

TEST REPORT

IEC 60950-1: 2005 (2nd Edition) and/or EN 60950-1:2006 Information technology equipment – Safety – Part 1: General requirements



Report Reference No.	T223-0249/10
Date of issue	2010-08-18
Total number of pages	142 pages
CB/CCA Testing Laboratory	SIQ – Slovenian Institute of Quality and Metrology Testing Laboratory is accredited by Slovenian Accreditation, Reg. No.: LP-009
Address	Tržaška cesta 2, 1000 Ljubljana, Slovenia
Applicant's name	GlobTek Inc.
Address	Corporate Headquarters, 186 Veterans Dr Northvale, NJ 07647 / USA
Manufacturer's name	GlobTek Inc.
Address	Corporate Headquarters, 186 Veterans Dr Northvale, NJ 07647 / USA
Factory's name	1) GlobTek Inc.
Address	Corporate Headquarters, 186 Veterans Dr Northvale, NJ 07647 / USA
Factory's name	2) Globtek (Suzhou) Co. Ltd.
Address	Building 4, # 76, Jin Ling East Rd., Suzhou Park, Suzhou, Jiangsu 215021, P.R. China
Test specification:	
Standard	<input checked="" type="checkbox"/> IEC 60950-1:2005 (2nd Edition) + Am 1:2009 and/or <input checked="" type="checkbox"/> EN 60950-1:2006 + Am 1:2010 + Am 11:2009
Test procedure	CB
Non-standard test method	N/A
Test Report Form No.	IECEN60950_1C
Test Report Form(s) Originator	SGS Fimko Ltd, modified by SIQ
Master TRF	Dated 2007-06. modified by SIQ 2010-07
Copyright © 2007 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.	
This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.	
If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.	
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.	

Test item description	: Direct plug-in power supply
Trade Mark	: GlobTek
Model/Type reference.....	: GT-41076-AABB-C.C
	Where "AA" stands for the output power in Watts
	"BB" stands for the output voltage in Volts
	"C.C" is optional for specifying output voltage deviation from standard model:
	Subtracting C.C volts from standard output voltage in 0,1 V increments.
Ratings.....	: Input: 100-240 Vac.; 0,3 A; 50-60 Hz
	Output: 3-24 Vdc; 6 W (see below)

NOMENCLATURE:

Model	Output voltage	Output power
GT-41076-0603-C.C	3 V d.c.	6 W
GT-41076-0605-C.C	5 Vd.c.	6 W
GT-41076-0609-C.C	9 Vd.c.	6 W
GT-41076-0612-C.C	12 Vd.c.	6 W
GT-41076-0615-C.C	15 Vd.c.	6 W
GT-41076-0618-C.C	18 Vd.c.	6 W
GT-41076-0620-C.C	20 Vd.c.	6 W
GT-41076-0624-C.C	24 Vd.c.	6 W

Each output current can vary within its designated range, as long as the output power is not exceeded.

Testing procedure and testing location:	
<input checked="" type="checkbox"/> CB/CCA Testing Laboratory:	SIQ – Slovenian Institute of Quality and Metrology
Testing location/ address	Tržaška cesta 2, 1000 Ljubljana, Slovenia
<input type="checkbox"/> Associated CB Laboratory:	
Testing location/ address	
Tested by (name + signature)	Branko Lamovšek 
Approved by (+ signature)	Boštjan Glavič 
<input type="checkbox"/> Testing procedure: TMP	
Tested by (name + signature)	
Approved by (+ signature)	
Testing location/ address	
<input type="checkbox"/> Testing procedure: WMT	
Tested by (name + signature)	
Witnessed by (+ signature)	
Approved by (+ signature)	
Testing location/ address	
<input type="checkbox"/> Testing procedure: SMT	
Tested by (name + signature)	
Approved by (+ signature)	
Supervised by (+ signature)	
Testing location/ address	
<input type="checkbox"/> Testing procedure: RMT	
Tested by (name + signature)	
Approved by (+ signature)	
Supervised by (+ signature)	
Testing location/ address	

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

1. Test Report
2. National Differences – Enclosure No. 1
3. European Group Differences and National Differences according to EN 60950-1:2006 + A11:2009 – Enclosure No. 1a
4. Pictures – Enclosure No. 2
5. Schematics, Layouts, Transformer data - Enclosure No. 3
6. Construction data and measurement of plug in power supply connector – Enclosure No. 4

Summary of testing:

The unit was tested to the standard IEC 60950-1:2005 (2nd Edition) + A1:2009 and/or EN 60950-1:2006 + A1:2010 + A11:2009 and fulfils the requirements of the standard.

1. The products were tested on a 16 A (IEC) branch circuit. The unit is approved for TN mains.
2. All secondary output circuits are separated from mains by reinforced insulation and rated SELV non - hazardous energy levels.
3. The unit is forming part of the mains plug; therefore mains plug is considered as disconnecting device.
4. The unit is a direct plug in equipment.
5. The power supply is rated class II.
6. The transformer T1 provides reinforced insulation. This transformer is built up to fulfil the requirement of insulation class B and provide in addition an UR (OBJY2) insulation system. (see also list of safety critical components).
7. The maximum working voltages are 270 Vrms; 508 Vpk.
8. The equipment has been evaluated for use in a Pollution Degree 2 and overvoltage category II environment and a maximum altitude of 2000 m.
9. The product was evaluated for a maximum ambient of 30°C. The temperature test was performed with unit in vertical and horizontal position without forced air cooling
10. Dimensions of the injection part of the European plug are in accordance with the requirement of EN 50075 standard. Dimensions of the injection part of the US plug are in accordance with the requirement of UL 1310 standard. Dimensions of the injection part of the UK plug are in accordance with the requirement of the BS 1363 standard. Dimensions of the injection part of the Australian plug are in accordance with the AS/NZS 3112.
Only dimensions of the plugs were measured and torque test was performed. Compliance with the BS 1363 and AS/NZS 3112 shall be evaluated during national approval.

Tests performed (name of test and test clause):

See next page

Testing location:

SIQ

Summary of compliance with National Differences:

Argentina**, Australia*, Austria**, Belarus**, Belgium**, Brazil**, Bulgaria**, Canada, China*, Croatia**, Czech Republic**, Denmark, Finland, France**, Germany, Greece**, Hungary**, India**, Indonesia**, Ireland, Israel**, Italy**, Japan*, Kenya**, Korea, Malaysia**, Mexico**, Netherlands**, New Zealand*, Norway, Poland**, Portugal**, Romania**, Russian Federation**, Saudi Arabia**, Serbia**, Singapore**, Slovakia**, Slovenia**, South Africa**, Spain, Sweden, Switzerland, Thailand**, Turkey**, Ukraine**, United Arab Emirates**, United Kingdom, Uruguay**, USA

