



CSA IEC 60065 (7th Ed. + A1 + A2) REPORT CONTENTS

CSA Reference Number 152413-70056203

	Document Control	1 page
	CB Report	30 pages

Attachments		
1	National Deviations and Group Differences	155 pages
2	Photographs and markings	7 pages
3	Drawings and Specifications	13 pages
4	IEC 60950-1 CB Report and UL/CSA 60950-1 Report	111 pages
5	IEC 60065 Additional Test Datasheet	12 pages

Note:


This report is a Construction Evaluation Report, not a CB report.

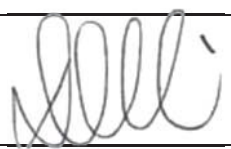



Test Report issued under the responsibility of



Master Contract 152413
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TEST REPORT IEC 60065 Audio, Video and Similar Electronic Apparatus: Safety Requirements	
Report Reference No. :	152413-70056203
Date of issue	2016-08-31
Total number of pages :	See Control Page 1 for total number of pages.
Applicant's Name :	McIntosh Laboratory Inc.
Address	2 Chambers St., Binghamton, NY, 13903, U.S.A.
Test Specification:	
Standard..... :	IEC 60065:2001 (Seventh Edition) + A1:2005 + A2:2010
Test procedure	CB Scheme
Non-standard test method	N/A
Test Report Form No. :	IEC60065K
TRF originator. :	Intertek Semko AB
Master TRF	Dated 2010-10
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Test item Description	POWER SUPPLY UNIT
Trademark :	 GlobTek® ,Inc.
Manufacturer	GlobTek, Inc.
Model/Type reference :	GT-46600-6012-T2
Ratings	Input: 100 - 240Vac, 50 - 60Hz; 1.5A Output: 12Vdc, 5A

Testing procedure and testing location:			
<input checked="" type="checkbox"/>	CB Testing Laboratory:	CSA International	
Testing location/ address :		178 Rexdale Blvd., Toronto, Ontario, CANADA M9W 1R3	
<input type="checkbox"/>	Associated CB Test Laboratory:	(Ed. __)	
Testing location/ address :			
	Tested by (name + signature)	Dennis Li (Certification Engineer)	
	Approved by (+ signature)	Sam Tam (Certification Specialist)	
<input type="checkbox"/>	Testing procedure: TMP	(Ed. __)	
Testing location/ address.....:		TMP No: CSA- /TMP (Laboratory name, address)	
	Tested by (name + signature)		
	Approved by (+ signature)		
<input type="checkbox"/>	Testing procedure: WMT	(Ed. __)	
Testing location/ address :		WMT No: CSA- /WMT (Laboratory name, address)	
	Tested by (name + signature)		
	Witnessed by (+ signature).....:		
	Approved by (+ signature)		
<input type="checkbox"/>	Testing procedure: SMT	(Ed. __)	
Testing location/ address.....:		SMT No: CSA- /SMT (Laboratory name, address)	
	Tested by (name + signature)		
	Approved by (+ signature)		
	Supervised by (+ signature)		
<input type="checkbox"/>	Testing procedure: RMT	(Ed. __)	
Testing location/ address.....:		RMT No: CSA- /RMT (Laboratory name, address)	
	Tested by (name + signature)		
	Approved by (+ signature)		
	Supervised by (+ signature)		

List of Attachments (including a total number of pages in each attachment): See Control Page 1 of 1

Summary of testing:

Edition 1: 2016-08-31; CSA Project 152413-70056203
Tested by Dennis Li , Approved by Sam Tam

Tests performed (name of test and test clause):

#	Clause #	Test Items
1.	9.1.1.1	Output Terminals – electric shock
2.	9.1.6	Withdrawal of mains
3.	14.2	Resistors
4.	11.1	Component fault Test - S/C at C1 and CX1 under both 264Vac and 90Vac, S/C at U1(5 to 1) and C5 under 264Vac only
5.	10.4	Dielectric Strength and Insulation Resistance
6.	13	Clearance and Creepage Distance Measurement
7.	14.4.3	Transformer description
8.	8.8	Thin insulation

Testing location:

CSA International
178 Rexdale Boulevard,
Toronto, ON
M9W 1R3, CANADA

Summary of compliance with National Differences:

List of countries addressed:

Compliance with the IEC 60065(ed.7) National requirements of AU, CH CN, IL, JP, KR, MY, PL, SG, UA and Group Differences (AT, BE, CZ, ES, FR, HU, NL, SK and SI) as posted at the following IECCEB Website: <http://members.iecee.org/iecee/ieceemembers.nsf> as per the date of issue was also confirmed.

- ☒ The product fulfils the requirements of:
- IEC 60065: 2001 + A1:2005 + A2:2010;
 - EN 60065: 2002 + A1:2005 + A2:2010 + A11:2008 + A12:2011

Copy of marking plate:

The marking plate artwork appended to this CBTR is only a draft. The use of certification marks on a product must be authorized by the respective NCBs' that own these marks.



Test item particulars :	
Classification of installation and use	Household / Table Top
Supply Connection..... :	Detachable Cord Set
..... :	Pollution Degree –2
..... :	Insulation Material Group –IIIb
Possible test case verdicts:	
Test case does not apply to the test object..... :	N/A (Not Applicable)
Test item does meet the requirement	P(Pass)
Test item does not meet the requirement	F(Fail)
Testing:	
Date of receipt of test item	2016-08-22
Date(s) of performance of test.....:	2016-08-23
General remarks	
<p>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 testing laboratory.</p> <p>"(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	
Manufacturer's Declaration per sub-clause 6.2.5 of IEC60335-1:	
<p>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</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable. Not a CB</p>	
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)	
1. GlobTek (Suzhou) Co.,Ltd. Building 4, 76 Jinling East Road, Suzhou Industrial Park, Suzhou, 215021 Jiangsu, China 2. GlobTek, Inc. 186 Veterans Dr. Northvale, NJ 07647 USA	

General product information:

1. Manufacturer's Declaration per Sub-clause 6.2.5 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 is provided (kept on file)
2. The subject product is a Switching Power Supply Adaptor, Model GT-46600-6012-T2, Detachable Cord-connected, Class II, LPS source. Input: 100 - 240Vac; 50 - 60Hz; 1.5A; Output: 12Vdc, 5A; Max.65 W. Intended for indoor use and continuous operation. This unit is intended for use with McIntosh Model MB150


This power supply adaptor model was evaluated and approved according to IEC/UL/CSA 60950-1: Ed.2 + Am1 + Am2. Refer to Att4 for CB report number: SHES150700404202) and UL file number: E170507.

