



Descriptive Report and Test Results

MASTER CONTRACT: 162507

REPORT: 2592938

PROJECT: 70041692

Edition 1: February 5, 2013; Project 2592938 – Toronto
Issued by Janackovic Thomas ; Reviewed by Sam Tam

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Report pages reissued

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Issued by Thomas Janackovic

Report pages reissued

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Attachments IEC checklist CB162507-70008000 (70041693)
CB Certificate CA/17727/CSA

PRODUCTS

CLASS 2226 51 - AUDIO AND VIDEO EQUIPMENT - Commercial Audio Equipment

CLASS 2226 81 - AUDIO AND VIDEO EQUIPMENT - Commercial Audio Equipment - CERTIFIED TO U.S. STANDARDS

Active two way loud speaker, Models ZLX-12P and ZLX-15P, rated 100-240V ~, 50-60Hz, 0.8 – 0.5A, cord connected, Class I, grounded.

APPLICABLE REQUIREMENTS

CAN/CSA 60065-03 + Am1 +Am2

Audio, Video and Similar Electronic Apparatus - Safety Requirements.

UL Std No. 60065-03 (2012)

Audio, Video and Similar Electronic Apparatus - Safety Requirements.

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MARKINGS

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Markings as given below and/or described in the report appear on each unit:

- Submitter's name, CSA registered tradename, Bosch Security Systems, Inc., file number "LR 104684", or Master Contract No. 162507
- Model designation;
- Electrical rating in volts, hertz, amperes or watts;
- * Period of manufacture; date code / S/N (3 mo min period);
- "CAUTION - RISK OF ELECTRIC SHOCK - DO NOT OPEN. AVIS: RISQUE DE CHOC ELECTRIQUE - NE PAS OUVRIR" together with the two graphical symbols - a lightning flash with arrow-point within an equilateral triangle, and an exclamation point within an equilateral triangle, appears on the removable cover to gain access;
- (Leakage 0.75 - 3.5mA): 'CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, GROUNDING OF THE CENTRE PIN OF THIS PLUG MUST BE MAINTAINED' marked on the rear panel.

*Note: Period of manufacture and factory identification may be coded within a serial number, provided that the manufacturer can trace the information upon request from CSA International.

Method: A CSA Mark or a CSA Mark with the C-US (or NRTL/C) or US (or NRTL) indicator and other required information appears on a durable adhesive nameplate (CSA Accepted for commercial equipment) or moulded or silk-screened onto the enclosure.

CSA Nameplate:

cUR (MH17154)
Manufacturer: Brady Worldwide Inc.
Type: B-422
Material: Thermal transfer printable Polyester Label

or alternatively

cUR (MH18072)
Manufacturer: 3M Hillington
Type: 3M 76971
Material: Thermal transfer printable Polyester Label

or alternatively

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cUL (MH27538)

Manufacturer: AVERY DENNISON ROLL MATERIALS EUROPE

Type: PET mat white/AL170/BG42 Wh

Material: Thermal transfer printable Polyester Label

Or alternatively

cUR UR (MH18072)

Manufacturer: 3M Hillington

Type: HP250

Material: Transcan PT50 matt silver void

Owner's Manual

(a) Mandatory

1. Heading: "IMPORTANT SAFETY INSTRUCTIONS", before operating instructions.
2. Explanation of graphical symbols (Lightning Flash and Exclamation Mark, Fig 19 DU) as follows, or equivalent,
 - (a) Lightning Flash Symbol, with "The Lightning Flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product enclosure that may be of sufficient magnitude to constitute a risk of shock to persons".
 - (b) Exclamation Point Symbol, with "The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product".
3. "WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE AND OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS APPARATUS" or equiv.
4. "TO COMPLETELY DISCONNECT THIS APPARATUS FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE" or equiv.
5. "THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY ACCESSIBLE" or equiv.

(b) Optional as needed (Verbatim for the US if applicable).