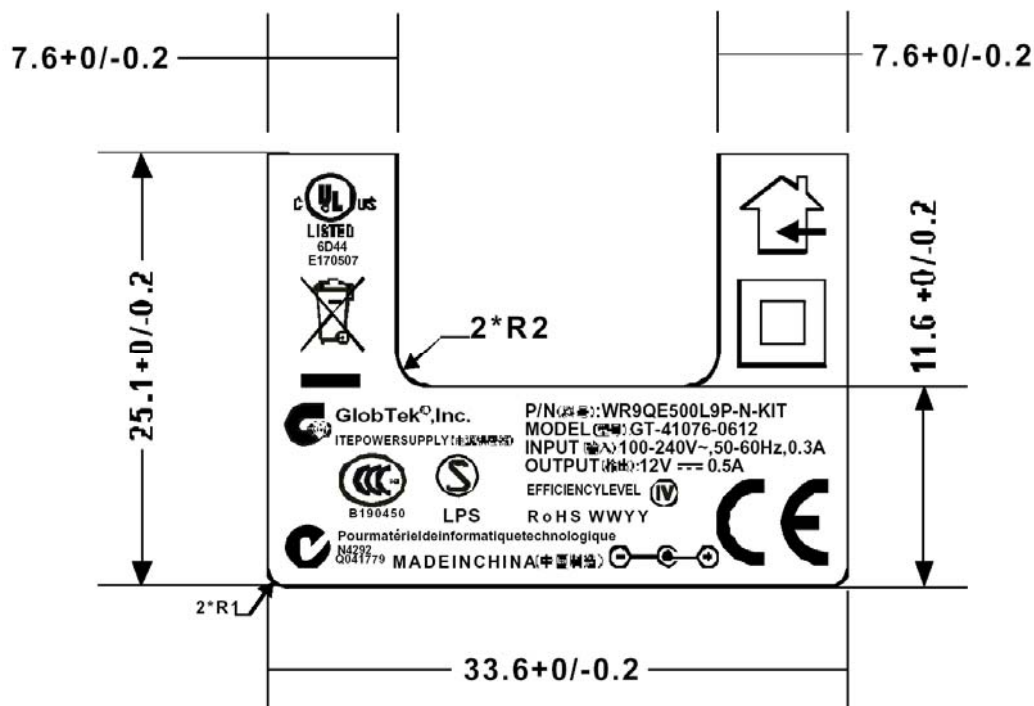
* No national differences to IEC 60950-1:2005 (2nd edition) declared

** No national differences to IEC 60950-1:2005 (2nd edition) or IEC 60950-1:2001 (1st edition) declared

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.

(Additional requirements for markings. See 1.7 NOTE)



Overview of the testing done

(P = Test passed, N/A test not applicable)

Clause	Test	Test Conducted
1.6.2	Input Test	P
1.7.11	Durability	P
2.1.1.5	Energy Hazard Measurements	P
2.1.1.7	Capacitance Discharge Test	P
2.1.1.8	Energy hazards – d.c. mains supplies	N/A
2.2.2	SELV: Hazard Voltage (Circuit) Measurement Test	P
2.2.3	SELV Reliability testing	P
2.4	Limited Current Circuit (Bridging components)	P
2.5	Limited Power Source	P
2.6	Earthing Test, earth trace test (UL PAG)	N/A
2.9.2	Humidity Test	P
2.10.2	Working Voltage measurement on PCB and Transformer	P
2.10.3/ 2.10.4	Clearance and Creepage distance measurement	P
2.10.5.6	Thin Sheet Material (barriers)	P
2.10.5.3	Enclosed or Hermetically Sealed Unit Test	N/A
4.2.2- 4.2.4	Steady force test, 10N, 30 N, 250 N	P
4.2.5	Impact test, Fall test, Swing test	N/A
4.2.6	Drop test	P
4.2.7	Stress relief test; heat test (°C/7 h)	P
4.2.10	Wall or ceiling mounted equipment	N/A
4.3.2	Handle Test (with USA Deviation)	N/A
4.3.6	Torque Test for direct plug in Products. Dimensions of the plugs	P
4.5.2	Heating (Temperature) Test	P
4.5.5	Resistance to abnormal heat (Ball pressure test)	P
5.1	Touch Current and protective conductor current	P
5.2	Electric Strength Test	P
5.3	Abnormal Operating Tests foreseeable misuse: SELV reliability and failure in the voltage regulation Functional insulation, Component faults Overload and short and no load at the outputs , Air holes closed, Fan blocked, Voltage Mismatch, battery back feed test	P
	Hot swap test	N/A
	Insulation resistance Test	N/A

Test item particulars	
Equipment mobility	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input checked="" type="checkbox"/> direct plug-in
Connection to the mains	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
Operating condition	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
Mains supply tolerance (%) or absolute mains supply values	+/- 10% or 90 – 264 Va.c.
Tested for IT power systems	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V)	N/A
Class of equipment	<input type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating (A)	0,3 A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class	IP20
Altitude during operation (m)	2000
Altitude of test laboratory (m)	300
Mass of equipment (kg)	0,1 kg
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	2010-01-16
Date(s) of performance of tests	From 2010-08-10 to 2010-08-18
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. "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.</p> <p>Note: This TRF includes EN Group Differences together with National Differences and Special National Conditions, if any. All Differences are located in the Appendix to the main body of this TRF.</p> <p>Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.</p>	

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 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) Globtek, Inc. 186 Veterans Dr, Northvale, Nj 07647, USA
2) Globtek (Suzhou) Co. Ltd., Building 4, # 76, Jin Ling East Rd., Suzhou Park, Suzhou, Jiangsu 215021, P.R.China

History Sheet

Date	Report Number	Change	Revision No.
2006-03-21	T223-0068/06	Initial Test Report issued.	—
2008-07-24	T223-0068/06 Amendment-1	Amendment-1: The original Test Report Ref. No. T223-0068/06, dated 2006-03-21 was modified on 2008-07-23 to include the following changes and/or additions: Added IEC 60320 connector Q-C18(R) to the report. Connector separately tested for this application After review, no additional testing considered required. Information about plug added in list of critical components, added pictures of the plug, plug drawings, information about material and extract from test report for plug.	1.0
2009-02-12	T223-0068/06 Amendment-2	Amendment - 2: The original Test Report Ref. Number T223-0068/06 was modified on 2009-02-12 to include following changes and/or additions: New name and address of the factory added Globtek (Suzhou) Co. Ltd., Building 4, # 76, Jin Ling East Rd., Suzhou Park, Suzhou, Jiangsu 215021, P.R.China	2.0
2010-08-18	T223-0249/10	Test report updated to 2 nd Edition of IEC 60950-1:2005. Update of list of critical component done (added optional varistor). No other testing was required.	3.0

General product information:**Information about the Product:**

Switch mode Power Supply family with SELV output for direct plug in use. Units are different in the output voltage, which range from 3-24 Vdc.

Information for Production testing (low voltage directive) :Dielectric Testing:

Primary to secondary: 1500 Vac, 1 sec.

Primary to enclosure: 1500 Vac, 1 sec.

The transformers with reinforced insulation have to be tested by itself with 3000 Vac primary to secondary and marked with a stamp accordingly.

