13:57	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 finalizou o envio de anexo.
11/07/2025 às 12:17:35	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 convocado para o envio de anexo. Prazo para encerrar o envio: 15:30:00 do dia 11/07/2025. Justificativa: Prorrogado o prazo no tempo requerido. Solicito envio de documentos que comprovem o atendimento da oferta aos pontos levantados no Parecer Nª 22.2025.SIET.1668772.2025.001317...
11/07/2025 às 15:23:57	Fornecedor POSITIVO TECNOLOGIA S.A., CNPJ 81.243.735/0009-03 finalizou o envio de anexo.
14/07/2025 às 15:52:39	Fornecedor HOUSE LTDA, CNPJ 35.689.930/0001-89 convocado para o envio de anexo. Prazo para encerrar o envio: 17:55:00 do dia 14/07/2025. Justificativa: Solicito o envio de proposta de preços ajustada ao lance e a documentação técnica do equipamento ofertado, conforme letra "k" do subitem 9.2 do Edital..
16/07/2025 às 14:10:42	Fornecedor MR COMERCIO DE PECAS E ACESSORIOS LTDA, CNPJ 20.380.331/0001-01 convocado para o envio de anexo. Prazo para encerrar o envio: 16:15:00 do dia 16/07/2025. Justificativa: Solicito envio de proposta de preços ajustada ao lance, acompanhada dos documentos técnicos do item ofertado, conforme letra "k" do subitem 9.2. do Edital..
17/07/2025 às 12:00:31	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 convocado para o envio de anexo. Prazo para encerrar o envio: 14:05:00 do dia 17/07/2025. Justificativa: Solicito envio de proposta de preços ajustada ao lance, acompanhada dos documentos técnicos do item ofertado, conforme letra "k" do subitem 9.2. do Edital...
17/07/2025 às 14:26:11	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 convocado para o envio de anexo. Prazo para encerrar o envio: 16:28:00 do dia 17/07/2025. Justificativa: Solicito envio de proposta de preços ajustada ao lance, acompanhada dos documentos técnicos do item ofertado, conforme letra "k" do subitem 9.2. do Edital....
17/07/2025 às 15:27:53	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 finalizou o envio de anexo.
21/07/2025 às 11:14:31	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 convocado para o envio de anexo. Prazo para encerrar o envio: 13:16:00 do dia 21/07/2025. Justificativa: Solicito envio de documentos referente ao item 3 ofertado..
28/07/2025 às 11:07:34	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 convocado para o envio de anexo. Prazo para encerrar o envio: 13:10:00 do dia 28/07/2025. Justificativa: Solicito documentos comprobatórios do atendimento aos itens apontados no Parecer Nª 26.2025.SIET.1679784.2025.001317..
28/07/2025 às 12:07:02	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 finalizou o envio de anexo.
30/07/2025 às 11:21:18	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 convocado para o envio de anexo. Prazo para encerrar o envio: 13:25:00 do dia 30/07/2025. Justificativa: Solicito envio de documentos conforme solicitado através do PARECER Nª 92.2025.DTIC.1683372.2025.001317. .
30/07/2025 às 12:25:19	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 finalizou o envio de anexo.

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Data/Hora	Descrição
01/08/2025 às 12:25:51	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 convocado para o envio de anexo. Prazo para encerrar o envio: 14:28:00 do dia 01/08/2025. Justificativa: Solicito o envio dos documentos de habilitação, conforme subitem 11 do Instrumento Convocatório..
01/08/2025 às 14:23:15	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 finalizou o envio de anexo.
08/08/2025 às 17:22:19	Fornecedor E.R. SOLUCOES INFORMATICA LTDA, CNPJ 05.778.325/0005-47 registra recurso.
08/08/2025 às 18:13:42	Fornecedor TREER TECNOLOGY LTDA, CNPJ 41.680.761/0001-19 registra a desistência de cadastrar recurso.
13/08/2025 às 15:12:32	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 registra contrarrazão ao recurso do fornecedor 05.778.325/0005-47.
01/09/2025 às 12:34:14	Agente de contratação registra a decisão para os recursos cadastrados.
08/09/2025 às 16:22:55	Autoridade competente registra a revisão da decisão para os recursos cadastrados.
08/09/2025 às 16:23:39	Fornecedor TORINO INFORMATICA LTDA.., CNPJ 03.619.767/0005-15 teve a proposta adjudicada, melhor lance: R$ 8.250,0000.
08/09/2025 às 16:23:39	Item homologado.

Fase Recursal do Item/Grupo *

* Maiores detalhes sobre recursos, contrarrazões, decisões e revisões deverão ser consultados no sistema.

Sessão 1

Prazos:

Intenção de recurso no julgamento:		01/08/2025 11:26:53
Intenção de recurso na habilitação:		05/08/2025 11:48:17
Recurso:		08/08/2025 23:59:59
Contrarrazão:		13/08/2025 23:59:59

Recursos realizados:

05.778.325/0005-47 - E.R. SOLUCOES INFORMATICA LTDA

Intenção de recurso no julgamento:		01/08/2025 11:17:05
Intenção de recurso na habilitação:		05/08/2025 11:40:53
Recurso:	(Cadastrado)	08/08/2025 17:22:19
Contrarrazões:		
03.619.767/0005-15 - TORINO INFORMATICA LTDA..	(Cadastrado)	13/08/2025 15:12:32

81.243.735/0009-03 - POSITIVO TECNOLOGIA S.A.

Intenção de recurso no julgamento:		01/08/2025 11:18:11
Intenção de recurso na habilitação:		05/08/2025 11:38:42
Recurso:	(Desistiu Cadastro)	
Contrarrazões:	Não foi realizado cadastro	

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41.680.761/0001-19 - TREER TECNOLOGY LTDA

Intenção de recurso no julgamento:		01/08/2025 11:18:47
Recurso:	(Desistiu Cadastro)	08/08/2025 18:13:42
Contrarrazões:	Não foi realizado cadastro	

Decisão do agente de contratação:	(Não procede)	01/09/2025 12:34:14
Revisão da autoridade competente:	(Mantida decisão não procede)	08/09/2025 16:22:55

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SUBPROCURADORIA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus/AM, 09 de setembro de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos

PORTARIA Nº 964/2025/SUBADM

O SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, no uso de suas atribuições legais, e

CONSIDERANDO o teor do Procedimento Interno n.º 2025.019641 – SEI,

RESOLVE:

I - AUTORIZAR a participação dos servidores ELAYNE DE LIMA PEREIRA, Chefe da Divisão de Controle Interno, e PAULO HENRIQUE RODRIGUES DE SENA, Agente Técnico - Contador, no curso "E-Social, EFD-Reinf e DCTFWeb com Retenções Tributárias para Gestores na Administração Pública", no período de 09 a 12.09.2025, das 13h às 17h, na Escola de Contas do Egrégio Tribunal de Contas do Estado do Amazonas, sem ônus para este Ministério Público;

II – DETERMINAR a apresentação do Certificado/Declaração comprobatório de efetiva participação junto à Divisão de Recursos Humanos desta PGJ.

Publique-se, registre-se, cumpra-se.