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions..
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over (and Fig 21 DU Tipping Cart Symbol).
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

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ALTERATIONS

1. Markings as detailed above.
2. Primary lead connected from the ac inlet to mains switch shell be mechanical secured before solder.
3. Insulation pad on Q1 dimension shall be 56 mm (L) x 24mm (W) x 0.114mm thick.
4. Marking applied on the rear panel for "CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, GROUNDING OF THE CENTRE PIN OF THIS PLUG MUST BE MAINTAINED"
5. Models ZLX-12P and ZLX-15P has not been investigated for use with tripod or any other mounting means.

FACTORY TESTS

- (a) **Basic Dielectric**: The equipment at the conclusion of manufacture, before shipment, shall withstand for one sec, without breakdown, the application of:
Nominal 240V: 1500V ac or 2120V dc between live parts and exposed non-current-carrying metal parts.
The factory test may be made at existing room temperature.

The product factory tests shall not exceed 2000V ac.

Each transformer connected to the ac supply shall be subjected to the following dielectric strength tests for a period of one sec, without breakdown:

An ac potential applied between each winding and the core and metal enclosure, with all other windings grounded to the core and metal enclosure. The test potential shall be:

- (a) For windings rated 30V and less, 500V ac.
- (b) For windings rated over 30V, 800/1500V ac.

Note: Transformer tests may be performed by the transformer manufacturer.

- (c) **Ground Continuity**: The equipment with protective grounding shall be tested, as a routine production-line test, to determine that there is electrical continuity between the grounding pin of the attachment plug and the accessible dead metal parts of the equipment. Alternatively, a visual check may be made.

Warning: The factory test(s) specified may present a hazard of injury to personnel and/or property and should only be performed by persons knowledgeable of such hazards and under conditions designed to minimize the possibility of injury.

SPECIAL INSTRUCTIONS FOR FIELD SERVICES

1. Component descriptions marked with either the "(INT)" or "(INT*)" identifiers may be substituted with other components providing the requirements specified under the notes in the "Description" are complied with.

2. [Click here and type]

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COMPONENT SPECIAL PICKUP - N/A

1. Component descriptions marked with the identifier “(CT)” are subject to annual pickup and Conformity Testing.

DESCRIPTION

Notes:

- a) The term "INT" means a "Certified" and/or "Listed" (or a "Recognized" and/or "Accepted") component may be replaced by one "Certified" and/or "Listed" by another certification organization accredited by the appropriate accreditation body or scheme requirements to the correct standard, for the same application; providing the applicable country identifiers are included and requirements in item "d" below are complied with.
- b) The Term "INT*" means a "Recognized" and/or "Accepted" component may be replaced by one "Recognized" and/or "Accepted" by another certification organization accredited by the appropriate accreditation body or scheme requirements to the correct standard, for the same application, providing the applicable country identifiers are included, the component is **also** CSA Certified, the requirements in item "d" below are complied with and any "conditions of suitability" for the component (as recorded in this descriptive report) are complied with.
- c) Components which have been substituted, must be of an equivalent rating, configuration (size, orientation, mounting) and the applicable minimum creepage and clearance distances are to be maintained from live parts to bonded metal parts and secondary parts.
- d) Substitution of a "Certified" and/or "Listed" component with a component that is "Recognized" or "Accepted" is not permitted without evaluation and report updating.

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Notes:

- b) The term "INT" means a "Certified" and/or "Listed" (or a "Recognized" and/or "Accepted") component may be replaced by one "Certified" and/or "Listed" by an organization (accredited by OSHA/SCC), for the same application; providing the applicable country identifiers are included and requirements in item "d" below are complied with.
- c) The term "INT*" means a "Recognized" and/or "Accepted" component may be replaced by one "Recognized" and/or "Accepted" by an organization (accredited by OSHA/SCC), for the same application, providing the applicable country identifiers are included, the component is **also** CSA Certified, the requirements in item "d" below are complied with and any "conditions of suitability" for the component (as recorded in this descriptive report) are complied with.
- d) Components which have been substituted, must be of an equivalent rating, configuration (size, orientation, mounting) and the applicable minimum creepage and clearance distances are to be maintained from live parts to bonded metal parts and secondary parts.