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)

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended table 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	--	N/A
1.5.4	Transformers	(see list of safety critical components table 1.5.1 and the transformer drawings in the Enclosure No. 3)	P
1.5.5	Interconnecting cables	--	N/A
1.5.6	Capacitors bridging insulation	Certified Y1 capacitors acc. IEC 60384-14 are used primary to secondary (bridging reinforced insulation).	P
1.5.7	Resistors bridging insulation	No resistors bridging insulation.	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	No components connected between line and earth.	N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.9	Surge suppressors	Approved varistor is used. (see table 1.5.1) Annex Q	P
1.5.9.1	General	Surge suppressors comply with IEC 61051-2.	P
1.5.9.2	Protection of VDRs	Fuse in Line is protecting VDR.	P
1.5.9.3	Bridging of functional insulation by a VDR	Surge suppressors connected Line to Neutral comply with IEC 61051-2.	P
1.5.9.4	Bridging of basic insulation by a VDR	--	N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No VDR bridging double or reinforced insulation.	N/A

1.6	Power interface		P
1.6.1	AC power distribution systems	TN	P
1.6.2	Input current	(see appended table 1.6.2) The steady state input current of the equipment did not exceed the rated current by more than 10% under NORMAL LOAD and measured at rated input voltage.	P
1.6.3	Voltage limit of hand-held equipment	The equipment is not hand-held.	N/A
1.6.4	Neutral conductor	Class II equipment. Phase conductor separated to body by reinforced insulation.	P

1.7	Marking and instructions		P
1.7.1	Power rating and identification marking	The required marking is readily visible in Operator access area.	P
1.7.1.1	Power rating marking	--	P
	Multiple mains supply connections.....:	--	N/A
	Rated voltage(s) or voltage range(s) (V)	100-240 Va.c.	P
	Symbol for nature of supply, for d.c. only	AC input voltage only	N/A
	Rated frequency or rated frequency range (Hz) ...:	50-60 Hz	P
	Rated current (mA or A)	0,3 A	P
1.7.1.2	Identification markings	GT-41076-AABB-C.C	P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Manufacturer's name or trade-mark or identification mark	GlobTek Inc.	P
	Model identification or type reference	See nomenclature and copy of marking plate for details.	P
	Symbol for Class II equipment only	Class II symbol (IEC 60417-1, symbol No. 5172) is applied to the label.	P
	Other markings and symbols	For indoor use only.	P
1.7.2	Safety instructions and marking	--	N/A
1.7.2.1	General	--	N/A
1.7.2.2	Disconnect devices	Unit is directly pluggable equipment type A.	N/A
1.7.2.3	Overcurrent protective device	Not pluggable equipment type B or permanently connected equipment.	N/A
1.7.2.4	IT power distribution systems	The unit is not intended for IT power distribution systems	N/A
1.7.2.5	Operator access with a tool	The unit is operator accessible. There are no areas to be opened with tool by the operator.	N/A
1.7.2.6	Ozone	Unit 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 (Power supply has a wide range input circuit).	N/A
	Methods and means of adjustment; reference to installation instructions	--	N/A
1.7.5	Power outlets on the equipment	No power outlet provided.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	Fuse identification is marked adjacent to the fuse on the PCB.	P
1.7.7	Wiring terminals	Direct plug in equipment.	N/A
1.7.7.1	Protective earthing and bonding terminals	Appliance is class II.	N/A
1.7.7.2	Terminals for a.c. mains supply conductors	--	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	--	N/A
1.7.8	Controls and indicators	No controls and indicators provided.	N/A
1.7.8.1	Identification, location and marking	--	N/A
1.7.8.2	Colours	--	N/A
1.7.8.3	Symbols according to IEC 60417	--	N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.8.4	Markings using figures	--	N/A
1.7.9	Isolation of multiple power sources	--	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.	P
1.7.13	Replaceable batteries	No lithium battery in the equipment.	N/A
	Language(s)	English.	—
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		P
2.1.1	Protection in operator access areas	No operator access or user serviceable parts other than SELV outputs (in the end product).	P
2.1.1.1	Access to energized parts	The outputs provide non - hazardous energy.	P
	Test by inspection	Verified.	P
	Test with test finger (Figure 2A)	Verified.	P
	Test with test pin (Figure 2B)	Verified.	P
	Test with test probe (Figure 2C)	No TNV circuits.	N/A
2.1.1.2	Battery compartments	No battery compartment.	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring.	N/A
	Working voltage (V _{peak} or V _{rms}); minimum distance through insulation (mm)	(see appended table 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring	All accessible parts are separated from internal wiring at hazardous voltage by double or reinforced insulation, complying with 2.10.5 and 3.1.4.	P
2.1.1.5	Energy hazards	No energy hazard in operator access area. Checked by means of the test finger.	P
2.1.1.6	Manual controls	No shafts of knobs etc. at ELV or hazardous voltage.	N/A
2.1.1.7	Discharge of capacitors in equipment	--	P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Measured voltage (V); time-constant (s)	See enclosed test results (less than 1 sec)	—
2.1.1.8	Energy hazards – d.c. mains supply	Unit not connected to DC mains.	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	No audio amplifier within the unit.	N/A
2.1.2	Protection in service access areas	No service access area.	N/A
2.1.3	Protection in restricted access locations	--	N/A

2.2	SELV circuits		P
2.2.1	General requirements	SELV limits (at accessible parts) are not exceeded under normal condition and after a single fault.	P
2.2.2	Voltages under normal conditions (V)	SELV voltage by no load and at rated load on the output. (see enclosed test results)	P
2.2.3	Voltages under fault conditions (V)	See test results in appended table 5.3.	P
2.2.4	Connection of SELV circuits to other circuits	Only connection to SELV and limited current circuit.	P

2.3	TNV circuits		N/A
2.3.1	Limits	No TNV circuits in the equipment.	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

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

2.4	Limited current circuits		P
2.4.1	General requirements	The component CY1 is bridging primary to secondary was considered as limited current circuit (see enclosed test table)	P
2.4.2	Limit values	See appended table	P
	Frequency (Hz)	See appended table	—
	Measured current (mA).....	See appended table	—
	Measured voltage (V).....	See appended table	—
	Measured circuit capacitance (nF or μ F)	See appended table	—
2.4.3	Connection of limited current circuits to other circuits	--	N/A

2.5	Limited power sources		P
	a) Inherently limited output	The output is limited to the values of table 2B in normal condition and in case of single fault.	P
	b) Impedance limited output	--	N/A
	c) Regulating network limited output under normal operating and single fault condition	See enclosed test results.	P
	d) Overcurrent protective device limited output	--	N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA).....	--	—
	Current rating of overcurrent protective device (A) ..	--	—

2.6	Provisions for earthing and bonding		N/A
2.6.1	Protective earthing	Unit is class II.	N/A
2.6.2	Functional earthing	--	N/A
2.6.3	Protective earthing and protective bonding conductors	--	N/A
2.6.3.1	General	--	N/A
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	--	N/A
	Rated current (A), cross-sectional area (mm^2), AWG	--	—