SUBPROCURADORIA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus/AM, 09 de setembro de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos

DESPACHO Nº 799.2025.01AJ-SUBADM.1716955.2025.001317

PROCESSO SEI N.º 2025.001317
Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP

ADJUDICAÇÃO E HOMOLOGAÇÃO

CONSIDERANDO a solicitação constante do Ofício Nº 41.2025.DTIC.1566526.2025.001317, bem como o teor do Termo de Referência Nº 2.2025.DTIC.1525128.2025.001317 e Anexos;

CONSIDERANDO o disposto na Lei, nos Termos de Julgamento de realização do Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP e demais documentos pertinentes, lavrados pela Comissão Permanente de Licitação entre os dias 30/06/2025 e 21/07/2025, sobretudo, as ponderações do relatório circunstanciado parcial de apreciação do certame de referência, tendo por objeto a formação de ata de registro de preços para aquisição de gêneros alimentícios (açúcar, café e leite) a serem disponibilizados pelo Almoxarifado, localizado no edifício-sede da PGJ, a fim de garantir o aprimoramento da distribuição dos bens de consumo existentes em estoque, melhorando a qualidade de atendimento das demandas das diversas unidades da Procuradoria-Geral de Justiça, por um período estimado de 12 meses, quantificados e qualificados conforme as especificações e as condições constantes do seu Edital e anexos;

CONSIDERANDO a aceitação da proposta de preço e habilitação da empresa TORINO INFORMÁTICA LTDA., CNPJ (MF) n.º 03.619.767/0005-15, para o Item 3 - no Valor Total de R$ 2.475.000,00 (dois milhões quatrocentos e setenta e cinco mil reais);

CONSIDERANDO o Relatório Parcial de Licitação Nº 30.2025.CPL.1707664.2025.001317, referente ao Item 3, no qual consta que a realização do Pregão significou uma economia de R$ 1.140.957 (um milhão, cento e quarenta mil novecentos e cinquenta e sete reais), ou seja, uma redução de aproximadamente 31,55% do valor parcial estimado pela Administração.

CONSIDERANDO o teor da Lei Federal N.º 14.133, de 01.04.2021 e do Ato n.º 008/2024/PGJ;

CONSIDERANDO a interposição de Recurso por parte da empresa E. R. SOLUÇÕES INFORMÁTICA LTDA., inscrita no CNPJ Nº 05.778.325/0005-47;

CONSIDERANDO o teor da DECISÃO Nº 35.2025.CPL.1707654.2025.001317 para NEGAR provimento ao recurso interposto pela empresa suso mencionada;

CONSIDERANDO o teor da DECISÃO Nº 7.2025.01AJ-SUBADM.1713818.2025.001317, através da qual foi mantida a DECISÃO Nº 35.2025.CPL.1707654.2025.001317, proferida pelo(a) Sr(a) Pregoeiro(a), segundo inteligência do artigo 71 c/c artigo 165, da Lei n° 14.133/2021;

RESOLVE:

I – ADJUDICAR o objeto do certame à empresa TORINO INFORMÁTICA LTDA., CNPJ (MF) n.º 03.619.767/0005-15, para o Item 3, no Valor Total de R$ 2.475.000,00 (dois milhões quatrocentos e setenta e cinco mil reais);

II - HOMOLOGAR o resultado parcial do procedimento licitatório, referente ao item 3 do PREGÃO ELETRÔNICO N.º 94.010/2025-CPL/MP/PGJ-SRP, em consonância com os Termos de Julgamentos gerados pelo Sistema Compras.gov e o Relatório Parcial de Licitação Nº 30.2025.CPL.1707664.2025.001317 e suas documentações complementares;

III – À COMISSÃO PERMANENTE DE LICITAÇÃO – CPL, para as providências cabíveis;

IV – Após, ao SETOR DE COMPRAS E SERVIÇOS - SCOMS, para prosseguimento do feito.

Cientifique-se. Publique-se. Cumpra-se.

GABINETE DO SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus (AM), 08 de setembro de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos
Ordenador de Despesas

ATOS DO COLÉGIO DE PROCURADORES DE JUSTIÇA DO MINISTÉRIO PÚBLICO

PAUTA/CPJ

PAUTA DA REUNIÃO EXTRAORDINÁRIA ADMINISTRATIVA DO EGRÉGIO COLÉGIO DE PROCURADORES DE JUSTIÇA A SER REALIZADA, PRESENCIALMENTE, EM 11 DE SETEMBRO DE 2025, ÀS 9 HORAS.

PROCURADORIA-GERAL DE JUSTIÇA

Procuradora-Geral de Justiça:
Leda Mara Nascimento Albuquerque
Subprocuradora-Geral de Justiça para Assuntos Jurídicos e Institucionais:
Anabel Vitória Pereira Mendonça de Souza
Subprocurador-Geral de Justiça para Assuntos Administrativos:
André Virgílio Belota Seffair
Corregedora-Geral do Ministério Público:
Silvana Nobre de Lima Cabral
Secretária-Geral do Ministério Público:
Wandete de Oliveira Netto

PROCURADORES DE JUSTIÇA

Câmaras Cíveis
Elvys de Paula Freitas
Sandra Cal Oliveira
Jussara Maria Pordeus e Silva
Mara Nóbia Albuquerque da Cunha
Suzete Maria dos Santos
Nilda Silva de Sousa
Delisa Olívia Vieiralves Ferreira
Jorge Michel Ayres Martins
Anabel Vitória Pereira Mendonça de Souza
Marco Aurélio Lisciotto

Câmaras Criminais
Carlos Lélio Lauria Ferreira
Marlene Franco da Silva
Mauro Roberto Veras Bezerra
Sarah Pirangy de Souza
Aguinelo Balbi Júnior
Liani Mônica Guedes de Freitas Rodrigues
Adelton Albuquerque Matos

Câmaras Reunidas
Karla Fregapani Leite
Públio Caio Bessa Cyrino
Sílvia Abdala Tuma
José Bernardo Ferreira Júnior
Neyde Regina Demósthenes Trindade
Silvana Nobre de Lima Cabral

CONSELHO SUPERIOR

Leda Mara Nascimento Albuquerque (Presidente)
Silvana Nobre de Lima Cabral
Mara Nóbia Albuquerque da Cunha
Adelton Albuquerque Matos
Elvys de Paula Freitas
Jorge Michel Ayres Martins
Nilda Silva de Sousa

OUVIDORIA
Sílvia Abdala Tuma

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MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

ATA DE REGISTRO DE PREÇO Nº 18.2025.CPL.1718108.2025.001317

PREGÃO ELETRÔNICO N.° 94.010/2025-CPL/MP/PGJ-SRP
PROCEDIMENTO INTERNO N.º 2025.001317

Pelo presente instrumento, o **MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS**, órgão gerenciador deste Registro de Preços, situado na Avenida Coronel Teixeira, n.º 7995, Bairro Nova Esperança, CEP: 69037-473, representado neste ato por seu Subprocurador-Geral de Justiça para Assuntos Administrativos, Dr. **ANDRÉ VIRGÍLIO BELOTA SEFFAIR** , inscrito no CPF sob nº 590.287.772-53, portador da Identidade Funcional nº 239 PGJ/AM, residente e domiciliado nesta Capital, e a empresa **TORINO INFORMÁTICA LTDA.** , CNPJ (MF) n.º 03.619.767/0005-15, DORAVANTE denominada **FORNECEDORA**, firmam a presente **ATA DE REGISTRO DE PREÇOS** , mediante as cláusulas e condições a seguir estabelecidas:

CLÁUSULA PRIMEIRA – DO OBJETO

A presente Ata tem por objeto registrar os preços das empresas vencedoras do certame licitatório referente ao **Pregão Eletrônico n.º 94.010/2025-CPL/MP/PGJ-SRP**, na modalidade de Sistema de Registro de Preços, para *fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses*, conforme as especificações mínimas e os quantitativos constantes do Edital do cotejo em epígrafe, descritos e qualificados na forma de seu Anexo.