Conditions of Acceptability:

1. Power fuse (F1) shall be a Littelfuse T3.15AH /250V, rated 3.15A, 250V, 1500A, 5x20mm Ceramic Cartridge type fuse only.
2. Fuse marking on PCB shall be marked as "T3.15AH /250V" adjacent to the fuse body.
3. Max operating ambient $T_a = 40^{\circ}\text{C}$ (declared by manufacturer)
4. "Important Safety Instruction" shall be provided according to Clause 5.4
5. Markings related to safety shall be in a language acceptable in the country in which the equipment is to be sold.
6. The power supply cord set was not evaluated together with the apparatus. A detachable power supply cord set provided with the unit shall be an approved type acceptable to the authorities in the country where the unit is sold.
7. For China:

(a) The rear of the unit shall be marked with the Low Altitude Use Warning Symbol



IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
3	GENERAL REQUIREMENTS		-
	Safety class of the apparatus : Class II		P
4	GENERAL CONDITIONS OF TESTS		-
4.1.4	Ventilation instructions require the use of the test box:		N/A
5	MARKING		-
	Comprehensible and easily discernible		P
	Permanent durability against water and petroleum spirit	Evaluated during the IEC/UL/CSA 60950-1 approval.	P
5.1	a) Identification, maker..... :  GlobTek®, Inc.		P
	b) Model number or type reference : GT-46600-6012-T2		P
	c) Class II symbol if applicable : Class II symbol provided		P
	d) Nature of supply : ~		P
	e) Rated supply voltage : 100-240V~		P
	f) Mains frequency if safety dependant	50/60Hz	P
	g) Rated current or power consumption for apparatus supplied by supply apparatus for general use : Not supplied by supply apparatus for general use		N/A
	Measured current or power consumption :		N/A
	Deviation % (max 10%) :		N/A
	h) Rated current or power consumption for apparatus intended for connection to an a.c. mains supply..... : 1.5A		P
	Measured current or power consumption..... : 1.19A at 100V/60Hz		P
	Measured current or power consumption for Television set : Not Television set		N/A
	Deviation % (max 10%) : < 10%		P
5.2	a) Earth terminal	Class II	N/A
	b) Hazardous live terminals	No hazardous live terminals	N/A
	c) Markings on Supply output terminals	12Vdc, 5A	N/A
5.3	a) Use of triangle with exclamation mark		N/A
	b) marking on loudspeaker grille, IEC 60417-5036		N/A
5.4	Instructions for use		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1	a) Mains powered equipment not exposed to dripping or splashing. Warning concerning objects filled with liquid, etc.	To be evaluated with the end product.	N/A
	b) Hazardous live terminals, instructions for wiring	12Vdc	N/A
	c) Instructions for replacing lithium battery	No Batteries	N/A
	d) Class I earth connection warning	Not Class I	N/A
	e) Instructions for multimedia system connection:		N/A
	f) Special stability warning for attachment of the apparatus to the floor/wall	Not attached to floor/wall	N/A
	g) Warning: battery exposure to heat	No Batteries	N/A
	h) Warning: protective film on CRT face	No CRT	N/A
5.4.2	a-b) Disconnect device: plug/coupler or all-pole mains switch location, accessibility and markings:	To be evaluated with the end product.	N/A
	c) Instructions for permanently connected equipment:	Not permanently connected	N/A
	Marking, signal lamps or similar for completely disconnection from the mains		N/A

6	HAZARDOUS RADIATION		-
6.1	Ionizing radiation < 36 pA/kg (0,5 mR/h)	No Ionizing radiation	N/A
	Ionizing radiation under fault condition		
6.2	Laser radiation, emission limits to IEC 60825-1:2007	No Laser radiation	N/A
	Emission limits under fault conditions		N/A