IEC/EN 60950-1			
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	--	N/A
2.6.4.1	General	--	N/A
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	--	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	--	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		P
2.7.1	Basic requirements	Protective devices are integrated in the equipment, see also Sub-clause 5.3.	P
	Instructions when protection relies on building installation	--	N/A
2.7.2	Faults not simulated in 5.3.7	--	P
2.7.3	Short-circuit backup protection	Building installation is considered as short circuit backup protection.	P
2.7.4	Number and location of protective devices	One fuse or optional one fusible resistor in Line.	P
2.7.5	Protection by several devices	--	N/A
2.7.6	Warning to service personnel.....	--	N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.8	Safety interlocks		N/A
2.8.1	General principles	No safety interlock.	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
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.	P
2.9.2	Humidity conditioning	--	P
	Relative humidity (%), temperature (°C)	See enclosed test results.	—
2.9.3	Grade of insulation	Insulation is considered to be functional, basic, supplementary, reinforced or double.	P
2.9.4	Separation from hazardous voltages	--	P
	Method(s) used	Accessible conductive parts, SELV circuits or TNV circuits are separated from parts at hazardous voltage by double or reinforced insulation (Method 1).	—
2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General	--	P
2.10.1.1	Frequency	50-60 Hz (Switching frequency > 30 kHz).	P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.1.2	Pollution degrees	Pollution degree 2	P
2.10.1.3	Reduced values for functional insulation	Functional insulation Line to Neutral before fuse complies with 2.10.3 & 2.10.4. Other functional insulations comply with 5.3.4 c).	P
2.10.1.4	Intervening unconnected conductive parts	--	N/A
2.10.1.5	Insulation with varying dimensions	No such transformer used.	N/A
2.10.1.6	Special separation requirements	No TNV circuits.	N/A
2.10.1.7	Insulation in circuits generating starting pulses	No such circuit.	N/A
2.10.2	Determination of working voltage	The measured working voltage or the input voltage was applied, whatever value was higher.	P
2.10.2.1	General	--	P
2.10.2.2	RMS working voltage	Considered.	P
2.10.2.3	Peak working voltage	Considered.	P
2.10.3	Clearances	--	P
2.10.3.1	General	--	P
2.10.3.2	Mains transient voltages	--	P
	a) AC mains supply	Overvoltage Category II (2500V _{peak})	P
	b) Earthed d.c. mains supplies	Unit not intended for connection to DC mains.	N/A
	c) Unearthed d.c. mains supplies	Unit not intended for connection to DC mains.	N/A
	d) Battery operation	No battery.	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	(see appended table 2.10.3 and 2.10.4)	P
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	Unit not intended for connection to telecommunication network or cable distribution system.	N/A
2.10.3.9	Measurement of transient voltage levels	--	N/A
	a) Transients from a mains supply	--	N/A
	For an a.c. mains supply	--	N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	For a d.c. mains supply	--	N/A
	b) Transients from a telecommunication network :	--	N/A
2.10.4	Creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.4.1	General	--	P
2.10.4.2	Material group and comparative tracking index	See below.	P
	CTI tests	Material group IIIb) is assumed to be used.	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation		P
2.10.5.1	General		P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation	No such potted components.	N/A
2.10.5.4	Semiconductor devices	Approved optical insulators are used. See list of critical components.	P
2.10.5.5	Cemented joints	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.5.6	Thin sheet material – General	Polyester tape is used in transformer. Transformer is wrapped with two layers of insulating tape.	P
2.10.5.7	Separable thin sheet material	Used inside transformer T1.	P
	Number of layers (pcs).....	2 layers	—
2.10.5.8	Non-separable thin sheet material	No such insulation.	N/A
2.10.5.9	Thin sheet material – standard test procedure	--	N/A
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.10	Thin sheet material – alternative test procedure	--	P
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.11	Insulation in wound components	The transformers were considered as wound components. The primary to secondary insulation is achieved with triple insulated wire (secondary windings). Three layers wound on wire (triple insulated wire) on secondary and 2 layers polyester tape between pri/sec.	P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.12	Wire in wound components	Approved triple insulated wire is used inside transformers. See list of critical components.	P
	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°	No contact between 45° and 90°.	P
2.10.5.13	Wire with solvent-based enamel in wound components	No TNV circuits.	N/A
	Electric strength test	(see appended table 2.10.5)	—
	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		N/A
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.2	Coated printed boards	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	(see appended table 2.10.3 and 2.10.4)	P
2.10.6.4	Insulation between conductors on different layers of a printed board	Single layer PCB provided.	N/A
	Distance through insulation	(see appended table 2.10.5)	N/A
	Number of insulation layers (pcs)	--	N/A
2.10.7	Component external terminations	(see appended table 2.10.3 and 2.10.4)	P
2.10.8	Tests on coated printed boards and coated components	Uncoated PCB provided.	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	(see appended table 5.2)	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

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.11	Tests for semiconductor devices and cemented joints	--	N/A
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	All wires are approved, see list of critical components.	P
3.1.2	Protection against mechanical damage	--	N/A
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	(see appended table 5.2)	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	--	N/A
3.1.7	Insulating materials in electrical connections	All current connections are metal to metal.	P
3.1.8	Self-tapping and spaced thread screws	No self tapping screws.	N/A
3.1.9	Termination of conductors	--	P
	10 N pull test	--	P
3.1.10	Sleeving on wiring	No sleeving is used.	N/A

3.2	Connection to a mains supply		P
3.2.1	Means of connection	Direct plug-in equipment.	P
3.2.1.1	Connection to an a.c. mains supply	--	P
3.2.1.2	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	Not permanently connected equipment.	N/A
	Number of conductors, diameter of cable and conduits (mm)	--	—
3.2.4	Appliance inlets	No appliance inlet provided.	N/A
3.2.5	Power supply cords	No power supply cord provided.	N/A
3.2.5.1	AC power supply cords	--	N/A
	Type	--	—

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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	Direct plug in equipment.	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	The unit forming part of the mains plug; therefore mains plug is considered as disconnecting device.	P
3.4.2	Disconnect devices	The unit forming part of the mains plug; therefore mains plug is considered as disconnecting device.	P
3.4.3	Permanently connected equipment	The unit is not permanently connected equipment.	N/A
3.4.4	Parts which remain energized	No part remain energized after disconnection of the unit.	N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.4.5	Switches in flexible cords	--	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	--	N/A
3.4.8	Switches as disconnect devices	--	N/A
3.4.9	Plugs as disconnect devices	Direct plug-in unit.	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	--	P
3.5.2	Types of interconnection circuits	SELV circuit or limited current circuit.	P
3.5.3	ELV circuits as interconnection circuits	--	N/A
3.5.4	Data ports for additional equipment	--	N/A

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		N/A
	Angle of 10°	Unit is for direct plug-in.	N/A
	Test force (N)	--	N/A

4.2	Mechanical strength		P
4.2.1	General	--	P
	Rack-mounted equipment.	Test on Components (see appended table 4.2.2 in Enclosure No. 2)	P
4.2.2	Steady force test, 10 N	Test on Components (see appended table 4.2.2).	P
4.2.3	Steady force test, 30 N	--	N/A
4.2.4	Steady force test, 250 N	No hazard. The test is performed at 250 N.	P
4.2.5	Impact test	--	N/A
	Fall test	--	N/A
	Swing test	--	N/A
4.2.6	Drop test; height (mm)	No damage after drop from 1 m height.	P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.2.7	Stress relief test	Test is carried out at 100°C / 7h. No risk of shrinkage or distortion of enclosures due to release of internal stresses.	P
4.2.8	Cathode ray tubes	--	N/A
	Picture tube separately certified	--	N/A
4.2.9	High pressure lamps	--	N/A
4.2.10	Wall or ceiling mounted equipment; force (N)	--	N/A
4.2.11	Rotating solid media	--	N/A
	Test to cover on the door.....	--	N/A

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)	--	N/A
4.3.3	Adjustable controls	No adjustable controls provided.	N/A
4.3.4	Securing of parts	--	N/A
4.3.5	Connection by plugs and sockets	---	N/A
4.3.6	Direct plug-in equipment	Dimension of the injection part of the European plug is in accordance with the requirement of EN 50075 standard. Other types of plugs should be evaluated during national approval.	P
	Torque	< 0,2 Nm	---
	Compliance with the relevant mains plug standard	See above.	N/A
4.3.7	Heating elements in earthed equipment	--	N/A
4.3.8	Batteries	--	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	--	N/A
4.3.10	Dust, powders, liquids and gases	The equipment does not generate dust, powder, does not contain liquid or gas. The unit is specified for office environment.	N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.11	Containers for liquids or gases	No containers for liquids or gases in the equipment.	N/A
4.3.12	Flammable liquids	--	N/A
	Quantity of liquid (l)	--	N/A
	Flash point (°C)	--	N/A
4.3.13	Radiation	--	N/A
4.3.13.1	General	--	N/A
4.3.13.2	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	--	N/A
	Part, property, retention after test, flammability classification	--	N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation	--	N/A
4.3.13.5	Laser (including LEDs)	--	N/A
4.3.13.5.1	Lasers (including laser laser diodes)	--	N/A
	Laser class	--	—
4.3.13.5.2	Light emitting diodes (LEDs)	--	—
4.3.13.6	Other types	--	N/A