I. Eis os itens registrados em favor da Fornecedora:

TORINO INFORMÁTICA LTDA., CNPJ (MF) n.º 03.619.767/0005-15

ITEM 3 - COMPUTADOR TIPO 3 - NOTEBOOK DE 14".

Quantidade registrada: 300 (trezentos) unidades.

Marca/Modelo: HP 640 G11.

Valor Unitário do Item: **R$ 8.250,00** (oito mil duzentos e cinquenta reais).

CLÁUSULA SEGUNDA – DA VALIDADE DA ATA

A presente **Ata de Registro de Preços terá validade de 12 (doze) meses**, contados a partir de sua publicação no Portal Nacional das Contratações Públicas - PNCP.

Subcláusula Primeira. O prazo de vigência da ata de registro de preços poderá ser prorrogado, por igual período de 12 (doze) meses, desde que comprovado o preço vantajoso.

Subcláusula Segunda. Durante o prazo de validade desta Ata de Registro de Preço, o MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS não será obrigado a firmar as contratações que dela poderão advir, facultando-se-lhe a realização de licitação específica para a aquisição pretendida, sendo assegurado ao beneficiário do registro preferência de fornecimento em igualdade de condições.

CLÁUSULA TERCEIRA – DA UTILIZAÇÃO DA ATA DE REGISTRO DE PREÇOS

A presente Ata de Registro de Preço poderá ser usada por todos os órgãos da Administração Pública, desde que autorizados pelo **MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS**.

Subcláusula Primeira. O preço ofertado pela(s) empresa(s) signatária(s) da presente Ata de Registro de Preços é o especificado nesta Ata.

Subcláusula Segunda. Em cada fornecimento decorrente desta Ata, serão observadas, quanto ao preço, as cláusulas e condições constantes do Edital referente a mesma.

Subcláusula Terceira. Em cada fornecimento, o preço unitário a ser pago será o constante da proposta apresentada pelas empresas detentoras da presente Ata, as quais também a integram.

CLÁUSULA QUARTA – DA CLASSIFICAÇÃO DAS PROPOSTAS

A ordem de classificação dos licitantes observará suas propostas finais ofertadas durante o certame, conforme exposto na Ata da Sessão, para fins de formação de cadastro de reserva no caso de impossibilidade de atendimento pelo primeiro colocado da ata.

CLÁUSULA QUINTA – DO FORNECIMENTO E EXECUÇÃO

A FORNECEDORA deverá efetuar a entrega do objeto contratado dentro do prazo e de acordo com as especificações constantes do Edital da licitação e deste Instrumento, observando estreitamente as prescrições e as recomendações do fabricante, a legislação estadual ou municipal, se houver, bem como outras normas correlatas, ainda que não estejam explicitamente aqui citadas.

Subcláusula Primeira. Os materiais deverão ser industrializados, de primeiro uso, novos, sem qualquer vício ou avaria, entregues acondicionados adequadamente em suas embalagens originais lacradas, acompanhados de guias e manuais de utilização, se for o caso, com garantia do fabricante, devendo, se for o caso, constar em suas embalagens suas respectivas especificações, sob pena de ser recusado.

Subcláusula Segunda. Responsabilizar-se pelo transporte dos produtos, desde o local da embalagem até a sua entrega no horário e endereço indicados pela ADQUIRENTE.

Subcláusula Terceira. Apresentar justificativa por escrito, devidamente comprovada, nos casos de ocorrência de fato superveniente, excepcional ou imprevisível, estranho à vontade das partes, e de impedimento de execução por fato ou ato de terceiro reconhecido pela ADQUIRENTE em documento contemporâneo a sua ocorrência, quando não puder cumprir os prazos estipulados para a execução, total ou parcial, do objeto.

Subcláusula Quarta. Aceitar todas as decisões, métodos de inspeção, verificação e controle, obrigando-se a fornecer todos os dados, elementos e explicações que o MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS julgar necessário.

Subcláusula Quinta. Manter, durante toda a execução da Ata de Registro de Preços, em compatibilidade com as obrigações assumidas, todas as condições de habilitação e qualificação exigidas na licitação.

Subcláusula Sexta. A empresa vencedora, quando da solicitação do material, deverá retirar a nota de empenho no prazo de 5 (cinco) dias úteis a contar da comunicação efetivada, **sob pena de decair o direito à contratação.**

I - Como condição inafastável para que seja emitida Nota de Empenho à Fornecedora, esta deverá, também, estar cadastrada junto ao **SISTEMA DE ADMINISTRAÇÃO FINANCEIRA E CONTABILIDADE – CADASTRAMENTO DE CREDORES – da SECRETARIA DA FAZENDO DO ESTADO DO AMAZONAS – SEFAZ.**

II - Como condição para emissão da nota de empenho a licitante vencedora deverá manter as mesmas condições de habilitação, cuja confirmação será feita através de consulta ao SICAF ou através da internet nos respectivos sites dos órgãos emissores das certidões de regularidade fiscal.

III - O prazo de convocação poderá ser prorrogado uma vez, por igual período, quando solicitado pela vencedora durante o seu transcurso, desde que ocorra motivo justificado e aceito pela Administração.

IV - Se a licitante vencedora não apresentar situação de regularidade documental, no ato da emissão da nota de empenho, ou recusar-se injustificadamente a receber a nota de empenho no prazo estabelecido, os demais licitantes serão convocados para celebrar o contrato, observada a ordem de classificação, e assim sucessivamente, sem prejuízo da aplicação das sanções cabíveis.

Subcláusula Sétima. Alternativamente à convocação para comparecer perante o órgão ou entidade para a assinatura do Termo de Contrato ou aceite do instrumento equivalente, a Administração poderá encaminhá-lo para assinatura ou aceite da Adjudicatária, mediante correspondência eletrônica no e-mail constante da proposta, para que seja assinado eletronicamente pelo Sistema SEI ou aceito no prazo de 05 (cinco) dias, a contar da data de seu recebimento.

CLÁUSULA SEXTA – DA ENTREGA E DO RECEBIMENTO

As solicitações do material serão efetuadas pela **DIRETORIA DE TECNOLOGIA DE INFORMAÇÃO E COMUNICAÇÃO - DTIC**, mediante Nota de Autorização de Fornecimento, ou documento equivalente, disponibilizada e enviada, preferencialmente de forma eletrônica, à FORNECEDORA, devendo ser assinada eletronicamente via Sistema SEI por funcionário/representante da FORNECEDORA. As autorizações de fornecimento para a prestação dos serviços objeto do contrato serão expedidas conforme necessidade da ADQUIRENTE.

Subcláusula Primeira. O material solicitado deverá ser entregue **no prazo**

máximo de 90 (noventa) dias corridos, contados a partir do recebimento da autorização de fornecimento de materiais e serviços ou a partir da aprovação da amostra, conforme o caso.