7	HEATING UNDER NORMAL OPERATING CONDITIONS		-
7.1	Temperature rises not exceeding specified values; fuse links and other protective device defeated	Evaluated in IEC60950-1 report	P
7.1.1	Temperature rise of accessible parts	Evaluated in IEC60950-1 report	P
7.1.2	Temperature rise of parts providing electrical insulation	Evaluated in IEC60950-1 report	P
7.1.3	Temperature rise of parts acting as a support or as a mechanical barrier	Evaluated in IEC60950-1 report	P
7.1.4	Temperature rise of windings	Evaluated in IEC60950-1 report	P
7.1.5	Parts not subject to a limit under 7.1.1 to 7.1.4		P
7.2	Softening temperature of insulating material supporting parts conductively connected to the mains carrying a current > 0,2 A at least 150 °C:	IEC Approved part	N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
8	CONSTRUCTIONAL REQUIREMENTS WITH REGARD TO THE PROTECTION AGAINST ELECTRIC SHOCK		-
8.1	Conductive parts covered by lacquer, paper, untreated textile oxide films and beads etc. considered to be bare	Considered	P
8.2	No shock hazard when changing voltage setting device, fuse-links or handling drawers etc	No devices accessible	N/A
8.3	Insulation of hazardous live parts not provided by hygroscopic material	No hygroscopic insulation	N/A
8.4	No risk of electric shock from accessible parts or parts rendered accessible following the removal of a cover which can be removed by hand	No live terminals or parts removable by hand	N/A
8.5	Class I equipment	Class II device	N/A
	Basic insulation between hazardous live parts and earthed accessible parts		N/A
	Resistors bridging basic insulation complying with 14.1 a)		N/A
	Capacitors bridging basic insulation complying with 14.2.1 a)		N/A
	Protective earthing terminal		N/A
8.6	Class II equipment and Class II constructions within Class I equipment	Class II device	P
	Double or reinforced insulation between hazardous live parts and accessible parts	Evaluated in IEC60950-1 report	P
	Components bridging reinforced or double insulation complying with 14.1 a) or 14.3	Transformer evaluated in IEC60950-1 report and evaluated to IEC60065 under this application; Approved Optocoupler used.	P
	Basic insulation bridged by components complying with 14.3.4.3.		N/A
	Basic and supplementary insulation each being bridged by a capacitor complying with 14.2.1 a)		P
	Reinforced or double insulation being bridged with 2 capacitors in series complying with 14.2.1 a)		N/A
	Reinforced or double insulation being bridged with a single capacitor complying with 14.2.1 b)	Approved to 60384-14	P
8.7	<i>This sub-clause is void</i>		N/A
8.8	Basic or Supplementary insulation > 0,4 mm (mm):	Approved opto-coupler	P
	Reinforced insulation > 0,4 mm (mm)	Evaluated in IEC60950-1 report and evaluated to IEC60065 under this application	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Thin sheet insulation (excluding non-separable thin sheet insulation. See 8.22)	In transformer T1: Two layers used, each complies with the required electric strength test 4242Vdc.	P
	Basic or supplementary insulation, at least two layers, each meeting 10.3 dielectric	Not used	N/A
	Basic or supplementary insulation, three layers any two of which meet 10.3 dielectric	Not used	N/A
	Reinforced insulation, two layers each of which meet 10.3 dielectric	Double layers of polyester tapes were wrapped on the secondary heatsink against the Fuse body.	P
	Reinforced insulation, three layers any two which meet 10.3 dielectric	Not used	N/A
8.9	Adequate insulation between internal hazardous live conductors and accessible parts	No primary internal wires.	N/A
	Adequate insulation between internal hazardous live parts and conductors connected to accessible parts	Evaluated to IEC60950-1 report.	P
8.10	Double insulation between conductors connected to the mains and accessible parts	No primary internal wires.	N/A
	Double insulation between internal hazardous live parts and conductors connected to accessible parts	Evaluated to IEC60950-1 report.	P
8.11	Detaching of wires		-
	No undue reduction of creepages or clearance distances if wires become detached	No detaching of wires	N/A
	Vibration test carried out		N/A
8.12	<i>This clause is void</i>	-	N/A
8.13	Adequate fastening of windows, lenses, lamp covers etc. (pull test 20 N for 10 s)	No critical lenses, etc	N/A
8.14	Adequate fastening of covers (push/pull test 50 N for 10 s)	No hazardous live terminals.	N/A
8.15	No risk of damage to the insulation of internal wiring due to hot parts or sharp edges	No hot parts or sharp edges near output wirings.	N/A
8.16	Only special supply equipment can be used		N/A
8.17	Insulated winding wire without additional interleaved insulation	Approved TIW	P
8.18	Endurance test as required by 8.17	Approved TIW	N/A
8.19	Disconnection from the mains:	By disconnect power Plug/coupler	P
8.19.1	Disconnect device	Plug/coupler	P
	All-pole switch or circuit breaker with >3mm contact separation	Not used as disconnect device	N/A
8.19.2	Mains switch ON indication	Mains switch not a disconnect device.	N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
8.20	Switch not fitted in the mains cord		N/A
8.21	Bridging components comply with clause 14	No bridging	N/A
8.22	Non-separable thin sheet insulation	No non-separable thin sheet insulation	N/A
9	ELECTRIC SHOCK HAZARD UNDER NORMAL OPERATING CONDITIONS		-
9.1	Testing on the outside		P
9.1.1	For voltages >1000 V ac or >1500 V dc complies with clause 13.3.1 for basic insulation	< 1000 Vac, < 1500Vdc	N/A
9.1.1.1	a) Open circuit voltages	< 35Vpk ac, < 60Vdc	P
	b) Touch current measured from terminal devices using the network in annex D	0.07mA max measured in IEC60950-1 report; 0.12mA max measured in IEC60065	P
	c) Discharge not exceeding 45 μ C		N/A
	d) Energy of discharge not exceeding 350 mJ	No 15kV	N/A
9.1.1.2	Test with test finger and test probe:	Evaluated in IEC60950-1 report	P
9.1.2	No hazardous live shafts of knobs, handles or levers	No live shafts	N/A
9.1.3	Ventilation holes and other holes tested by means of 4 mm x 100 mm test pin .	No Ventilation holes	N/A
9.1.4	Terminal devices – within 25mm tested with 1 mm x 20 mm test pin (10 N); test probe D of IEC 61032	No Ventilation holes	N/A
	Terminal devices tested with 1 mm x 100 mm straight wire (1 N); test probe D of IEC 61032	No terminals.	N/A
9.1.5	Pre-set controls tested with 2.5 mm x 100 mm test pin (10 N); test probe C of IEC 61032	No pre-set	N/A
9.1.6	No shock hazard due to stored charge on withdrawal of the mains plug; voltage (V) after 2 s	Evaluated in IEC60950-1 report and this IEC 60065 report. Input: 264Vac, 60Hz Rx1 and Rx2: 1.5M Ω , 1/4W; CX1=0.33 μ F Tested 18V after 2s	P
	If C is not greater than 0,1 μ F no test needed	C > 0.1 μ F	N/A
9.1.7	Resistance to external forces		-
	a) Test probe 11 of IEC 61032 for 10 s (50 N)		P
	b) Test hook of fig. 4 for 10 s (20 N)	Not tested	N/A
	c) 30 mm diameter test tool for 5 s (100 or 250 N)	Plastic enclosure	N/A
9.2	No hazard after removing a cover by hand	No cover can be removed by hand.	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict

10	INSULATION REQUIREMENTS		-
10.1	Insulation resistance (MΩ) at least 2 MΩ min. after surge test for basic and 4 MΩ min. for reinforced insulation	No antenna terminals	N/A
10.2	Humidity treatment 48 h or 120 h	120hr, 95% RH, 40°C evaluated in IEC60950-1 report	P
10.3	Insulation resistance and dielectric strength between mains terminals	Evaluated in IEC60950-1 report	P
	Insulation resistance and dielectric strength across BASIC or SUPPLEMENTARY insulation (Class I)	Evaluated in IEC60950-1 report	N/A
	Insulation resistance and dielectric strength across REINFORCED insulation (Class II)	Evaluated in IEC60950-1 report	P

11	FAULT CONDITIONS		-
11.1	No shock hazard under fault condition		P
11.2	Heating under fault condition	1. No flaming more than 10s 2. No protective solder terminations. 3. Tested/Evaluated in IEC60950-1 and 60065 reports	P
	Flames extinguish within 10 seconds		N/A
	No hazard from softening solder	No hazard from softening solder	P
	Soldered terminations not used as protective mechanism		N/A
11.2.1	Measurement of temperature rises	Tested/Evaluated in IEC60950-1 and 60065 reports	P
11.2.2	Temperature rise of accessible parts	Tested/Evaluated in IEC60950-1 and 60065 reports	P
11.2.3	Temperature rise of parts, other than windings and printed boards, providing electrical insulation	Tested/Evaluated in IEC60950-1 and 60065 reports	P
11.2.4	Temperature rise of parts acting as a support or mechanical barrier	Tested/Evaluated in IEC60950-1 and 60065 reports	P
11.2.5	Temperature rise of windings	Tested/Evaluated in IEC60950-1 and 60065 reports	P
11.2.6	Temperature rise of printed circuit boards (PCB) exceeding the limits of table 3 by max. 100 K for max. 5 min	Not exceed	N/A
	Printed circuit boards (PCB) classified as V-0 according to 60695-11-10 or Clause G.1 may exceed the limit in table 3 in case a) and b):	Not exceed	N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	a) Temperature rise of printed circuit boards (PCB) to 20.1.3, exceeding the limits of table 3 by not more than 100 K for an area not greater than 2 cm ²	Not exceed	N/A
	b) Temperature rise of printed circuit boards (PCB) to 20.1.3 up to 300 K for an area not greater than 2 cm ² for a maximum of 5 min	Not exceed	N/A
	Meets all the special conditions if conductors on printed circuit boards are interrupted	No interruption	N/A
	Class I protective earthing maintained		N/A
11.2.7	Temperature rise of parts not subject to the limits of 11.2.1 to 11.2.6 shall not exceed the limits in table 3, item e), "Fault conditions".	Not exceed	P