-

4.4	Protection against hazardous moving parts		N/A
4.4.1	General	--	N/A
4.4.2	Protection in operator access areas	No hazardous moving parts.	N/A
	Household and home/office document/media shredders	(see Annex EE)	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

IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
	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	It has been determined from examination of the physical characteristics of the materials used that the material meets the requirements of the test.	P
4.5.2	Temperature tests	The equipment and its component parts did not attain excessive temperatures during normal operation.	P
	Normal load condition per Annex L:	Rated load.	—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
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	--	P
	Dimensions (mm):	The unit is constructed with no opening.	—
4.6.2	Bottoms of fire enclosures	No bottom openings provided.	P
	Construction of the bottom, dimensions (mm) ...:	--	—
4.6.3	Doors or covers in fire enclosures	--	N/A
4.6.4	Openings in transportable equipment	--	N/A
4.6.4.1	Constructional design measures	--	N/A
	Dimensions (mm):	--	—
4.6.4.2	Evaluation measures for larger openings	--	N/A
4.6.4.3	Use of metallized parts	--	N/A
4.6.5	Adhesives for constructional purposes	--	N/A
	Conditioning temperature (°C), time (weeks).....:	--	—

4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	--	P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests	(see appended table 5.3)	N/A
4.7.2	Conditions for a fire enclosure	The unit provide fire enclosure.	P
4.7.2.1	Parts requiring a fire enclosure	Internal parts and components.	P
4.7.2.2	Parts not requiring a fire enclosure	PVC insulated output cable.	P
4.7.3	Materials		P
4.7.3.1	General	--	P
4.7.3.2	Materials for fire enclosures	(see appended table 1.5.1)	P
4.7.3.3	Materials for components and other parts outside fire enclosures	PVC insulated output cable.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal materials are rated V-2 or better or are mounted on a PWB rated V-1 or better.	P
4.7.3.5	Materials for air filter assemblies	The equipment does not have any air filters.	N/A
4.7.3.6	Materials used in high-voltage components	No high-voltage components.	N/A
5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		P
5.1.1	General	--	P
5.1.2	Configuration of equipment under test (EUT)	--	N/A
5.1.2.1	Single connection to an a.c. mains supply	--	P
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit	According figure 5A.	P
5.1.4	Application of measuring instrument	Measuring instrument D1 was used.	P
5.1.5	Test procedure	According to the standard.	P
5.1.6	Test measurements	--	P
	Supply voltage (V)	264 Vac	—
	Measured touch current (mA)	(see appended table 5.1)	—
	Max. allowed touch current (mA)	≤ 0,25 mA	—
	Measured protective conductor current (mA)	Class II product.	—

IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
	Max. allowed protective conductor current (mA)....:	--	—
5.1.7	Equipment with touch current exceeding 3,5 mA	--	N/A
5.1.7.1	General	--	N/A
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	--	N/A
	b) EUT whose telecommunication ports have no reference to protective earth	--	N/A

5.2	Electric strength		P
5.2.1	General	(see appended table 5.2) Based on the electric strength test the use of the insulating materials within the equipment is satisfactory.	P
5.2.2	Test procedure	(see appended table 5.2) No insulation breakdown detected during the test	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	No motor is provided.	N/A
5.3.3	Transformers	See appended table abnormal testing enclosed.	P
5.3.4	Functional insulation.....	Within primary the functional insulation was verified via shorts. Abnormal on Secondary were also simulated to verify the functional insulation there also.	P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.5	Electromechanical components	The equipment does not have any electromechanical components.	N/A
5.3.6	Audio amplifiers in ITE	No such.	N/A
5.3.7	Simulation of faults	--	P
5.3.8	Unattended equipment	The unit is intended for continuous operation. There is no thermal sensor or cut-off for operational condition.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	(see appended table 5.3)	P
5.3.9.1	During the tests	No flame, melted metal, no fire- cheese cloth on top and tissue paper on bottom remain clean.	P
5.3.9.2	After the tests	The tested units passed the electric strenght test.	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		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements	(see appended table 5.2)	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	(see appended table 5.2)	N/A
6.2.2.2	Steady-state test	(see appended table 5.2)	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	--	---

IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N/A
7.1	General	--	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	(see appended table 5.2)	N/A
7.4.3	Impulse test	(see appended table 5.2)	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

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

B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N/A
B.1	General requirements	No motor incorporated.	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

IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
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 secondary	—
	Manufacturer:	See list of critical components for details.	—
	Type:	Switch mode transformer incorporated.	—
	Rated values:	240 Vac/ SELV	—
	Method of protection.....:	Primary current limitation	—
C.1	Overload test	(see appended table 5.3)	P
C.2	Insulation	(see appended table 5.2)	P
	Protection from displacement of windings.....:	Use of triple insulated wire (secondary) does not require special precaution. On primary margin tape is used for protection of displacement.	P

D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		P
D.1	Measuring instrument	--	P
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)		P
---	--	--	---

G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Clearances	--	N/A
G.1.1	General	--	N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
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	No thermal controls provided.	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

IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
L.1	Typewriters	--	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	Rated load as specified by the manufacturer	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	Ringling 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
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)		P
	a) Preferred climatic categories	Verified.	P
	b) Maximum continuous voltage	300 V	P
	c) Pulse current	Min. 3000A. Approved to IEC 61051-2. See list of critical components.	P

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

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
		See separate test report.	—

U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		P
		See separate test report.	—

V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction	--	P
V.2	TN power distribution systems	Single-phase TN power system considered and used for testing.	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)		N/A
X.1	Determination of maximum input current	--	N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
DD	ANNEX DD, Requirements for the mounting means of rack-mounted equipment		N/A
DD.1	General	The unit is not intended for rack-mounting.	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

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

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

EN 60950-1:2006 – CENELEC COMMON MODIFICATIONS			
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		P
General	Delete all the “country” notes in the reference document according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1 Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6. 2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2		P
1.1.1	Replace the text on NOTE 3 by the following: Note 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		N/A
1.2.3	Add the following definition: 1.2.3.Z1 PORTABLE SOUND SYSTEM Small battery powered audio equipment: - whose prime purpose is to listen to recorded or broadcasted sound; and - that uses headphones or earphones that can be worn in or on or around the ears; and - that allows the user to walk around NOTE Examples are mini-disk or CD players; MP3 audio players or similar equipment.		N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.3.Z1	<p>Add the following subclause:</p> <p>1.3.Z1 Exposure to excessive sound pressure</p> <p>The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones.</p> <p>NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment:</p> <p>Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.</p>		N/A
1.5.1	<p>Add the following NOTE:</p> <p>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC</p>		N/A
1.7.2.1	<p>Add the following NOTE:</p> <p>NOTE Z1 In addition, the instructions shall include, as far as applicable, a warning that excessive sound pressure from earphones and headphones can cause hearing loss</p> <p>Add the following paragraph at the end of the subclause:</p> <p>In addition, for PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.</p>		N/A
2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, 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):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;</p> <p>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;</p> <p>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.</p> <p>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.</p>		P
2.7.2	This subclause has been declared 'void'.		N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N/A