General: Subject model is an Active two way loud speaker

Note: Model ZLX 12P similar to ZLX 15P except the enclosure size and internal speaker.

Weight of Equipment:

Model ZLX-12P 14.9 kg

Model ZLX-15P 16.6 kg

Pollution Degree: 2

Insulation Material Group: IIIb

Maximum Rated Ambient Temperature: +40°C.

Circuit:

AC Line Coupling: Inductive through a switch -mode transformer.

Enclosure: Table top or floor standing Model, combustion-resistant. Secured together by screws

Overall Dimensions:

Model ZLX-12P 610 mm (L) by 356 mm (W) by 356 mm (H).

Model ZLX-15P 685 mm (L) by 423 mm (W) by 383 mm (H).

General Construction:

Part	Material	Thickness	Manufacturer	Type	Rating/ Thickness
Main Enclosure	Polypropylene	5.2mm	KINGFA SCI & TECH CO LTD	HG-168A1	HB min
Internal Enclosure for enclosure the power supply		3.0 mm		PP-R200	V-2 min
Rear Panel	Metal	2.57mm	--	--	Thickness 2.69 mm

Handle:

Type:

Part	Material	Dimension/Thickness	Mounting
Bar	Thermoplastic Type HG-168A1	(L) 151.1 mm x (H) 18.2 mm x (W) 26.8 mm	Screw mounted
Support	Internal brass thread	Ø 4.25 mm	--

Ventilation Openings: See attached photos.

Grounding, Bonding and Double Isolation:

1. A green or green/yellow 16AWG grounding conductor terminates singly in a startooth crimp lug type, closed loop startooth connector to chassis by a min No 6 (M3.5) plated or non-ferrous threaded stud screw, nut and starwasher. The other end of the ground wire is crimped to spade connector which is fitted to the ac input receptacle ground lug.
2. Primary wiring is dressed away from bare secondary components.
3. Secondary wiring is dressed away from bare primary components.
4. The IEC 417 #5019 "⊕" symbol is marked adjacent to the screw on the chassis.

Connectors (INT): Certified/UR/Evaluated (V-2 min)

Location	Manufacturer	Cat No	Rating	Flame Rating
Spade connector Line	Tyco electronics	FASTON CONNECTOR 160433	20A	Metal only
Spade connector Neutral	Tyco electronics	FASTON CONNECTOR 160433	20A	Metal only
CN2 (secondary side)	MOLEX Inc.	SPOX 5281	250V 7A	V-2

Insulating Barrier/Sleeving/Tape: Accepted/UR/Evaluated

Insulation	Manufacturer	Thickness	Type	Flame Rating/ Thickness	Securement
Insulator on Q1 to heatsink (GND)	The Bergquist Company	0.114 mm	650P	V-0	Clamped between heatsink and Q1
Alternative Type	The Bergquist Company	0.114 mm	300P	V-0	Clamped between heatsink and Q1

Internal Speakers:

Type	Woofers	Tweeter
No Provided	1	1
Ohms	8Ω	8Ω
W	250	25

External Speaker Terminals: None.

Critical Components:

Component	Manufacturer / trademark	Type/model	Value / rating	Standard	Approval / Reference
Mains cord set for EU group members	Luxshare-ICT	H05VV-F	18AWG, 300V 105°C, VW-1	IEC60227	VDE (40027103)
Plug		A12-033-AC2	16A, 250 V	IEC60320	VDE (40031867)
Connector		A12-012-AC2	16A, 250 V	IEC60320	VDE (40030131)
Mains cord set for EU group members -alternative type	King Cord Co., Ltd.	H05VV-F	18AWG, 300V 105°C, VW-1	IEC60227	VDE (40017246)
Plug		KC-015	10A, 250 V	IEC60320	VDE (40015272)
Connector		KC-003	10A, 250 V	IEC60320	VDE (40014553)
Mains cord set North America (INT)	Lorom Industrial Co. Ltd.	SJT	16AWG, 300V 60°C, VW-1	CSA-C22.2 No. 49 UL62	CSA (112007) cUR (E159216)
Plug (INT)		PS204	13A, 125V	CAN/CSA-C22.2 No 21 UL817	CSA (LR 84754) UR (E62405)
Connector (INT)		V1625	13A, 125V	CAN/CSA-C22.2 No 210 UL817	cUR (E62405)
Mains cord set North America -alternative type	Electri Cord mfg Co.	SJT	18AWG, 125V 105°C, VW-1	CAN/CSA-C22.2 NO 21 UL817	CSA (LR 84754) UR (E62405)
Plug		PS204	13A, 125V	CAN/CSA-C22.2 No 21 UL817	CSA (LR 84754) cUR (E62405)
Connector		V1625	13A, 125V	CAN/CSA-C22.2 No 210 UL817	cUR (E62405)
Appliance inlet with fuse holder and switch (INT)	Rich Bay	R3014S	UL - 250V 15A V-0 VDE – 10A, 250V	C22.2 no.42 UL 498	cURus (E242265) VDE (40029849)
-Main Switch	Light Country Co.Ltd.	R 19A	250V 6A Bracket Tested CI 14.6.1 to 14.6.4 10k cycles operated at Inrush 15 Apk at 264V, 6A.	IEC 61058 UL 61058	VDE (40006923) cURus (E104190)

Component	Manufacturer / trademark	Type/model	Value / rating	Standard	Approval / Reference
-Housing of mains switch	Nilit (Suzhou) Engeneering Plastic Technologies Co Ltd	A63 V0GV(c)	Polyamide 66 "FRIANYL" rated 94V-0 at 0.75mm 1.25mm min thick.	UL 94	UL (E331274)
Mains Fuse (INT)	Littlefuse	218 004	250V 4 AT 125°C Glass fuse 5x20mm	IEC60127 C22.2 no.248.1 C22.2 no.248.14 UL 248-1 UL248-14	SEMKO (9850004) CSA (LR1422-30) UL(E10480)
	SIBA	179120-4 1	250V 4 AT 125°C Glass fuse 5x20mm	IEC60127 CSA-C22.2 No 248 UL 248-14 UL512	VDE (40006558) UL (e167295)
	Schurter	FST 034.3127	250V 4 AT 125°C Glass fuse 5x20mm	IEC 60127-2/3 UL 248-14 CSA C22.2 no. 248.14	cURus E41599 VDE (40016601)
	Busmann	S506	250V 4 AT 125°C Glass fuse 5x20mm	IEC 60127-2/3 UL 248-14 CSA C22.2 no. 248.14	CSA 1803366 cURus E19180 VDE (40011926)
Internal Mains Wiring (INT)	Cableplus Industrial Co. Ltd.	UL Style 1015	AWG 16 600V 80°C VW-1	CSA-C22.2 No. 127 ANSI/UL 758	cUR (E173648)
Ground spade connector	Tyco electronics	Ring & Spade Tongue Terminal 880642-2	20A/250V	IEC60065	Checked by inspection and manufacturers information
Spade connector (INT)	Tyco electronics	FASTON CONNECTOR 160433	receptacle 4.8mm AWG 20-15 20A	CSA-C22.2 No. 153-, " Electrical Quick-Connect Terminals." UL310	UL (E66717)
PCB Material (INT)	World Mastery Technology Ltd.	WM328DS-2	FR 4, thickness 1.6mm V-0 130°C	UL94	UL (E200175)
VDR R90	EPCOS	S14K300E2	300Vrms, I imp 6kA 85°C V-0	IEC61643 CSA No. 1-04 UL1449	VDE (40031102) CSA (241538) UL (E321126)
Inductor L1 and L4	Schaffner	EV 24-0.8-02-18M	250V ~ 18mH 100°C V-0	IEC/EN60065	Tested in equipment
- Bobbin	Nan Ya Plastics Corp Plastics 4 TH DIV	1403G6	Thickness 0.75mm V-0 130°C	UL 94	UL (E130155)
Inductor L1 and L4 alternative Type	Axis Corp.	LF2429 NP-T203	250V ~ 20mH 100°C V-0	IEC/EN60065	Tested in equipment