12	MECHANICAL STRENGTH		-
12.1.1	Bump test where mass >7 kg	≤ 7kg	N/A
12.1.2	Vibration test	Not tested due to construction.	N/A
12.1.3	Impact hammer test		N/A
	Steel ball test	Tested in IEC60950-1 report	P
12.1.4	Drop test for portable apparatus where mass ≤ 7 kg	Tested in IEC60950-1 report	P
12.1.5	Thermoplastic enclosures stress relief test	Tested in IEC60950-1 report	P
12.2	Fixing of knobs, push buttons, keys and levers	No such parts	N/A
12.3	Remote controls with hazardous live parts	No live remotes	N/A
12.4	Drawers (pull test 50 N, 10 s)	No critical drawers	N/A
12.5	Antenna coaxial sockets providing isolation	No Antenna	N/A
12.6	Telescoping or rod antennas construction	No telescoping antenna	N/A
12.6.1	Telescoping or rod antennas securement	No telescoping antenna	N/A

13	CLEARANCE AND CREEPAGE DISTANCES		-
13.1	Clearances in accordance with 13.3	see appended table	P
	Creeepage distances in accordance with 13.4	see appended table	P
13.2	Determination of operating voltage	Evaluated in IEC60950-1 report	P
13.3	Clearances		-
13.3.1	General		P
13.3.2	Circuits conductively connected to the mains comply with table 8 and, where applicable, table 9:		P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
13.3.3	Circuits not conductively connected to the mains comply with table 10	Evaluated in IEC60950-1 report	P
13.3.4	Measurement of transient voltages		P
13.4	Creepage distances	Material Group IIIb used	P
	Creepage distances greater than table 11 minimum values	Evaluated in IEC60950-1 report	P
13.5	Printed boards		-
13.5.1	Clearances and creepage distances between conductors on printed circuit boards, one of which may be conductively connected to the mains, as in fig. 10	Not test	N/A
13.5.2	Type B coated printed circuit boards complying with IEC 60664-3 (basic insulation only)	Not test	N/A
13.6	Conductive parts along uncemented joints clearances and creepage distances comply with 13.3 and 13.4	Complies with 13.3 and 13.4	P
	Conductive parts along reliably cemented joints comply with 8.8	Approved Opto-couplers and approved according to IEC 60950-1 with thermal cycling test.	P
	Temperature cycle test and dielectric strength test	Approved Opto-couplers and approved according to IEC 60950-1 with thermal cycling test.	P
	500V test for transformers, magnetic coupler and similar devices, if insulation is relied upon for safety		N/A
13.7	Enclosed, enveloped or hermetically sealed parts not conductively connected to the mains, clearances and creepage distances as in table 12:	Not used	N/A
13.8	Parts filled with insulating compound, meeting the requirements of 8.8	Approved Opto-couplers and approved according to IEC 60950-1 with thermal cycling test.	P
14	COMPONENTS		-
14.1	Resistors		-
	a) Resistors between hazardous live parts and accessible metal parts		N/A
	b) Resistors, other than between hazardous live parts and accessible parts	Tested in IEC60950-1 report. Rx1 & Rx2 in series (each 1.5MΩ, 1/4W), cross Line to Neutral.	P
	Resistors separately approved.....:	No	N/A
14.2	Capacitors and RC units		-
	Capacitors separately approved.....:	Approved to 60384-14	P
14.2.1	Y capacitors tested to IEC 60384-14, 2 nd edition .. :	Approved Y Cap	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
14.2.2	X capacitors tested to IEC 60384-14, 2 nd edition .. :	Approved X Cap	P
14.2.3	Capacitors operating at mains frequency but not connected to the mains: tests for X2 :		N/A
14.2.5 a)	Capacitors with volume exceeding 1750 mm ³ , where short-circuit current exceeds 0,2 A: compliance with IEC60384-1, 4.38 category B or better :	< 1750mm ³	N/A
b)	Capacitors with volume exceeding 1750 mm ³ , mounted closer to a potential ignition source than table 5 permits: compliance with IEC 60 384-1, 4.38 category B or better :	< 1750mm ³	N/A
	Shielded by a barrier acc. to 20.1.4/ table 21 or metal.....:	No barriers	N/A
14.3	Inductors and windings		-
	Comply with IEC 61558-1, IEC 61558-2 (as relevant) and clause 20.1.4	Evaluated.	N/A
14.3.1	Transformers and inductors marked with manufacturer's name and type :	1. Manufacturer's name and Cat. No. 2. Coded number.	P
	Transformers and inductors separately approved :	Evaluated in both IEC60950-1 and IEC60065	P
14.3.2	General	PIS circuit inductor/transformer complies with 20.1.4.	P
	Insulation material complies with clause 20.1.4:		P
14.3.3	Constructional requirements		-
14.3.3.1	Clearances and creepage distances comply with clause 13	see appended table	P
14.3.3.2	Transformers meet the constructional requirements	see appended table	P
14.3.4	Separation between windings		-
14.3.4.1	Class II transformers have adequate separation between hazardous live parts and accessible parts (double or reinforced insulation):	Evaluated in both IEC60950-1 and IEC60065	P
	Coil formers and partition walls ≥ 0,4 mm	No reinforced former.	N/A
14.3.4.2	Class I transformers, with basic insulation and protective screening only if all 7 conditions of 14.3.4.2 are met	Class II	N/A
14.3.4.3	Separating transformers with at least basic insulation	No separating types	N/A
14.3.5	Insulation between HAZARDOUS LIVE parts and ACCESSIBLE parts		P
14.3.5.1	Class II transformers have adequate insulation between hazardous live parts and accessible parts (double or reinforced insulation)	Evaluated in both IEC60950-1 and IEC60065	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Coil formers and partition walls $\geq 0,4$ mm		P
14.3.5.2	Class I transformers have adequate insulation between hazardous live parts and accessible conductive parts or those conductive parts or protective screens connected to a protective earth terminal	Class II device	N/A
	Winding wires connected to protective earth have adequate current-carrying capacity		N/A
14.4	High voltage components	No High voltage	N/A
	High-voltage components and assemblies: $U > 4$ kV (peak) separately approved	< 4kV peak	N/A
	Component meets category V-1 of IEC 60695-11-10		N/A
14.4.1	High voltage transformers and multipliers tested as part of the submission		N/A
14.4.2	High voltage assemblies and other parts tested as part of the submission		N/A
14.5	Protective devices		-
	Protective devices used within their ratings		P
	External clearances and creepage distances meet requirement of clause 13 for the voltage across the device when opened	Creepages and clearances OK	P
14.5.1.1	a) Thermal cut-outs separately approved	No thermal cutout	N/A
	b) Thermal cut-outs tested as part of the submission	No thermal cutout	N/A
14.5.1.2	a) Thermal links separately approved	No thermal links	N/A
	b) Thermal links tested as part of the submission	No thermal links	N/A
14.5.1.3	Thermal devices re-settable by soldering		N/A
14.5.2.1	Fuse-links in the mains circuit according to IEC 60127	1. IEC 60127 Approved 2. CSA component/UR approved	P
14.5.2.2	Correct marking of fuse-links adjacent to holder ... :	T3.15AH / 250V	P
14.5.2.3	Not possible to connect fuses in parallel :		N/A
14.5.2.4	Not possible to touch hazardous live parts when replacing fuse-links without the use of a tool :	Fuses inside enclosure	P
14.5.3	PTC-S thermistors comply with IEC 60730-1:2007	Not used	N/A
	PTC-S devices (15 W) category V-1 or better	Not used	N/A
14.5.4	Circuit protectors have adequate breaking capacity and their position is correctly marked	Not used	N/A
14.6	Switches		-