IEC/EN 60950-1															
Clause	Requirement + Test	Result - Remark	Verdict												
3.2.5.1	<p>Replace “60245 IEC 53” by “H05 RR-F”; “60227 IEC 52” by “H03 VV-F or H03 VVH2-F”; “60227 IEC 53” by “H05 VV-F or H05 VVH2-F2”.</p> <p>In Table 3B, replace the first four lines by the following:</p> <table border="1"> <tr> <td>Up to and including 6</td><td></td><td>0,75^{a)}</td><td></td></tr> <tr> <td>Over 6 up to and including 10</td><td>(0,75)^{b)}</td><td>1,0</td><td></td></tr> <tr> <td>Over 10 up to and including 16</td><td>(1,0)^{c)}</td><td>1,5</td><td></td></tr> </table> <p>In the conditions applicable to Table 3B delete the words “in some countries” in condition^{a)}.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>	Up to and including 6		0,75 ^{a)}		Over 6 up to and including 10	(0,75) ^{b)}	1,0		Over 10 up to and including 16	(1,0) ^{c)}	1,5			N/A
Up to and including 6		0,75 ^{a)}													
Over 6 up to and including 10	(0,75) ^{b)}	1,0													
Over 10 up to and including 16	(1,0) ^{c)}	1,5													
3.3.4	<p>In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:</p> <table border="1"> <tr> <td>Over 10 up to and including 16</td><td>1,5 to 2,5</td><td>1,5 to 4</td><td></td></tr> </table> <p>Delete the fifth line: conductor sizes for 13 to 16 A.</p>	Over 10 up to and including 16	1,5 to 2,5	1,5 to 4			N/A								
Over 10 up to and including 16	1,5 to 2,5	1,5 to 4													
4.3.13.6	<p>Add the following NOTE:</p> <p>NOTE Z1 Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.</p> <p>Replace the existing NOTE by the following:</p> <p>NOTE Z1 Attention is drawn to:</p> <p>1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and</p> <p>2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation)</p> <p>Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.</p>		N/A												
Annex H	<p>Replace the last paragraph of this annex by:</p> <p>At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level.</p> <p>Replace the notes as follows:</p> <p>NOTE These values appear in Directive 96/29/Euratom.</p> <p>Delete NOTE 2.</p>		N/A												
Bibliography	<p>Additional EN standards.</p> <p>IEC 60908 NOTE Harmonized as EN 60908</p>														
ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS		—												
ZB	SPECIAL NATIONAL CONDITIONS		N/A												

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In Denmark , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.		N/A
1.5.7.1	In Finland, Norway and Sweden, resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.2.		N/A
1.5.8	In Norway , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
1.5.9.4	In Finland, Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	In Finland, Norway and Sweden , 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 suojamaadoituskoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"		N/A
1.7.5	In Denmark , socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.		N/A
2.2.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.2	In Finland, Norway and Sweden there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.6.3.3	In the United Kingdom , the current rating of the circuit shall be taken as 13 A, not 16 A.		N/A
2.7.1	In the United Kingdom , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.		N/A
2.10.5.13	In Finland, Norway and Sweden , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N/A

IEC/EN 60950-1																											
Clause	Requirement + Test	Result - Remark	Verdict																								
3.2.1.1	<p>In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <table> <tr> <td>SEV 6532-2.1991</td><td>Plug Type 15</td><td>3P+N+PE</td><td>250/400 V, 10 A</td></tr> <tr> <td>SEV 6533-2.1991</td><td>Plug Type 11</td><td>L+N</td><td>250 V, 10 A</td></tr> <tr> <td>SEV 6534-2.1991</td><td>Plug Type 12</td><td>L+N+PE</td><td>250 V, 10 A</td></tr> </table> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <table> <tr> <td>SEV 5932-2.1998</td><td>Plug Type 25</td><td>3L+N+PE</td><td>230/400 V, 16 A</td></tr> <tr> <td>SEV 5933-2.1998</td><td>Plug Type 21</td><td>L+N</td><td>250 V, 16 A</td></tr> <tr> <td>SEV 5934-2.1998</td><td>Plug Type 23</td><td>L+N+PE</td><td>250 V, 16 A</td></tr> </table>	SEV 6532-2.1991	Plug Type 15	3P+N+PE	250/400 V, 10 A	SEV 6533-2.1991	Plug Type 11	L+N	250 V, 10 A	SEV 6534-2.1991	Plug Type 12	L+N+PE	250 V, 10 A	SEV 5932-2.1998	Plug Type 25	3L+N+PE	230/400 V, 16 A	SEV 5933-2.1998	Plug Type 21	L+N	250 V, 16 A	SEV 5934-2.1998	Plug Type 23	L+N+PE	250 V, 16 A		N/A
SEV 6532-2.1991	Plug Type 15	3P+N+PE	250/400 V, 10 A																								
SEV 6533-2.1991	Plug Type 11	L+N	250 V, 10 A																								
SEV 6534-2.1991	Plug Type 12	L+N+PE	250 V, 10 A																								
SEV 5932-2.1998	Plug Type 25	3L+N+PE	230/400 V, 16 A																								
SEV 5933-2.1998	Plug Type 21	L+N	250 V, 16 A																								
SEV 5934-2.1998	Plug Type 23	L+N+PE	250 V, 16 A																								
3.2.1.1	<p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>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.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>		N/A																								
3.2.1.1	<p>In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>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 UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>		N/A																								
3.2.1.1	<p>In the United Kingdom, apparatus 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 and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		N/A																								
3.2.1.1	<p>In Ireland, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.</p>		N/A																								
3.2.4	In Switzerland , for requirements see 3.2.1.1 of this annex.		N/A																								

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.5.1	In the United Kingdom , a power supply cord with conductor of 1,25 mm ² is allowed for equipment with a rated current over 10 A and up to and including 13 A.		N/A
3.3.4	In the United Kingdom , the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm ² to 1,5 mm ² nominal cross-sectional area.		N/A
4.3.6	In the United Kingdom , the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and 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. The UK plug should be evaluated during national approval.		N/A
4.3.6	In Ireland , DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997. The Ireland plug should be evaluated during national approval.		N/A
5.1.7.1	In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that ○ is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and ○ has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and ○ is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.		N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1	<p>In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - 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. <p>Alternatively for components, there is no distance through insulation requirements 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</p> <ul style="list-style-type: none"> - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. <p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b.</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclause Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - 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 EN 60950-1:2006, 6.2.2.1; - 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
6.1.2.2	<p>In Finland, Norway and Sweden, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.</p>		N/A
7.2	<p>In Finland, Norway and Sweden, for requirements see 6.1.2.1 and 6.1.2.2 of this annex.</p> <p>The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>		N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
7.3	In Norway and Sweden , there are many buildings where the screen of the coaxial cable is normally not connected to the earth in the building installation.		N/A
7.3	In Norway , for installation conditions see EN 60728-11:2005.		N/A
ZC	A-DEVIATIONS (informative)		N/A
1.5.1	Sweden (Ordinance 1990:944) Add the following: NOTE In Sweden, switches containing mercury are not permitted.		N/A
1.5.1	Switzerland (Ordinance on environmentally hazardous substances SR 814.081, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury.) Add the following: NOTE In Switzerland, switches containing mercury such as thermostats, relays and level controllers are not allowed.		N/A
1.7.2.1	Denmark (Heavy Current Regulations) Supply cords of CLASS I EQUIPMENT, which is delivered without a plug, must be provided with a visible tag with the following text: <div style="text-align: center;"> Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket  eller  </div> If essential for the safety of the equipment, the tag must in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text: “For tilslutning af de øvrige ledere, se medfølgende installationsvejledning.”		N/A
1.7.2.1	Germany (Gesetz über technische Arbeitsmittel und Verbraucherprodukte (Geräte- und Produktsicherheitsgesetz – GPSG) [Law on technical labour equipment and consumer products], of 6th January 2004, Section 2, Article 4, Clause (4), Item 2). If for the assurance of safety and health certain rules during use, amending or maintenance of a technical labour equipment or readymade consumer product are to be followed, a manual in German language has to be delivered when placing the product on the market. Of this requirement, rules for use even only by SERVICE PERSONS are not exempted.		N/A
1.7.5	Denmark (Heavy Current Regulations) With the exception of CLASS II EQUIPMENT provided with a socket outlet in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-4a, CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.		N/A
1.7.13	Switzerland (Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15 Batteries) Annex 2.15 of SR 814.81 applies for batteries.		N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	Denmark (Heavy Current Regulations, Chapter 707, clause 707.4) TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B.		N/A