Subcláusula Segunda. O recebimento dos produtos será realizado pelo **SETOR DE PATRIMÔNIO E MATERIAL - SPAT** , na forma prevista no art. 140 da Lei nº 14.133/2021, mediante Nota de Entrega ou documento equivalente, que deverá conter apenas os materiais e/ou serviços nas quantidades efetivamente solicitadas e entregues, observando-se as disposições constantes do item 5 e 10 do TERMO DE REFERÊNCIA Nº 2.2025.DTIC.1525128.2025.001317

Subcláusula Terceira. O RECEBIMENTO PROVISÓRIO dos materiais não constitui aceitação deles.

Subcláusula Quarta. AO RECEBIMENTO PROVISÓRIO ou DEFINITIVO do objeto não exclui a responsabilidade civil a ele relativa, nem a ético-profissional, pela perfeita execução do objeto desta Ata.

Subcláusula Quinta. A descoberta de defeitos, falhas ou imperfeições ocultas que impeçam ou reduzam a usabilidade dos materiais, verificados após o seu pagamento, implicará na obrigação da FORNECEDORA de substituí-los/refazê-los no prazo máximo de 3 (três) dias corridos a contar da comunicação pela ADQUIRENTE.

Subcláusula Sexta. A FORNECEDORA será responsável pelo transporte dos produtos, desde o local de sua fabricação/embalagem, conforme o caso, até o local de sua entrega, em dias úteis, no horário das 9h00 às 15h00 (horário de Brasília), no seguinte endereço: **Av. Coronel Teixeira, n.º 7.995 – Nova Esperança, CEP. 69037- 473 / Manaus-AM.**

Subcláusula Sétima. A entrega dos materiais deverá ser previamente agendada com o **SETOR DE PATRIMÔNIO E MATERIAL – SPAT, pelo telefone (92) 3655-0766 ou e-mail** *material@mpam.mp.br*.

Subcláusula Oitava. A FORNECEDORA ficará obrigado a atender a todos os pedidos efetuados durante a vigência desta ata, mesmo se a entrega deles decorrente estiver prevista para data posterior a do seu vencimento.

Subcláusula Nona. A FORNECEDORA deverá, obrigatoriamente, entregar a totalidade do produto solicitado, não sendo admitido o parcelamento, sob pena das sanções legais cabíveis, acompanhados dos manuais correspondentes e termos de garantia, quando necessário.

Subcláusula Décima. O não cumprimento do prazo de entrega poderá caracterizar inexecução contratual, parcial ou total, e acarretar a aplicação de sanções administrativas previstas em Edital.

Subcláusula Onze. Não será obrigação da ADQUIRENTE aguardar mais demandas para agrupar solicitações de mais de uma unidade nos processos de compra.

CLÁUSULA SÉTIMA – DO PAGAMENTO

O pagamento devido à CONTRATADA será creditado em conta-corrente por meio de ordem bancária, efetuado mediante apresentação de nota fiscal/fatura atestada e visada pelos órgãos de fiscalização e acompanhamento do fornecimento do material, no prazo não superior a trinta dias, contados a partir do atesto da Administração na fatura apresentada.

I – A respectiva nota fiscal/fatura dos produtos, emitidas em conformidade com o Protocolo ICMS 42/2009 (NF-e), deverá estar devidamente discriminada, em nome da **PROCURADORIA-GERAL DE JUSTIÇA, CNPJ n.º 04.153.748/0001-**

85, e acompanhada das respectivas Certidões Negativas de Débito para com a Seguridade Social, para com o Fundo de Garantia por Tempo de Serviço, e ainda, Certidão Negativa de Débito Trabalhista, Certidão de regularidade junto a Fazenda Federal, Estadual e Municipal;

II – Nenhum pagamento será efetuado à CONTRATADA enquanto pendente de liquidação qualquer obrigação financeira que lhe for imposta, em virtude de penalidade ou inadimplência.

Subcláusula Primeira. Qualquer atraso ocorrido na apresentação da nota fiscal/fatura, ou dos documentos exigidos como condição de pagamento por parte da CONTRATADA, importará em prorrogação automática do prazo de vencimento da obrigação do Contratante.

Subcláusula Segunda. Nenhum pagamento isentará o fornecedor das responsabilidades atinentes ao produto, nem tampouco implicará a aprovação definitiva da entrega, total ou parcialmente.

Subcláusula Terceira. Nos casos de eventuais atrasos de pagamento, desde que a CONTRATADA não tenha concorrido de alguma forma para tanto, fica convencionado que os encargos moratórios devidos pela CONTRATANTE, entre a data de vencimento e a do dia do efetivo pagamento da Fatura/Nota Fiscal, a serem incluídos na fatura do mês seguinte ao da ocorrência, serão calculados por meio da aplicação da seguinte fórmula:

EM = I x N x VP, onde:

EM = Encargos moratórios;

N = Número de dias entre a data prevista para o pagamento e a do efetivo pagamento;

VP = Valor da parcela em atraso.

I = Índice de compensação financeira = 0,00016438, assim apurado:

$$I = \frac{i}{365} = I = \frac{6/100}{365} = I = 0,00016438$$

Onde i = taxa percentual anual no valor de 6%”.

Subcláusula Quarta. Nenhum pagamento será efetivado sem que a área solicitante, emita o Termo de Recebimento Definitivo e ateste que o objeto contratado está integralmente sendo entregue/disponibilizado pela FORNECEDORA.

CLÁUSULA OITAVA – DAS PENALIDADES

Se a FORNECEDORA, sem justa causa, não cumprir as obrigações assumidas ou infringir preceitos legais, serão aplicadas as **sanções previstas no TERMO DE REFERÊNCIA Nº 2.2025.DTIC.1525128.2025.001317 e no Edital da Licitação**, segundo a gravidade da falta, observando-se os limites estabelecidos no **item 22.4 do instrumento convocatório.**

Subcláusula Primeira. A inexecução total ou parcial do contrato enseja a sua rescisão pelos motivos legais.

Subcláusula Segunda. Caso a multa aplicada seja superior ao valor da garantia

prestada, além da perda desta, responderá a FORNECEDORA pela sua diferença, a qual será descontada dos pagamentos eventualmente devidos pelo MPAM ou ainda, quando for o caso, cobrada judicialmente.

Subcláusula Terceira. O Ministério Público do Estado do Amazonas poderá cobrar o valor remanescente judicialmente, conforme artigo 419 do Código Civil, quando o valor da multa não for suficiente para cobrir os prejuízos causados pela conduta da FORNECEDORA.

Subcláusula Quarta. Se, durante o processo de aplicação de penalidade, houver indícios de prática de infração administrativa tipificada pela Lei nº 12.846, de 1º de agosto de 2013, como ato lesivo à Administração Pública nacional ou estrangeira, cópias do processo administrativo necessárias à apuração da responsabilidade da empresa deverão ser remetidas à autoridade competente, com despacho fundamentado, para ciência e decisão sobre a eventual instauração de investigação preliminar ou Processo Administrativo de Responsabilização – PAR.

Subcláusula Quinta. A apuração e o julgamento das demais infrações administrativas não consideradas como ato lesivo à Administração Pública nacional ou estrangeira nos termos da Lei nº 12.846, de 1º de agosto de 2013, seguirão seu rito normal na unidade administrativa.

Subcláusula Sexta. O processamento do PAR não interfere no seguimento regular dos processos administrativos específicos para apuração da ocorrência de danos e prejuízos à Administração Pública Estadual resultantes de ato lesivo cometido por pessoa jurídica, com ou sem a participação de agente público.