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
14.6.1 a)	Separate testing to IEC 61058 including: - 10 000 operations - Normal pollution suitability - Resistance to heat and fire level 3 - Make and break speed independent of speed of actuation V-0 compliance with annex G, G.1.1	Switch not provided	N/A
14.6.1 b)	Tested in the apparatus	No switch	N/A
	Switch controlling > 0.2A with open contact voltage > 35 V (peak)/24 V dc complying with 14.6.3, 14.6.4 and V-0 in annex G, G.1.1		N/A
	Switch controlling > 0.2A with open contact voltage < 35 V (peak)/24 V dc complying with 14.6.3 and V-0 in annex G, G.1.1		N/A
	Switch controlling \leq 0.2A with open contact voltage > 35 V (peak)/24 V dc complying with 14.6.4 and V-0 in annex G, G.1.1		N/A
14.6.2	Switch tested to 14.6.1 b) constructed to IEC 61058-1 subclause 13.1 and has making/ breaking action independent of speed of actuation		N/A
14.6.3	Switch tested to 14.6.1 b) compliant with IEC 61058-1 subclause 16.2.2 d) and m) not attaining excessive temperatures in use		N/A
14.6.4	Switch tested to 14.6.1 b) has adequate dielectric strength		N/A
14.6.5	Mains switch controlling mains socket outlets additional tests to IEC 61058-1	No switch	N/A
	Socket outlet current marking correct	No socket outlet	N/A
14.7	Safety interlocks		-
	Safety interlocks to 2.8 of IEC 60950-1	Not used	N/A
14.8	Voltage setting devices and the like		-
	Voltage setting device not likely to be changed accidentally	Not used	N/A
14.9	Motors		-
14.9.1	Endurance test on motors	Not used	N/A
	Motor start test		N/A
	Dielectric strength test		N/A
14.9.2	Not adversely affected by oil or grease etc		N/A
14.9.3	Protection against moving parts		N/A
14.9.4	Motors with phase-shifting capacitors, three-phase motors and series motors meet clause B.8, B.9 and B.10 of IEC 60950, Annex B		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
14.10	Batteries		-
14.10.1	Batteries mounted with no risk of accumulation of flammable gases	No Batteries	N/A
14.10.2	No possibility of recharging non-rechargeable batteries		N/A
14.10.3	Recharging currents and times within manufacturers limits		N/A
	Lithium batteries discharge and reverse currents within the manufacturers limits		N/A
14.10.4	Battery mould stress relief		N/A
14.10.5	Battery drop test		N/A
14.11	Optocouplers		-
	a) Comply with 13.6 (jointed insulation) and N.2.1	Creepage and clearance OK.	P
	b) Comply with IEC 60747-5-5:2007		P
	Alternative to a) and b) optocoupler comply with 13.8		N/A
	a) Comply with 13.6 (jointed insulation) and N.2.1	TRF error. Repeat of a) above.	N/A
14.12	Surge suppression varistors		-
	Comply with IEC 61051-2	Approved to IEC 61051-2	P
	Not connected between mains and accessible parts except for earthed parts of permanently connected apparatus		P
	Complies with the current pulse, fire hazard and thermal stress requirements of 14.12		N/A
15	TERMINALS		-
15.1.1	Mains plug, appliance inlet, interconnection couplers and mains socket-outlet meet the appropriate standard	Approved Cord set and Inlet used	P
	Overloading of plugs or appliance inlets prevented if the apparatus has mains socket outlets	No socket outlet	N/A
	Overloading of internal wiring prevented if the apparatus has mains socket outlets		N/A
15.1.2	Connectors for antenna, earth, audio, video or data		-
	No risk of insertion in mains socket-outlets	No such connectors	N/A
	No risk of insertion into audio or video: outlets marked with the symbol of 5.2		N/A
15.1.3	Output terminals of a.c. adaptors or similar devices not compatible with household mains socket-outlets	Adaptor output DC connector and LPS source	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
15.2	Provision for protective earthing		-
	Accessible conductive parts of Class I equipment reliably connected to earth terminal, within equipment	Class II device	N/A
	Protective earth conductors correctly coloured	Plastic enclosure	N/A
	Equipment with non-detachable mains cord provided with separate protective earth terminal near mains input	Detachable cord	N/A
	Protective earth terminal resistant to corrosion		N/A
	Earth resistance test: $< 0,1 \Omega$ at 25 A :		N/A
15.3	Terminals for external flexible cords and for permanent connection to the mains supply		-
15.3.1	Adequate terminals for connection of permanent wiring	Not permanent	N/A
15.3.2	Reliable connection of non-detachable cords	Inlet	N/A
	Not soldered to conductors of a printed circuit board	Inlet	N/A
	Adequate clearances and creepage distances between connections should a wire break away	Inlet	N/A
	Wire secured by additional means to the conductor	No crimps	N/A
15.3.3	Screws and nuts clamping conductors have adequate threads: ISO 261, ISO 262 or similar	1. Inlet. 2. No screws	N/A
15.3.4	Soldered conductors wrapped around terminal prior to soldering or held in place by additional means	Inlet	N/A
	Clamping of conductor and insulation if not soldered or held by screws	Inlet	N/A
15.3.5	Terminals allow connection of appropriate cross-sectional area of conductors, for the rated current of the equipment	Inlet	N/A
15.3.6	Terminals to 15.3.3 have sizes required by table 16	Inlet	N/A
15.3.7	Terminals clamp conductors between metal and have adequate pressure	Inlet	N/A
	Terminals designed to avoid conductor slipping out when tightened or loosened	Inlet	N/A
	Terminals adequately fixed to avoid loosening when the clamping is tightened or loosened and stress on internal wiring is avoided	Inlet	N/A
15.3.8	Terminals carrying a current more than 0,2 A contact pressure not transmitted by insulating material except ceramic	No insulators	N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
15.3.9	Termination of non-detachable cords: wires terminated near to each other	Inlet	N/A
	Terminals located and shielded: test with 8 mm strand	Inlet	N/A
15.4	Devices forming a part of the mains plug		-
15.4.1	No undue strain on mains socket-outlets		N/A
15.4.2	Device complies with standard for dimensions of mains plugs		N/A
15.4.3	Device has adequate mechanical strength (tests a,b,c)		N/A
16	EXTERNAL FLEXIBLE CORDS		-
16.1	Mains cords sheathed type, complying with IEC 60227 for PVC or IEC 60245 for synthetic rubber cords	Power supply cord is to be provided at end use.	N/A
	Non-detachable cords for Class I have green/yellow core for protective earth	Detachable.	N/A
16.2	Mains cords conductors have adequate cross-sectional area for rated current consumption of the equipment		N/A
16.3	a) Flexible cords not complying with 16.1, used for interconnections between separate units of equipment used in combination and carrying hazardous live voltages, have adequate dielectric strength		N/A
	b) Flexible cords not complying with 16.1, withstand bending and mechanical stress (3.2 of IEC 60227-2)		N/A
16.4	Flexible cords used for connection between equipment have adequate cross-sectional areas to avoid temperature rise under normal and fault conditions		N/A
16.5	Adequate strain relief on external flexible cords	Inlet	N/A
	Not possible to push cord back into equipment	Inlet	N/A
	Strain relief device unlikely to damage flexible cord	Inlet	N/A
	For mains cords of Class I equipment, hazardous live conductors become taut before earth conductor	Inlet	N/A
16.6	Apertures for external flexible cord: no risk of damage to the cord during assembly or movement in use	Inlet	N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
16.7	Transportable musical instruments and amplifiers fitted with detachable cord set with appliance inlet to IEC 60320-1	Not transportable or musical	N/A
	Transportable musical instruments and amplifiers fitted with detachable cord sets or with means of stowage to protect the cord	Not transportable or musical	N/A