IEC/EN 60950-1			
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	mark(s) of conformity ¹⁾	
External view						
Enclosure and blade holder	+Sabic Inovative (GE Plastic)	SE1X (GG)(f1)	Rated 94V-1 at min. 0,75mm thickness; 105°C Measured thickness: 2,0mm	(QMFZ2)	UL E161723	
Plug support	+Sabic Inovative (GE Plastic)	SE1X (GG)(f1)	Rated 94V-1 at min. 0,75mm thickness; 105°C Measured thickness: 2,0mm	(QMFZ2)	UL E161723	
Plug adapter (EU)	+Sabic Inovative (GE Plastic)	SE1X (GG)(f1)	Material: Rated 94V-1 at min. 0,75mm thickness; 105°C Measured thickness: 2,0mm 250Vac; 10A	(QMFZ2) EN 50075	UL E161723 Accepted	
Plug adapter (US)	+Sabic Inovative (GE Plastic)	SE1X (GG)(f1)	Material: Rated 94V-1 at min. 0,75mm thickness; 105°C Measured thickness: 2,0mm 250Vac; 10A	(QMFZ2)	UL E161723	
Plug adapter (AUS)	+Sabic Inovative (GE Plastic)	SE1X (GG)(f1)	Material: Rated 94V-1 at min. 0,75mm thickness; 105°C Measured thickness: 2,0mm 250Vac; 10A	(QMFZ2) AS/NZS 3112	UL E161723 Accepted	

IEC/EN 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Plug adapter (UK)	+Sabic Inovative (GE Plastic)	SE1X (GG)(f1)	Material: Rated 94V-1 at min. 0,75mm thickness; 105°C Measured thickness: 2,0mm 250Vac; 10A	(QMFZ2) BS1363	UL E161723 Accepted
Plug adapter (IEC 60320 plug)	+Sabic Inovative (GE Plastic)	SE1X (GG)(f1)	Material: Rated 94V-1 at min. 0,75 mm thickness; 105°C Measured thickness: 1,8mm 250Vac; 10A	(QMFZ2) IEC 60320-1	UL E161723 SIQ T211-150/08
Output cord	Various	XT or SPT-1 or SPT-2 Min. 24 AWG; VW-1; min. 105°C One end is soldered to PWB internally, the other end terminates in one of the following: (a) stripped and tinned leads (b) polarized output connector		(ZJCZ)	UL
	Various	1185 or 1181 or 2464 Min. 24 AWG; VW-1; min. 80°C; 300V One end is soldered to PWB internally, the other end terminates in one of the following: (a) stripped and tinned leads (b) polarized output connector Additionally provided with optional foil/braided shield in cord		(AVLV2)	UL
Internal view					
PCB	Various	Various	94V-0 rated OD: 56 by 36 by 1mm thick	UL 94	UL approved

IEC/EN 60950-1					
Clause	Requirement + Test			Result - Remark	Verdict
Varistor (ZNR) (Optional)	+Joyin Co Ltd.	+10S471K87	300Vac, 4kA (min. 3kA), 10 mm	IEC 60950-1:2006, Annex Q (VZCA2)	VDE UL E325508
	+Thinking	+TVR10112-V	300Vac, 4kA (min. 3kA), 10 mm	IEC 60950-1:2006, Annex Q (VZCA2)	VDE UL E314979
	+Epcos	+S10K300E2K	300Vac, 4kA (min. 3kA), 10 mm	IEC 60950-1:2006, Annex Q (VZCA2)	VDE UL E321126
Fuse FR1	+Walter Electronic Co Ltd	ICP	250 Vac; 1A T 3,6 x 10 mm	IEC 60127-3/4 (JDYX2)	VDE UL E56092
	+Littelfuse	677 001	250 Vac; 1A T 3,6 x 10 mm	IEC 60127-3/4 (JDYX2)	VDE UL E10480
	+Conquer Electronics Co Ltd	PTU	250 Vac; 1A T 3,6 x 10 mm	IEC 60127-3/4 (JDYX2)	VDE UL E82636
	+Sleetch Enterprise Inc.	37 SG	250 Vac; 1A T 3,6 x 10 mm	IEC 60127-3/4 (JDYX)	UL E330842 TÜV
Resistor FR1 (alternative)	+Tzai Yuan Enterprise Co. Ltd	KNP (NKNP)	10 Ohm, 1W	EN 60950-1	Accepted
	+Tai Electronic Co. Ltd	NKNP	10 Ohm, 1W	EN 60950-1	Accepted
	+Synton-tech Corporation	KNP	10 Ohm, 1W	EN 60950-1	Accepted
	+Greatland-ohm Enterprise Co. Ltd	NKNP	10 Ohm, 1W	EN 60950-1	Accepted
Bridge Diode BD1	Various	Various	1A; min. 600V	EN 60950-1	Accepted
Bulk Capacitor C1	Various	Various	400V; 10 μ F; 105°C	EN 60950-1	Accepted
Bulk Capacitor C2	Various	Various	400V; 4,7 μ F; 105°C	EN 60950-1	Accepted

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

Optocoupler PC1	+Sharp	PC817	Dti: >0,4 mm	(FPQU2) IEC 60950-1:2006 VDE0884	UL E64380 VDE
	+Sharp	PC123	Dti: >0,4 mm	(FPQU2) IEC 60950-1:2006 VDE0884	UL E64380 VDE
	+Isocom Ltd	4N35X	Dti: >0,4 mm	(FPQU2) IEC 60950-1:2006 VDE0884	UL E250824 VDE
	+Lite-On Technology Corp	LTV-817 LTV817M LTV817S	Dti>0,8 mm	(FPQU2) IEC 60950-1:2006 VDE0884	UL E113898 VDE
	+Fairchild Semiconductor Corp	H11A817X	Dti>1,0 mm	(FPQU2) IEC 60950-1:2006 VDE0884	UL E90700 VDE
	+Cosmo Electronics Corp	K1010	Dti>0,5 mm	(FPQU2) IEC 60950-1:2006 VDE0884	UL E169586 VDE
	+Everlight Electronics Co Ltd.	EL817	Dti>0,4 mm	(FPQU2) IEC 60950-1:2006 VDE0884	UL E214129 VDE
	+PANASONIC CORPORATION	ON3171	Dti>0,4 mm	(FPQU2) IEC 60950-1:2006 VDE0884	UL E79920 VDE
	+NEC	PS2561	Dti>0,4 mm	(FPQU2) IEC 60950-1:2006 VDE0884	E72422 VDE
	+Vishay Infrared Components	TCET1108, TCET1103, TCET1109	Dti>0,7 mm	(FPQU2) IEC 60950-1:2006 VDE0884	UL E52744 VDE
	+Toshiba Corp	TLP721	Dti>0,8 mm	(FPQU2) IEC 60950-1:2006 VDE0884	UL E67349 VDE