CLÁUSULA NONA – DO REEQUILÍBRIO CONTRATUAL

Subcláusula Primeira. O preço registrado poderá ser revisto em decorrência de eventual redução daqueles praticados no mercado, ou de fato que eleve o custo dos serviços ou bens registrados, cabendo ao órgão gerenciador promover as necessárias negociações junto aos fornecedores ou, se houver, após a data da apresentação da proposta, criação, alteração ou extinção de quaisquer tributos ou encargos legais ou a superveniência de disposições legais, com comprovada repercussão sobre os preços contratados.

Subcláusula Segunda. Quando o preço inicialmente registrado, por motivo superveniente, tornar-se superior ao praticado no mercado, o órgão gerenciador deverá:

a) convocar o fornecedor visando a negociação para redução de preços e sua adequação ao praticado no mercado; frustrada a negociação, o fornecedor será liberado do compromisso assumido;

b) convocar os demais fornecedores, visando igual oportunidade de negociação.

Subcláusula Terceira. Quando o preço de mercado torna-se superior aos preços registrados e o fornecedor, mediante requerimento devidamente comprovado, não puder cumprir o compromisso, o órgão gerenciador poderá:

a) liberar o fornecedor do compromisso assumido, sem aplicação da penalidade, confirmado a veracidade dos motivos e comprovantes apresentados, e se a comunicação ocorrer antes do pedido de fornecimento; e

b) convocar os demais fornecedores, visando igual oportunidade de negociação.

Subcláusula Quarta. Não havendo êxito nas negociações, o órgão gerenciador deverá proceder à revogação da Ata de Registro de Preços, adotando as medidas cabíveis para a obtenção da contratação mais vantajosa.

CLÁUSULA DEZ – DO REAJUSTE DOS PREÇOS

O(s) preço(s) registrado(s) nesta Ata somente poderá(ão) ser alterado(s) nos casos de prorrogação da ata de registro de preços, ocasião em que haverá o REAJUSTE com base no IPCA acumulado.

CLÁUSULA ONZE – DA FISCALIZAÇÃO

O Ordenador de Despesas delega competência a servidor responsável pela **DIRETORIA DE TECNOLOGIA DA INFORMAÇÃO E COMUNICAÇÃO - DTIC da PROCURADORIA GERAL DE JUSTIÇA**, para solicitar a aquisição do objeto ora registrado e fiscalizar a execução desta Ata de Registro de Preços.

CLÁUSULA DOZE – DOS DIREITOS E DAS OBRIGAÇÕES

Subcláusula Primeira. Compete ao órgão gerenciador:

a) Acompanhar e fiscalizar, como lhe aprouver e no seu exclusivo interesse, na forma prevista na Lei nº 14.133, de 1º de abril de 2021, que dispõe sobre a Lei de Licitações e Contratos Administrativos, o exato cumprimento das obrigações previstas neste Termo.

b) Designar servidor qualificado para acompanhar a(s) entrega(s) do objeto e o cumprimento dos termos contratuais, editalícios e seus anexos;

c) Registrar e notificar o fornecedor, por escrito, a ocorrência de eventuais imperfeições, defeitos, vícios, vencimento do produto, fixando prazo para a sua substituição;

d) Rejeitar, no todo ou em parte, os produtos entregues em desacordo com as especificações deste Termo;

e) Efetuar regularmente o pagamento à Contratada, dentro dos critérios estabelecidos neste Termo, após o cumprimento das formalidades legais, por meio de Ordem Bancária, após o “atesto” das notas fiscais, bem como da apresentação pela Contratada dos demais documentos exigidos para tal fim (requerimento de pagamento, recibo de pagamento, certidões: Federal, Estadual, Municipal, Trabalhista e FGTS).

Subcláusula Segunda. Compete às Entidades Participantes destinatários:

a) Requisitar o fornecimento de materiais cujos preços encontram-se registrados nesta Ata.

b) Emitir Nota de Empenho a crédito do fornecedor no valor total correspondente a quantidade de material solicitado.

c) Elaborar termo contratual, quando necessário nas situações previstas em Lei.

d) Efetuar o pagamento referente a aquisição do material nos termos previstos no edital da Licitação de Registro de Preços.

Subcláusula Terceira. Compete à FORNECEDORA, além daquelas previstas no subitem 7.1 do TERMO DE REFERÊNCIA Nº 2.2025.DTIC.1525128.2025.001317, Anexo I:

a) Fornecer durante 12 (doze) meses, a contar da publicação do extrato desta Ata na Imprensa Oficial, os itens relacionados na presente Ata, na forma e condições fixadas no Edital e na proposta, mediante autorização e Nota de Empenho, devidamente assinada pelo responsável, em conformidade com o

Edital e demais informações constantes da Licitação de Registro de Preços.

b) Retirar a Nota de Empenho no prazo de até 05 (cinco) dias úteis, contados da intimação para recebimento, nos termos do Edital, parte integrante desta Ata de Registro de Preços.

c) Entregar os materiais no local previsto no instrumento convocatório, de acordo com os termos do Edital.

d) Providenciar a imediata correção das deficiências, falhas ou irregularidades constatadas pelos órgãos e entidades referentes à forma de fornecimento dos materiais e ao cumprimento das demais obrigações assumidas nesta Ata.

e) Em havendo necessidade, assente no que preceitua o art. 124, I, c/c Art. 125 da Lei Federal nº 14.133, de 1 de abril de 2.021, aceitar os acréscimos ou supressões nos quantitativos que se fizerem indispensáveis, sempre nas mesmas condições registradas.

f) Ressarcir os prejuízos causados ao Estado do Amazonas ou a terceiros, provocados por ineficiência ou irregularidade cometidas na execução das obrigações assumidas na presente Ata;

g) Cumprir as obrigações descritas no Edital e seus Anexos.

CLÁUSULA TREZE – DO CANCELAMENTO DA ATA E REGISTRO DE PREÇOS

Esta Ata de Registro de Preços poderá ser cancelada, de pleno direito:

I - Pela Administração, quando:

a) a detentora não cumprir as obrigações constantes desta Ata de Registro de Preços;

b) a detentora não assinar o contrato no prazo estabelecido e a Administração não aceitar sua justificativa;

c) a detentora der causa a rescisão administrativa de contrato decorrente de registro de preços;

d) em qualquer das hipóteses de inexecução total ou parcial de contrato decorrente do registro de preços;

e) os preços registrados se apresentarem superiores aos praticados no mercado;

f) por razões de interesse público devidamente demonstradas e justificadas pela Administração;

II - Pelas detentoras, quando, mediante solicitação por escrito, comprovarem estar impossibilitadas de cumprir as exigências desta Ata de Registro de Preços.

Subcláusula Primeira. A solicitação das detentoras para cancelamento dos preços registrados deverá ser dirigida ao FISCAL da Ata de Registro de Preços ou à COMISSÃO PEMANENTE DE LICITAÇÃO por meio do endereço eletrônico protocolo@mpam.mp.br.

Subcláusula Segunda. A comunicação do cancelamento do preço registrado, nos casos previstos neste documento e, a oportunização do contraditório e ampla defesa, serão feitos por correio eletrônico (preferencialmente) nos endereços de e-mails constantes da Proposta de Preços e SICAF ou por correspondência com aviso de recebimento ou, ainda, por meio de entrega pelo Setor de Transportes (no caso de empresa sediada no mesmo município da Contratante), juntando-se o comprovante aos autos que deram origem ao registro de preços.