17	ELECTRICAL CONNECTIONS AND MECHANICAL FIXINGS		-
17.1	Torque test to table 20		N/A
	- screws into metal: 5 times	No screw terminals. Plastic enclosure secured together by ultrasonically welded.	N/A
	- screws into non-metallic material: 10 times		N/A
17.2	Correct introduction into female threads in non-metallic material		N/A
17.3	Cover fixing screws: captive		N/A
	Non-captive fixing screws: no hazard when replaced by a screw whose length is 10 times its diameter		N/A
17.4	No loosening of conductive parts carrying a current > 0,2 A	No screw terminals	N/A
17.5	Contact pressure not transmitted through plastic other than ceramic for connections carrying a current > 0,2 A	No contact pressure thru insulation	N/A
17.6	Stranded conductors of flexible supply cords carrying a current > 0,2 A with screw terminals not consolidated by solder	No screw terminal	N/A
17.7	Cover fixing devices other than screws have adequate strength and their positioning is unambiguous		N/A
17.8	Fixing devices for detachable legs or stands provided	No detachable legs, stand, feet.	N/A
17.9	Internal pluggable connections, affecting safety, unlikely to become disconnected	No Internal pluggable connections	N/A

18	MECHANICAL STRENGTH OF PICTURE TUBES AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		-
18.1	Picture tube separately approved to IEC 61965.....:	No CRT	N/A
	Picture tube separately approved to 18.2:	No CRT	N/A
18.2	Non-intrinsically protected tubes tested to 18.2		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
19	STABILITY AND MECHANICAL HAZARDS		-
	Mass of the equipment exceeding 7 kg	< 7kg	N/A
	Apparatus intended to be fastened in place – suitable instructions.....		N/A
19.1	Test on a plane, inclined at 10° to the horizontal	< 7kg	N/A
19.2	100 N force applied vertically downwards	< 7kg	N/A
19.3	100N force or 13% of weight, applied horizontally to point of least stability	< 25kg, < 1m	N/A
19.4	Edges or corners not hazardous	Edges, corners OK	P
19.5	Glass surfaces (excl. laminated) with an area exceeding 0,1 m ² or maximum dimension > 450 mm, pass the test of 19.5.1	No large glass	N/A
19.6	Wall or ceiling mountings adequate	Not wall or ceiling mount	N/A
20	RESISTANCE TO FIRE		-
20.1	Electrical components and mechanical parts		-
	a) Exemption for components contained in an enclosure of material V-0 to IEC 60695-11-10 with openings not exceeding 1 mm in width	Enclosure V-1, no openings. Evaluated in IEC60950-1 report	P
	b) Exemption for small components as defined in 20.1	Small components ≤ 1750mm ³ , mounted on V-0 pcb.	P
20.1.1	Electrical components meet the requirements of Clause 14 or 20.1.4	Approved components	P
20.1.2	Insulation of internal wiring working at voltages > 4 KV or leaving an internal fire enclosure, or located within the areas mentioned in Table 21, not contributing to the spread of fire	No H.V	N/A
20.1.3	Material of printed circuit boards on which the available power exceeds 15 W at a voltage between 50 V and 400 V (peak) a.c. or d.c. meets V-1 or better to IEC 60695-11-10, unless used in a fire enclosure	PCB V-0	P
	Material of printed circuit boards on which the available power exceeds 15 W at a voltage >400 V (peak) a.c. or d.c. meets V-0 to IEC 60695-11-10	PCB V-0	P
20.1.4	Components and parts not covered by 20.1.1, 20.1.2 and 20.1.3 (other than fire enclosures) mounted nearer to a potential ignition source than the distances in Table 21 comply with the relevant flammability category in Table 21	Evaluated in IEC60950-1 report	P
	Components and parts as above but shielded from a potential ignition source, with the barrier area in accordance with Table 21 and fig. 13	No barrier	N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Apparatus with voltages >4kV under normal operating conditions and distances to the enclosure exceed those specified Table 21, flammability classification HB40 or better is required for the enclosure	< 4kV	N/A
20.2	Fire enclosure		-
20.2.1	Potential ignition sources with open circuit voltage > 4 kV (peak) a.c. or d.c. contained in a fire enclosure to V-1	< 4kV	N/A
20.2.2	Internal fire enclosures with openings not exceeding 1 mm in width and with openings for wires completely filled	No internal fire enclosure	N/A
20.2.3	Requirements of 20.2.1 and 20.2.2 met by an internal fire enclosure	No internal fire enclosure	N/A
A	ANNEX A, ADDITIONAL REQUIREMENTS FOR APPARATUS WITH PROTECTION AGAINST SPLASHING WATER		-
A.5	Marking and instructions		N/A
A.5.1	j) Marked with IPX4 (IEC 60529), 5.4.1 a) does not apply		N/A
A.10	Insulation requirements		
A.10.2	Splash and humidity treatment		N/A
A.10.2.1	Enclosure provides protection against splashing water		N/A
A.10.2.2	Humidity treatment carried out for 7 days		N/A
B	ANNEX B, APPARATUS TO BE CONNECTED TO THE TELECOMMUNICATION NETWORKS		-
	Complies with IEC 62151 clause 1	Not connected to telecom	N/A
	Complies with IEC 62151 clause 2		N/A
	Complies with IEC 62151 clause 3 but with 3.5.4 modified to 2.4.10 of this standard		N/A