Component	Manufacturer / trademark	Type/model	Value / rating	Standard	Approval / Reference
-Bobbin	Nan Ya Plastics Corp Plastics 4 TH DIV	1403G3 and 1403G6	Thickness 0.75mm V-0 130°C	UL 94	UL (E130155)
-Base	Chang Chun Plastics Co. Ltd.	T375HF	Thickness 0.75mm V-0 150°C	UL 94	UL (E59481)
- alternative	Sumitomo Bakelite Co. Ltd.	PM-9820	Thickness 0.75mm V-0 150°C	UL 94	UL (E41429)
Inductor L1 and L4 alternative Type	EPCOS	B82732R	250V ~ 1.1A 22 mH Coilformer made of V-0 Material 125°C	IEC/EN60938-2 UL 1283 UL94	VDE (40004409) UL (E70122)
X Capacitor C18 and C19	Vishay	MKP 338 2 Series	X2 1µF 250V~ 100°C Flammability class B	IEC 60384-14 CSA-C22.2 no.1 UL1414 UL1283	ENEC (FI 2008038 A1) CSA (1087424) UL (E112471) UL (E109565)
-alternative	Arcotronics/Kemet	R.46 Series	X2 1µF 250V~ 125°C Flammability class B	UL1414 UL1283 CSA C22.2N01 IEC/EN60384-14	UL (E97797) UL (E85238) CSA (LR83890) ENEC 03 (V4413 DAT97000141)
-alternative	KEMET	PHE840M	X2 1µF 250V~ 100°C V-0 case	CAN/CSA-E60384-14 UL60384-14 EN/IEC 60384-14:2005	cUR UR E73869 ENEC
-alternative	TDK/EPCOS	B81130	X2 1µF 250V~ 100°C V-0 case	CAN/CSA-E60384-14 UL60384-14 EN/IEC 60384-14:2005	cUR UR E97863 ENEC 138554
Y Capacitor C121 C15 (INT)	Kemet	KJN Cat No. KJN392MQ59FA ADA	Y1 3.9nF 250V~ 125°C V-0	IEC60384-14 UL1414	ENEC 03 Certificate No. CA08.00127 Issued by CBTL IMQ S.p.A. UR E97797
-alternative	Vishay	WKP	Y1 3.9nF 250V~ 125°C V-0	IEC60384-14 UL1414	VDE CB Zertificate No. DE-1-1-1102-A1 UL E138844

Component	Manufacturer / trademark	Type/model	Value / rating	Standard	Approval / Reference
-alternative	Murata	KX	Y1 3.9nF 250V~ 125°C V-0	IEC60384-14 CAN/CSA C22.2 No. 60065 CAN/CSA- E384- 14 UL1414	VDE CB Zertificate No. 40006273 CSA(44559) UL (E37921)
-alternative	Vishay	VKP-1	Y1 3.9nF 250V~ 125°C V-0	CAN/CSA-E60384- 14 UL60384-14 EN/IEC 60384- 14:2005	VDE Certificate 136494 cURus (E183844)
-alternative	Vishay	VY	Y1 3.9nF 250V~ 125°C V-0	CAN/CSA-E60384- 14 UL60384-14 EN/IEC 60384- 14:2005	VDE Certificate 40012673 cURus (E183844)
Y Capacitor C25 and C26 (INT)	Arcotronics/Kemet	KJN	Y1 4.7nF 250V~ 125°C V-0	IEC60384-14 UL1414	ENEC 03 Certificate No. CA08.00127 Issued by CBTL IMQ S.p.A. UR E97797
-alternative	Vishay	WKP	Y1 4.7nF 250V~ 125°C V-0	IEC60384-14 UL1414	VDE CB Zertificate No. DE-1-1-1102-A1 UR (E183844)
-alternative	Murata	KX	Y1 4.7nF 250V~ 125°C V-0	IEC60384-14 CAN/CSA C22.2 No. 60065 CAN/CSA- E384- 14 UL1414	VDE CB Zertificate No. 40006273 CSA(44559) UR (E37921)
-alternative	Vishay	VKP-1	Y1 3.9nF 250V~ 125°C V-0	CAN/CSA-E60384- 14 UL60384-14 EN/IEC 60384- 14:2005	VDE Certificate 136494 cURus (E183844)
-alternative	Vishay	VY	Y1 3.9nF 250V~ 125°C V-0	CAN/CSA-E60384- 14 UL60384-14 EN/IEC 60384- 14:2005	VDE Certificate 40012673 cURus (E183844)
Across line resistor R31, R32, R33	--	Surface mount	220kΩ 0.25W Resistor body spacing 2.0 mm min.	--	--