Subcláusula Terceira. No caso de ser ignorado, incerto ou inacessível o endereço da detentora, a comunicação será feita por publicação na IMPRENSA OFICIAL, considerando-se cancelado o preço registrado após a publicação.

CLÁUSULA CATORZE - DA POSSIBILIDADE DE ADESÃO POR ÓGÃOS OU ENTIDADES NÃO PARTICIPANTES

Subcláusula Primeira. Esta Ata de Registro de Preços poderá, durante sua vigência, ser utilizada por outros órgãos ou entidades da Administração Pública que não tenham participado do processo licitatório, desde que:

a) exista solicitação formal do órgão ou entidade não participante;

b) haja anuência do órgão gerenciador e do fornecedor registrado quanto à possibilidade de atendimento da demanda adicional;

c) seja demonstrada, de forma justificada, a vantagem da adesão;

d) sejam observados os limites e condições previstos no edital e na legislação aplicável.

Subcláusula Segunda. A adesão dar-se-á em caráter **excepcional e pontual**, sendo **vedada sua utilização como instrumento de suprimento contínuo ao longo do exercício financeiro**, sob pena de descaracterização da finalidade do sistema de registro de preços.

Subcláusula Terceira. A contar da data da autorização formal para adesão, o órgão ou entidade solicitante disporá do prazo **improrrogável de 90 (noventa) dias corridos** para concluir o respectivo processo de contratação, com a formalização do instrumento contratual ou equivalente.

a) O não cumprimento do prazo referido nesta subclásula implicará a **automática perda do direito à adesão**, tornando sem efeito a autorização concedida e autorizando o órgão gerenciador a dispor dos quantitativos eventualmente reservados.

b) A reiteração de pedidos de adesão não concluídos no prazo estabelecido poderá ensejar o indeferimento de futuras solicitações do mesmo órgão ou entidade, sem prejuízo da comunicação aos órgãos de controle.

Subcláusula Quarta. As contratações decorrentes de adesão deverão observar integralmente as condições pactuadas nesta Ata de Registro de Preços, inclusive no que se refere a preços, prazos, especificações, obrigações, penalidades e vigência.

Subcláusula Quinta. O órgão ou entidade aderente será responsável pela condução do respectivo processo de contratação, pela execução contratual e pela aplicação de sanções administrativas, nos termos da legislação vigente.

Subcláusula Sexta. É vedada ao órgão ou entidade não participante a modificação unilateral das condições constantes nesta Ata, salvo nas hipóteses previstas em lei e com a concordância expressa do fornecedor.

CLÁUSULA QUINZE - DA AUTORIZAÇÃO PARA AQUISIÇÃO E EMISSÃO DAS ORDENS DE FORNECIMENTO

As aquisições do objeto da presente Ata de Registro de Preços serão autorizadas, caso a caso, pelo(a) Ordenador(a) de Despesas do **MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS.**

Subcláusula Primeira. A emissão das autorizações de fornecimento, sua retificação ou cancelamento, total ou parcial serão igualmente autorizados pelo

órgão requisitante.

Subcláusula Segunda. Durante o prazo de validade do Registro de Preços, o **MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS** poderá ou não contratar o objeto deste pregão;

CLÁUSULA DEZESSEIS – DAS DISPOSIÇÕES FINAIS E DO FORO:

Subcláusula Primeira: Integram esta Ata, o Edital do **Pregão Eletrônico n.º 94010/2025-CPL/MP/PGJ-SRP** e as propostas da Fornecedora.

Subcláusula Segunda: Durante a vigência da Ata de Registro de Preços, os preços deverão ser compatíveis com a conjuntura do mercado.

Subcláusula Terceira: Os pedidos de alteração de marcas e/ou modelo do objeto registrado deverão ser protocolados em até **5 (cinco) dias do recebimento da Nota de Empenho**, com a devida documentação comprobatória dos fatos alegados, sob pena de não apreciação dos pedidos por inépcia.

Subcláusula Quarta: Fica eleito o Foro da Cidade de Manaus/AM para dirimir quaisquer questões decorrentes da utilização da presente ata.

Subcláusula Quinta: Os casos omissos serão resolvidos de acordo com as disposições constantes do Ato n.º 008/2024/PGJ e da Lei 14.133/2021, e das demais normas legais aplicáveis.

Manaus (AM), 10 de setembro de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
SUBPROCURADOR-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS
Ordenador de Despesas

TORINO INFORMATICA LTDA.
CNPJ Nº 03.619.767/0005-15
RODRIGO DO AMARAL RISSIO
SÓCIO-PROCURADOR
CPF: 220.807.218-95

Documento assinado eletronicamente por **André Virgílio Belota Seffair**, **Subprocurador(a)-Geral de Justiça para Assuntos Administrativos**, em 10/09/2025, às 13:54, conforme art. 1º, III, "b", da Lei 11.419/2006.

Documento assinado eletronicamente por **Rodrigo do Amaral Rissio**, **Usuário Externo**, em 12/09/2025, às 07:22, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1718108** e o código CRC **802C0B33**.

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

EXTRATO Nº 17.2025.CPL.1718112.2025.001317

EXTRATO DA ATA DE REGISTRO DE PREÇOS Nº 18.2025.CPL.1718108.2025.001317

PREGÃO ELETRÔNICO N.° 94.010/2025-CPL/MP/PGJ-SRP
PROCEDIMENTO INTERNO N.º 2025.001317

INTERESSADO: MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS.

Aos vinte e três dias do mês de julho do ano de dois mil e vinte e cinco, no Órgão Gerenciador, é registrado o preço da empresa abaixo mencionada, para *formação de registro de preços para fornecimento de equipamentos de informática, quais sejam,* ***estações de trabalho e computadores portáteis****, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses*, conforme as especificações mínimas e os quantitativos constantes do Edital do Pregão Eletrônico em epígrafe, descritos e qualificados na forma de seu Anexo. As especificações constantes do respectivo Processo, assim como os termos das propostas de preços, integram o presente registro, independentemente de transcrição. O contrato, ou instrumento hábil que vier a substituí-lo, na forma do art. 95 da Lei n.° 14.133/21, indicará o(s) local(is) de entrega dos produtos/prestação do(s) serviço(s). **O presente registro terá vigência de 12 (doze) meses**, contados a partir de sua publicação no Portal Nacional de Compras Públicas - PNCP e no Diário Oficial Eletrônico do Ministério Público do Estado do Amazonas - DOMPE.

ATA DE REGISTRO DE PREÇO Nº 18.2025.CPL.1718108.2025.001317

TORINO INFORMÁTICA LTDA., CNPJ (MF) n.º 03.619.767/0005-15

ITEM 3 - COMPUTADOR TIPO 3 - NOTEBOOK DE 14".

Quantidade registrada: 300 (trezentos) unidades.

Marca/Modelo: HP 640 G11.

Valor Unitário do Item: **R$ 8.250,00** (oito mil duzentos e cinquenta reais).