	Complies with IEC 62151 clause 4 but with 4.1.2, 4.1.3 and 4.2.1.2 modified in accordance with annex B of this standard		N/A
	Complies with IEC 62151 clause 5 but with 5.3.1 modified in accordance with annex B of this standard		N/A
	Complies with IEC 62151 clause 6		N/A
	Complies with IEC 62151 clause 7		N/A
	Complies with IEC 62151 annex A, B and C		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
L	ANNEX L, Additional requirements for electronic flash apparatus for photographic purposes		
L. 5	Marking and instructions		N/A
L. 5.4	Instructions for battery chargers and Supply apparatus indicating type or model number of flash apparatus with which it is to be used	No batteries	N/A
	Instructions for flash apparatus indicating type or model number of battery chargers or Supply apparatus with which it is to be used		N/A
L. 7	Heating under normal operating conditions		N/A
L 7.1.5 & L 11.2.6	Lithium batteries meet permissible temp rise in Table 3 , unless comply with 6.2.2.1.or 6.2.2.2 of IEC 60086-4	No lithium.	N/A
L. 9	Electric shock hazard under normal operating conditions		-
L. 9.1.1	Terminals to connection to synchroniser not HAZARDOUS LIVE		N/A
L.10	Insulation requirements		-
L. 10.3.2	High frequency pulse ignition		N/A
L. 12	Mechanical strength		-
L. 12.1.3	Windows for flash tubes are excluded from steel ball impact test		N/A
L. 14	Components		
L. 14.6.6	Mains switch characteristics appropriate to its function under normal conditions		N/A
L. 20	Resistance to fire		-
L. 20.1 c)	Trigger coil for discharge purpose is not considered to be a POTENTIAL IGNITION SOURCE		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict

14	TABLE: list of critical components and materials					P
Object/part No.	Manufacturer / Trademark	Type / Model	Technical data ²⁾	Standard	Mark(s) of conformity ¹⁾	
Plastic Enclosure	SABIC Innovative Plastics	SE1X(GG) (f1) 945	Min. V-1, min. 2,0 mm thickness, 105°C	UL94	UR (E45329)	
Appliance Inlet	Tecx-Unions	SO-222	2.5 A, 250Vac (C8 type)	EN 60320-1, UL 498	VDE, UL	
Alternative	Sun Fair	S-01	2.5 A, 250Vac (C8 type)	EN 60320-1, UL 498	VDE, UL	
Alternative	Zhejiang LECI	DB-8	2.5 A, 250Vac (C8 type)	EN 60320-1, UL 498	VDE, UL	
Alternative	Zhe Jiang Bei Er jia	ST-A03-005	2.5 A, 250Vac (C8 type)	EN 60320-1, UL 498	VDE, UL	
PCB	CHEERFUL ELECTRONIC	03A series	V-0, 130C, 1.3mm thick	UL 94, UL 796	UR (E199724)	
Fuse (F1)	Littelfuse	215 series	T3.15AH, 250Vac, 1500 A, 5x20mm Ceramic Cartridge, two pigtails soldered to PCB	IEC/EN 60127-1, UL/CSA 248-14	UR (E10480), CSA (29862), VDE (40013521)	
Varistor (MOV1) (optional) after mains fuse	Centra Science Corp	CNR-14V511K, CNR-14D511	320Vac, 410Vdc, (Flame class of body coating complied with V-0)	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd SPD type 3 approve	VDE, UL	
Alternative	Centra Science Corp.	CNR-10V471K, CNR-14D471K	300Vac, 385Vdc, (Flame class of body coating complied with V-0)	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd SPD type 3 approved	VDE, UL	
Alternative	Joyin Co Ltd	10N511K, 14N511K, 14S511K	320Vac, 418Vdc, (Flame class of body coating complied with V-0)	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd, IEC 60950-1:2005, Annex Q.	VDE, UL	
Alternative	Joyin Co Ltd	14N471K, 10N471K	300Vac, 385Vdc, (Flame class of body coating complied with V-0)	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd, IEC 60950-1:2005, Annex Q.	VDE, UL	

IEC 60065					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer / Trademark	Type / Model	Technical data ²⁾	Standard	Mark(s) of conformity ¹⁾
Alternative	Thinking Electronic Industrial Co Ltd	TVR 14471, TVR 10471-V	300Vac, 385Vdc, (Flame class of body coating complied with V-0)	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd, IEC 60950-1:2005, Annex Q.	VDE, UL
Alternative	Thinking Electronic Industrial Co Ltd	TVR 1471 (for VDE), TVR 10471K (for UL)	300Vac, 385Vdc, (Flame class of body coating complied with V-0)	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd SPD type 3 approved	VDE, UL
Alternative	Thinking Electronic Industrial Co Ltd	TVR 14511	320Vac, 410Vdc, (Flame class of body coating complied with V-0)	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd, IEC 60950-1:2005, Annex Q.	VDE, UL
Alternative	Thinking Electronic Industrial Co Ltd	TVR10511 (for VDE), TVR 10511K (for UL)	320Vac, 410Vdc, (Flame class of body coating complied with V-0)	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd SPD type 3 approved	VDE, UL
Alternative	Ceramate Technical Co Ltd	GNR 14D511K	320Vac, 410Vdc, (Flame class of body coating complied with V-0)	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd SPD type 3 approved	VDE, UL
Alternative	Ceramate Technical Co Ltd	GNR 14D471K, GNR10D471K	300Vac, 385Vdc, (Flame class of body coating complied with V-0)	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd SPD type 3 approved	VDE, UL
Alternative	Success Electronics Co Ltd	SVR10D471K, SVR14D471K	300Vac, 385Vdc, (Flame class of body coating complied with V-0)	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd SPD type 3 approved	VDE, UL