Component	Manufacturer / trademark	Type/model	Value / rating	Standard	Approval / Reference
Bridge rectifier	--	GBPC604	280V~ 6A 150°C V-0	--	--
		BR64	280V~ 6A 150°C V-0	--	--
Optocoupler I5	Vishay	SFH6186-2T	0.7mm through insulation. Internal creepage and clearances 5.2mm External creepage and clearances 8.0mm 100°C	UL1577 IEC60065 CAN/CSA-C22.2 No. 1 CAN/CSA-C22.2 No. 95	UL (E52744) CSA (93751) FI (25416)
Switching transistor Q1	Infineon	SPP17N80C3	I drain 17A 227W +150°C	--	--
-alternative	ST-Microelectronics	STP20N95K5	I drain 17.5A 250W +150°C	--	--
Mains transformer T1	Eaglerise	F.01U.267.152 (EAGLERISE 1229)	Insulation class 130(B)	IEC 60065:2001 + Amd 1:2005	Tested in equipment. Refer to additional information S36475-00-03TJ
-Bobbin	Chang Chun Chemical (Zhangzhou) Co Ltd	4115	Thickness 1.0 mm 120°C V-0	UL 94	UL (E304813)
-Interwinding insulation	JingJiang Yahua Pressure Sensitive Glue Co. Ltd.	CT-280	Polyethylene terephthalate film insulating tape Yellow 0.025mm 130°C	UL 510	UL (E165111)
-Insulation tube	Chang Yuan Electronics (Shenzhen) Co Ltd	CB TT- S	600V clear 200°C VW-1	ANSI/UL 224 "Extruded Insulating Tubing."	UL (E180908)
-Magnetic wire	Xingning Jinyan Electrical Co. Ltd.	2UEW-B	Polyurethane MC28 130°C	UL 1446	UL (E238500)
Capacitors C20,C21,C16 and C17	--	Electrolytic Capacitors (top venting)	50V 3300µF 105°C Complete Metal case	--	--
Capacitors >1750mm ³ C30	EPCOS	MKT	400V 2.2µF 125°C V-0	IEC 60065:2001 + Amd 1:2005	Tested in Equipment Attachment 3
-Housing for EPCOS MKT	SABIC Innovative Plastics B V	4631	Polybutylene Terephthalate V-0 130°C	UL 94	UL (E45329)