DA FISCALIZAÇÃO DA ATA DE REGISTRO DE PREÇOS

O Ordenador de Despesas delega competência aos servidores responsáveis pela **DIRETORIA DE TECNOLOGIA DA INFORMAÇÃO E COMUNICAÇÃO - DTIC** desta PROCURADORIA GERAL DE JUSTIÇA, para solicitar a aquisição do objeto ora registrado e fiscalizar a execução desta Ata de Registro de Preços.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos
Ordenador de Despesas

Documento assinado eletronicamente por **André Virgílio Belota Seffair**, **Subprocurador(a)-Geral de Justiça para Assuntos Administrativos**, em 10/09/2025, às 13:54, conforme art. 1º, III, "b", da Lei 11.419/2006.

A autenticidade do documento pode ser conferida no link http://sei.mpam.mp.br/sei/controlador_externo.php?acao=documento_conferir&id_orgao_acesso_externo=0 informando o código verificador **1718112** e o código CRC **FA468460**.

Ata de Registro de Preços

Ata de Registro de Preços

Número:	00018/2025
Situação:	Ativa
Unidade gerenciadora da ata:	925849 - PROCURADORIA GE
Tipo UASG:	Gerenciadora
Vigência inicial:	12/09/2025
Vigência final:	13/09/2026
Número da compra/Ano:	94010/2025
Número do processo:	2025.001317
Data da assinatura:	10/09/2025
Valor total:	R$ 2.475.000,00
Autoridades:	
Modalidade da compra:	05 - Pregão
Compra centralizada:	Não

Unidade participante:

Código	UASG	Tipo
925849	PROCURADORIA GE	Gerenciadora

Item da ata:

CNPJ	Fornecedor (Classificação)	Número	Item	Quantidade Registrada	Valor unitário	Valor total	Qtd. limte adesão	Qtd. limte adesão informada na compra	Aceita adesão
03.619.767/0005-15	TORINO INFORMATICA LTDA.. (001)	00003	NOTEBOOK, TELA ATÉ 14 POL, INTERATIVIDADE DA TELA SEM INTERATIVIDADE, MEMÓRIA RAM SUPERIOR A 8 GB, NÚCLEOS POR PROCESSADOR 4 A 8, ARMAZENAMENTO HDD SEM DISCO HDD GB, ARMAZENAMENTO SSD 110 A 300, BATERIA ATÉ 4 CÉLULAS, ALIMENTAÇÃO BIVOLT AUTOMÁTICA, SISTEMA OPERACIONAL PROPRIETÁRIO, GARANTIA ON SITE 12 MESES	300,00000	8.250,0000	2.475.000,0000	600	600	Sim

Data da criação da ata: 12/09/2025, 10:42

Histórico da ata:

Situação	Data/hora
Ata Inicial	12/09/2025 10:42

Ações

pagamento de 4,5 (quatro e meia) diárias, na forma da lei, para o custeio de alimentação e pousada;

III – DETERMINAR, dentro do prazo legal, a apresentação do relatório de prestação de contas de diárias, em conformidade com as exigências do Ato PGJ n.° 002/2011, de 06.01.2011, alterado pelo Ato PGJ n.º 067/2012, de 20.03.2012.

Publique-se, registre-se, cumpra-se.

SUBPROCURADORIA-GERAL DE JUSTIÇA PARA ASSUNTOS ADMINISTRATIVOS, em Manaus/AM, 12 de setembro de 2025.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador-Geral de Justiça para Assuntos Administrativos

EXTRATO Nº 17.2025.CPL.1718112.2025.001317

EXTRATO DA ATA DE REGISTRO DE PREÇOS Nº 18.2025.CPL.1718108.2025.001317

PREGÃO ELETRÔNICO N.° 94.010/2025-CPL/MP/PGJ-SRP
PROCEDIMENTO INTERNO N.º 2025.001317

INTERESSADO: MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS.

Aos vinte e três dias do mês de julho do ano de dois mil e vinte e cinco, no Órgão Gerenciador, é registrado o preço da empresa abaixo mencionada, para formação de registro de preços para fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses, conforme as especificações mínimas e os quantitativos constantes do Edital do Pregão Eletrônico em epígrafe, descritos e qualificados na forma de seu Anexo. As especificações constantes do respectivo Processo, assim como os termos das propostas de preços, integram o presente registro, independentemente de transcrição. O contrato, ou instrumento hábil que vier a substituí-lo, na forma do art. 95 da Lei n.° 14.133/21, indicará o(s) local(is) de entrega dos produtos/prestação do(s) serviço(s). O presente registro terá vigência de 12 (doze) meses, contados a partir de sua publicação no Portal Nacional de Compras Públicas - PNCP e no Diário Oficial Eletrônico do Ministério Público do Estado do Amazonas - DOMPE.

ATA DE REGISTRO DE PREÇO Nº 18.2025.CPL.1718108.2025.001317

TORINO INFORMÁTICA LTDA., CNPJ (MF) n.º 03.619.767/0005-15

ITEM 3 - COMPUTADOR TIPO 3 - NOTEBOOK DE 14".
Quantidade registrada: 300 (trezentos) unidades.
Marca/Modelo: HP 640 G11.
Valor Unitário do Item: R$ 8.250,00 (oito mil duzentos e cinquenta reais).

DA FISCALIZAÇÃO DA ATA DE REGISTRO DE PREÇOS

O Ordenador de Despesas delega competência aos servidores responsáveis pela DIRETORIA DE TECNOLOGIA DA INFORMAÇÃO E COMUNICAÇÃO - DTIC desta PROCURADORIA GERAL DE JUSTIÇA, para solicitar a aquisição do objeto ora registrado e fiscalizar a execução desta Ata de Registro de Preços.

ANDRÉ VIRGÍLIO BELOTA SEFFAIR
Subprocurador Geral de Justiça para Assuntos Administrativos
Ordenador de Despesas

ATOS DA PROMOTORIA DE JUSTIÇA

EXTRATO DE PROMOTORIA

EXTRATO DA PORTARIA DE INSTAURAÇÃO DE PROCEDIMENTO ADMINISTRATIVO

PROMOTORIA: Promotoria de Justiça de Nhamundá
PROCESSO: 254.2025.000097
CLASSE PROCESSUAL: 910034 - Procedimento Administrativo de outras atividades não sujeitas a inquérito civil
INTERESSADO (POLO ATIVO): Promotoria de Justiça de Nhamundá (de ofício)
INTERESSADOS (POLO PASSIVO): Prefeitura Municipal de Nhamundá, Superintendência Regional do DNIT no estado do Amazonas, Comando da Agência Fluvial de Parintins, Gerência do Banco Bradesco e da Agência Lotérica de Nhamundá, Comando do 2º Grupamento de Polícia Militar, 43ª Delegacia Interativa de Polícia Civil, Secretaria Municipal de Saúde, Secretaria Municipal de Segurança Pública, Comando do Corpo de Bombeiros Militar, Secretaria Municipal de Defesa Civil, Instituto de Defesa do Consumidor do Amazonas (PROCON-AM), Secretaria Municipal de Meio Ambiente, Vigilância Sanitária Municipal, Secretaria Municipal de Assistência Social, Conselho Tutelar de Nhamundá.
FINALIDADE: Dar ciência da instauração de Procedimento Administrativo para fiscalizar preventivamente a 30ª Festa da Pesca ao Tucunaré, requisitando informações e expedindo recomendações para assegurar uma atuação coordenada dos órgãos públicos na proteção dos direitos da criança e do adolescente, na garantia da segurança e saúde públicas, na defesa do consumidor e na preservação do meio ambiente durante o evento.
OBJETO: Fiscalizar e acompanhar a realização da 30ª Festa da Pesca ao Tucunaré, que ocorrerá nos dias 03, 04 e 05 de outubro de 2025, no Município de Nhamundá/AM, visando assegurar a proteção dos direitos da criança e do adolescente, a segurança pública, a saúde pública, a defesa do consumidor e a preservação do meio ambiente.
PRAZO: não se aplica
DATA: 12 de setembro de 2025
PROMOTORA DE JUSTIÇA: Ana Carolina Arruda Vasconcelos, Promotora de Justiça Substituta