IEC 60065					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer / Trademark	Type / Model	Technical data ²⁾	Standard	Mark(s) of conformity ¹⁾
Alternative	Success Electronics Co Ltd	SVR14D511K, SVR10D511K	320Vac, 415Vdc, (Flame class of body coating complied with V-0)	VIEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL 1449 3rd SPD type 3 approved	VDE, UL
X-capacitor (CX1) (optional)	Cheng Tung	CTX	Max. 0.33uF, Min. 250V, 100°C, X1 or X2	IEC/EN 60384-14:2005, UL 60384-14	VDE, UL
Alternative	Ultra Tech Xiphi	HQX	Max. 0.33uF, Min. 250V, 100°C, X1 or X2	IEC/EN 60384-14:2005, UL 60384-14	VDE, UL
Alternative	DAIN	MPX, MEX, NPX	Max. 0.33uF, Min. 250V, 100°C, X1 or X2	IEC/EN 60384-14:2005, UL 60384-14	VDE, UL
Alternative	Tenta	MEX	Max. 0.33uF, Min. 250V, 100°C, X1 or X2	IEC/EN 60384-14:2005, UL 60384-14	VDE, UL
Alternative	Joey	MPX	Max. 0.33uF, Min. 250V, 100°C, X1 or X2	IEC/EN 60384-14:2005, UL 60384-14	VDE, UL
Alternative	Xiangtai	MKP/MPX	Max. 0.33uF, Min. 250V, 100°C, X1 or X2	IEC/EN 60384-14:2005, UL 60384-14	VDE, UL
Alternative	Carli	MPX	Max. 0.33uF, Min. 250V, 100°C, X1 or X2	IEC/EN 60384-14:2005, UL 60384-14	VDE, UL
Optocoupler (PC1)	Everlight	EL817	Dti=0.5mm Int. dcr=6.0mm Ext. dcr= 7.7mm, thermal cycling test, 110 °C	IEC/EN 60950-1 EN 60747-5-5 UL 1557	cURus (E214129), VDE, Fimko
Alternative	Lite-On	LTV-817	Dti =0.6mm Ext. dcr=7.8mm, thermal cycling test, 100 °C	IEC/EN 60950-1 EN 60747-5-5 UL 1557	cURus (E113898), VDE, Fimko
Alternative	Bright Led	BPC-817 A/B/C/D/L BPC-817 S BPC-817 M	Dti=0.4mm Ext. dcr=7.0mm, thermal cycling test, 100 °C	IEC/EN 60950-1 EN 60747-5-5 UL 1557	cURus (E236324), VDE, Fimko
Alternative	Cosmo Electronics Corp	K1010	Dti=0.6mm Int. dcr=4.0mm Ext. dcr=5.0mm, thermal cycling test, 115 °C	IEC/EN 60950-1 EN 60747-5-5 UL 1557	cURus (E169586), VDE, Fimko

IEC 60065					
Clause	Requirement + Test		Result - Remark		Verdict
Object/part No.	Manufacturer / Trademark	Type / Model	Technical data ²⁾	Standard	Mark(s) of conformity ¹⁾
Alternative	Renesas Electronics Corporation	PS2501 series	Dti=0.4mm Ext. dcr= 7.0mm, thermal cycling test, 5000V, 100 °C	IEC/EN 60950-1 EN 60747-5-5 UL 1557	cURus (E72422), VDE, Fimko
Bridge rectifier	LITE-ON Semiconductor	GBL406	420V, V-0, 150°C	UL 1557	UR (E95060)
Y- Capacitor (CY1, CY2) (optional) (CY1=CY2= max. 2200pF)	Walsin Technology Corp	AH	2200pF, Min. 250 V, min. 125°C, Y1	IEC 60384-14 EN 60384-14, UL 60384-14	VDE, cURus (E146544)
Alternative	Success Electronics Co Ltd	SE SB	Min. 250 V, min. 125 °C, Y1	IEC 60384-14 EN 60384-14, UL 60384-14	VDE, UL
Alternative	TDK-EPC Corporation	CD	Min. 250 V, min. 125 °C, Y1	IEC 60384-14 EN 60384-14, UL 60384-14	VDE, UL
Alternative	Haohua Electronic Co	CT 7	Min. 250 V, min. 125 °C, Y1	IEC 60384-14 EN 60384-14, UL 60384-14	VDE, UL
Alternative	Xiangtai Electronics	YO-series	Min. 250 V, min. 125 °C, Y1	IEC 60384-14 EN 60384-14, UL 60384-14	VDE, UL
Alternative	Juhong EIE	JB-series	Min. 250 V, min. 125 °C, Y1	IEC 60384-14 EN 60384-14, UL 60384-14	VDE, UL
Transformer (T1)		XF00927	Class B, 130C	UL 1446, CSA No. 0, IEC 60950-1 and IEC 60065	cURus (E308897); Evaluated in end-product
Bobbin	Chang Chun Plastics Co Ltd	T375J, T375HF	Phenolic, V-0, min. thickness 0.8mm, 150°C	UL 94, CSA No. 0.17	cURus (E304813) cURus (E59481)
Alternative	Sumitomo Bakelite Co Ltd	PM-9820	Phenolic, V-0, min. thickness 0.8mm, 150°C	UL 94, CSA No. 0.17	cURus (E41429)
Insulation Tape	3M Company Electrical Markets DIV (EMD)	1350F-(#), 1350T-1	Polyester tape, 130°C, 0.05mm thick	--	UL
Alternative	Bondtec Pacific Co Ltd	370S	Polyester tape, 130°C, 0.05mm thick	--	UL
Alternative	JINGJIANG YAHUA	CT	Polyester tape, 130°C, 0.05mm thick	--	UL

IEC 60065					
Clause	Requirement + Test			Result - Remark	Verdict
Object/part No.	Manufacturer / Trademark	Type / Model	Technical data ²⁾	Standard	Mark(s) of conformity ¹⁾
Triple Insulated wire (Used in T1)	Great Leoflon Industrial Co Ltd	TRW(B) series	130°C (Class B),	UL 2353, UL 1446	UR (E211989)
Supplementary information: ¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039. ²⁾ Description to include adjacent markings for critical fuse/s.					