Component	Manufacturer / trademark	Type/model	Value / rating	Standard	Approval / Reference
-alternative	Vishay	MKT	400V 2.2µF 125°C V-0	IEC 60065:2001 + Amd 1:2005	Tested in Equipment Attachment 3
-Housing for Vishay MKT	GE Plastics B V	4631	Valox V-0 130°C	UL 94	UL (E45329)
-alternative	Vishay	F339	310V 2.2µF 110°C V-0	CAN/CSA-E60384- 14 UL60384-14 EN/IEC 60384- 14:2005	cURus E354331 VDE 40033060
-alternative	KEMET	F861	310V 2.2µF 110°C V-0	UL 60384-14 and CAN/CSA- E60384-14	cURus E97797
Output connector CN2 on the main pcb (INT)	MOLEX Inc.	SPOX 5281	250V 7A V-2 105°C	CSA-C22.2 No. 182.3 UL1977 UL94 IEC/ EN 61984:2001	CSA (LR19980) UL (E29179) TÜV (R72090224)
Insulation pad on Q1 to heatsink	The Bergquist Company	650P	56 mm (L) x 24mm (W)	UL 746 UL94	UL (E59150)
-alternative	The Bergquist Company	300P	Thickness 0.114mm Uiso 5kV V-0 150°C	UL 746 UL94	UL (E59150)
Hot glue adhesive (not for safety)	Henkel AG & CO KGAA	Macromelt 6208	Polyamide (PA) 65°C, V-0	UL94	UL (E182771)
-alternative	HENKEL AG & CO KGAA	Macromelt 6797	Polyamide (PA), "Technomelt PA", furnished as granular material 65°C, V-0	UL 746 UL94+ CSA-C22.2 No. 0.17	cURus (E182771)
Sound absorber material (No contact for live components)	Guangzhou Panyu Xinghui Rubber & Plastic Products Factory	Green Cotton fibre felt	Thickness – 50mm ± 4mm Length – 450mm ± 20mm Width – 115mm ± 10mm HF/HBF material	CSA C22.2No.0.17- 00§4.2.5 UL 94	UL Project No. 10CA09912 File No. SV18203
Enclosure Material	Kingfa SCI & Tech Co Ltd	HG-168A1	Thickness 5.2mm Rated: HB/0.15mm 65°C	UL 746 UL94	UL(E171666)
Internal Fire Enclosure Material applied after backplane	Kingfa SCI & Tech Co Ltd	PP-R200	3.0 mm Rated V-2 / 0.75mm 130°C	UL 94	UL(E171666)
Speaker grill foam (protected by metal speaker grill below	Inoac Corp	C4505	Chloroprene Rubber (CR), flexible foam HF-1	UL 746 UL94	UL(E58579)
Rear Panel	Various Sources	Metal	Thickness 2.69mm	--	--

Component	Manufacturer / trademark	Type/model	Value / rating	Standard	Approval / Reference
Speaker Grill (secured by screws)	--	Metal	1.68mm thick	--	--
Model/rating label information if use	Brady Worldwide Inc	B-422	THERMAL TRANSFER PRINTABLE GLOSSY WHITE POLYESTER LABEL 150°C	UL969 C22.2 No.0.15-95	cUR (MH17154)
-alternative	3M Hillington	3M 76971	3M TT5 MS PET 50 Triangles-350E/20-90WG	CSA No.0.15 UL969	cUR (MH18072)
-alternative	Avery Dennison Roll Materials Europe	PET mat white/AL170/BG 42 Wh	Thermal transfer printable White Polyester Label Max. 150°C	UL969	UL (MH27538)
-alternative	3M Hillington	HP250	Transcan PT50 matt silver void	CSA No.0.15 UL969	cUR (MH18072)
<p>¹⁾ An asterisk indicates a mark which assures the agreed level of surveillance. Components marked with (INT) may have alternative sources per (INT) "DESCRIPTION Notes" above.</p> <p>²⁾ Description to include adjacent markings for critical fuse/s.</p>					

TEST HISTORY

The subject equipment was found to be in compliance with the following tests during the evaluation of the referenced report edition(s).

Project 2592938 (Edition 1): See attached CB report S36475-00-00TJ for all test data.



CB certificate DE 4 -
0748



CB report
S36475-00-00TJ



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Project 2647289 (Edition 2): Added soft start circuit in primary. Clearances and creepage distances between primary and secondary has no charge. No addition test deemed necessary.

Project 70041692 (Edition 3)

Report update to include:

1. Editorial rework List of Critical component and addition of alternative components.
2. Minor Non safety critical design changes
3. Report update to latest Standard Edition

No addition test deemed necessary.

See attached CB report CB162507-70014407(70041693) for all test data.



70041693_IEC
Checklist CB60065_V



70041693_CB_Test_
Certificate CA17727C

---End of Report---