AVISO

VISO DE ARQUIVAMENTO

O Promotor de Justiça Dr. José Felipe da Cunha Fish, da 99ª Promotoria de Justiça de Manaus/AM, no uso de suas atribuições, Notifica o(a) Sr(a). Ewerton Sousa Amaral, sobre a DECISÃO DE ARQUIVAMENTO dos Autos n° 0117613-89.2025.8.04.1000. As razões do arquivamento estão expostas no Documento de Págs. 6-8 que se encontra à disposição nesta Promotoria de Justiça.

Manaus (AM), 4 de setembro de 2025.

José Felipe da Cunha Fish
Promotor de Justiça

PROCURADORIA-GERAL DE JUSTIÇA

Procuradora-Geral de Justiça:
Leda Mara Nascimento Albuquerque
Subprocuradora-Geral de Justiça para Assuntos Jurídicos e Institucionais:
Anabel Vitória Pereira Mendonça de Souza
Subprocurador-Geral de Justiça para Assuntos Administrativos:
André Virgílio Belota Seffair
Corregedora-Geral do Ministério Público:
Silvana Nobre de Lima Cabral
Secretária-Geral do Ministério Público:
Wandete de Oliveira Netto

PROCURADORES DE JUSTIÇA

Câmaras Cíveis
Elvys de Paula Freitas
Sandra Cal Oliveira
Jussara Maria Pordeus e Silva
Mara Nóbia Albuquerque da Cunha
Suzete Maria dos Santos
Nilda Silva de Sousa
Delisa Olívia Vieiralves Ferreira
Jorge Michel Ayres Martins
Anabel Vitória Pereira Mendonça de Souza
Marco Aurélio Lisciotto

Câmaras Criminais
Carlos Lélio Lauria Ferreira
Marlene Franco da Silva
Mauro Roberto Veras Bezerra
Sarah Pirangy de Souza
Aguinelo Balbi Júnior
Liani Mônica Guedes de Freitas Rodrigues
Adelton Albuquerque Matos

Câmaras Reunidas
Karla Fregapani Leite
Públio Caio Bessa Cyrino
Sílvia Abdala Tuma
José Bernardo Ferreira Júnior
Neyde Regina Demósthenes Trindade
Silvana Nobre de Lima Cabral

CONSELHO SUPERIOR

Leda Mara Nascimento Albuquerque (Presidente)
Silvana Nobre de Lima Cabral
Mara Nóbia Albuquerque da Cunha
Adelton Albuquerque Matos
Elvys de Paula Freitas
Jorge Michel Ayres Martins
Nilda Silva de Sousa

OUVIDORIA
Sílvia Abdala Tuma

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA-GERAL DE JUSTIÇA
SETOR DE COMPRAS E SERVIÇOS

ATA DE REGISTRO DE PREÇO Nº 18.2025.CPL.1718108.2025.001317
PREGÃO ELETRÔNICO 94.010/2025-CPL/MP/PGJ-SRP

OBJETO	COMPRASNET	LOTES	PROCESSO	DOMPE	PNCP	VALIDADE
Fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.	---		2025.001317	3162 12/09/2025	12/09/2025	13/09/2026

FORNECEDOR	ITEM	ESPECIFICAÇÃO	UNIDADE	QTD	VALOR UNITÁRIO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	VALOR TOTAL	VALOR UTILIZADO	SALDO	UNIDADES FORNECIDAS	UNIDADES DISPONÍVEIS
TORINO INFORMÁTICA LTDA CNPJ sob N.º 03.619.767/0005-15	1	COMPUTADOR TIPO 3 - NOTEBOOK DE 14" Marca/Modelo: HP 640 G11.	UNIDADE	300	R$ 8,250.00																					R$ 2,475,000.00	R$ 0.00	R$ 2,475,000.00	0	300
																										R$ 2,475,000.00	**R$ 0.00**	**R$ 2,475,000.00**		

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
PROCURADORIA-GERAL DE JUSTIÇA
SETOR DE COMPRAS E SERVIÇOS

ATA DE REGISTRO DE PREÇO Nº 18.2025.CPL.1718108.2025.001317
PREGÃO ELETRÔNICO 94.010/2025-CPL/MP/PGJ-SRP

OBJETO	COMPRASNET	PROCESSO	DOMPE	PNCP	VALIDADE
Fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.	---	2025.001317	3162 12/09/2025	12/09/2025	13/09/2026

FORNECEDOR	ITEM	ESPECIFICAÇÃO	UNIDADE	QTD	VALOR UNITÁRIO	VALOR TOTAL	VALOR UTILIZADO	SALDO	UNIDADES FORNECIDAS	UNIDADES DISPONÍVEIS	STATUS DE DISPONIBILIDADE DE SALDO DA ARP	
TORINO INFORMÁTICA LTDA CNPJ sob N.º 03.619.767/0005-15	1	COMPUTADOR TIPO 3 - NOTEBOOK DE 14" Marca/Modelo: HP 640 G11.	UNIDADE	300	R$ 8,250.00	R$ 2,475,000.00	R$ 0.00	R$ 2,475,000.00	0	300	100%	
						R$ 2,475,000.00	**R$ 0.00**	**R$ 2,475,000.00**				

MINISTÉRIO PÚBLICO DO ESTADO DO AMAZONAS
Avenida Coronel Teixeira, 7995 - Bairro Nova Esperança - CEP 69037-473 - Manaus - AM - www.mpam.mp.br

CERTIDÃO Nº 72.2025.SCOMS.1724594.2025.001317

Certifico que foi realizada, nesta data, a juntada do **Mapa de Acompanhamento da Ata de Registro de Preços** 18.2025.CPL.1718108.2025.001317, decorrente do Pregão Eletrônico 94.010/2025-CPL/MP/PGJ-SRP (doc. 1724611), bem como do respetivo **Informativo de Saldo de ARP** (doc. 1724613), cujo objeto é o *fornecimento de equipamentos de informática, quais sejam, estações de trabalho e computadores portáteis, com garantia e assistência técnica on-site por, no mínimo, 60 (sessenta) meses, com fito na renovação do parque computacional, substituindo aqueles equipamentos fora de garantia ou obsoletos, assim como atender as demandas dos órgãos integrantes do Ministério Público do Estado do Amazonas, Procuradoria-Geral de Justiça, por um período de 12 meses.*

Certifico, ainda, que o PI-2025.001317 será encerrado na Unidade, após tomadas todas as providências de estilo.

Era o que havia a certificar.

Iury Fechine Ramos
Chefe do Setor de Compras e Serviços

Documento assinado eletronicamente por **Iury Fechine Ramos**, **Chefe do Setor de Compras e Serviços - SCOMS**, em 18/09/2025, às 10:36, conforme art. 1º, III, "b", da Lei 11.419/2006.

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