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

ridging Cap CY1 (pri-sec)	+TDK	CD	2200pF; 250V; 85°C, Y1	(FOWX2) IEC 60384	UL E37861 VDE
	+Murata	KX	2200pF; 250V; 85°C, Y1	(FOWX2) IEC 60384	UL E37921 VDE
	+Welson	WD	2200pF; 250V; 85°C, Y1	(FOWX2) IEC 60384	UL E104572 VDE
	+Panasonic Corporation	NS-A	2200pF; 250V; 85°C, Y1	(FOWX2) IEC 60384	UL E62674 VDE
	+Chyun Fuh	CD	2200pF; 250V; 85°C, Y1	(FOWX2) IEC 60384	UL E202835 VDE
	+Jyh Chung	JD	2200pF; 250V; 85°C, Y1	(FOWX2) IEC 60384	UL E187963 VDE
	+Jya-nay	JN	2200pF; 250V; 85°C, Y1	(FOWX2) IEC 60384	UL E201384 VDE
	+Success	SE, SB	2200pF; 250V; 85°C, Y1	(FOWX2) IEC 60384	UL E114280 VDE

IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
Transformer T1	<p>(+Young-Shang or Guang Xie or Taiwan Volt) (XF00247, XF00248, XF00249, XF00250, XF00251) Models are only different according to output voltage (different number of winding turns); insulation is done in the same way. Open type construction OD: 17 by 15 by 19,5 mm Rating: 240 V / 24 V; 1 kHz Core: EE16, ferrite Coil: primary: copper magnet wire wound on bobbin; secondary: UR (OBS2) triple insulated wire by Totoku, Type TIW-2 or by Furukawa type TEX-E or by Great Leoflon TRW (B) approved by UL for reinforced insulation according Annex U. Bobbin: Phenolic T375J; (+Chang Chun Plastics) 94V-0 rated at min. 0,45mm thickness; measured thickness: 1,0 mm; 150°C; (QMFZ2) UL E5948 Insulation: Location / # Layers / Thickness mm / Material Pri/Sec 2 0,1 mm Polyester Pri/Pri 1 0,1 mm Polyester Outerwrap 3 0,1 mm Polyester The insulation primary to secondary is achieved by triple insulated wire; secondary windings are TIW. All outlets are tubed. Insulation system YS-130-1 (OBJY2); E215086; Class B.</p>	Accepted	Accepted
Insulation foil (between PCB and enclosure)	Min. V-2 or VTM-2 rated or better; min. 105°C	Accepted	Accepted
<p>1) an asterisk indicates a mark which assures the agreed level of surveillance</p> <p>2) + means, that components from other vendor and other model number, but with the same rating and equivalent approvals are accepted.</p>			

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

1.5.1	TABLE: Opto Electronic Devices	P
<p>Manufacturer : Sharp Corp. Electronic Components and Devices Group</p> <p>Type..... : PC817</p> <p>Separately tested : YES</p> <p>Bridging insulation..... : Reinforced Insulation</p> <p>External creepage distance..... : 7,6 mm</p> <p>Internal creepage distance..... : There is not internal creepage distance. Thermal cycling test.</p> <p>Distance through insulation..... : >0,4 mm</p> <p>Tested under the following conditions..... : /</p> <p>Input..... : /</p> <p>Output..... : /</p>		
<p>Manufacturer : Sharp Corp. Electronic Components and Devices Group</p> <p>Type..... : PC123</p> <p>Separately tested : YES</p> <p>Bridging insulation..... : Reinforced Insulation</p> <p>External creepage distance..... : 7,6 mm</p> <p>Internal creepage distance..... : There is not internal creepage distance. Thermal cycling test.</p> <p>Distance through insulation..... : >0,4 mm</p> <p>Tested under the following conditions..... : /</p> <p>Input..... : /</p> <p>Output..... : /</p>		
<p>Manufacturer : Isocom Ltd.</p> <p>Type..... : 4N35X</p> <p>Separately tested : YES</p> <p>Bridging insulation..... : Reinforced Insulation</p> <p>External creepage distance..... : 7,6 mm</p> <p>Internal creepage distance..... : There is not internal creepage distance. Thermal cycling test.</p> <p>Distance through insulation..... : >0,4 mm</p> <p>Tested under the following conditions..... : /</p> <p>Input..... : /</p> <p>Output..... : /</p>		

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

Manufacturer	Lite-On Technology Corp		
Type	LTV-817, LTV817M, LTV817S		
Separately tested	YES		
Bridging insulation	Reinforced Insulation		
External creepage distance	7,8 mm		
Internal creepage distance	There is not internal creepage distance. Thermal cycling test.		
Distance through insulation	0,8 mm		
Tested under the following conditions	/		
Input	/		
Output	/		
Manufacturer	Fairchild Semiconductor Corp		
Type	H11A817X		
Separately tested	YES		
Bridging insulation	Reinforced Insulation		
External creepage distance	6,9 mm		
Internal creepage distance	There is not internal creepage distance. Thermal cycling test.		
Distance through insulation	>1 mm		
Tested under the following conditions	/		
Input	/		
Output	/		
Manufacturer	Cosmo Electronics Corp		
Type	K1010		
Separately tested	YES		
Bridging insulation	Reinforced Insulation		
External creepage distance	8,0 mm		
Internal creepage distance	There is not internal creepage distance. Thermal cycling test.		
Distance through insulation	0,5 mm		
Tested under the following conditions	/		
Input	/		
Output	/		
Manufacturer	Everlight Electronics Co Ltd.		
Type	EL817		
Separately tested	YES		
Bridging insulation	Reinforced Insulation		
External creepage distance	7,6 mm		
Internal creepage distance	There is not internal creepage distance. Thermal cycling test.		
Distance through insulation	0,4 mm		

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
Tested under the following conditions..... : /			
Input..... : /			
Output..... : /			

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

Manufacturer	PANASONIC CORPORATION		
Type	ON3171		
Separately tested	YES		
Bridging insulation	Reinforced Insulation		
External creepage distance	7,6 mm		
Internal creepage distance	There is not internal creepage distance. Thermal cycling test.		
Distance through insulation	>0,4 mm		
Tested under the following conditions	/		
Input	/		
Output	/		
Manufacturer	NEC		
Type	PS2561		
Separately tested	YES		
Bridging insulation	Reinforced Insulation		
External creepage distance	>7,0 mm		
Internal creepage distance	There is not internal creepage distance. Thermal cycling test.		
Distance through insulation	>0,4 mm		
Tested under the following conditions	/		
Input	/		
Output	/		
Manufacturer	Vishay Infrared Components		
Type	TCET1108, TCET1103, TCET1109		
Separately tested	YES		
Bridging insulation	Reinforced Insulation		
External creepage distance	8,1 mm		
Internal creepage distance	There is not internal creepage distance. Thermal cycling test.		
Distance through insulation	0,7 mm		
Tested under the following conditions	/		
Input	/		
Output	/		

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

Manufacturer	Toshiba Corp
Type.....	TLP721
Separately tested	YES
Bridging insulation.....	Reinforced Insulation
External creepage distance.....	8,0 mm
Internal creepage distance.....	There is not internal creepage distance. Thermal cycling test.
Distance through insulation.....	0,8 mm
Tested under the following conditions.....	/
Input.....	/
Output.....	/
supplementary information: /	

IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

1.6.2	TABLE: electrical data (in normal conditions) - Model GT-41076-0603-C.C					P
fuse #	I _{rated} (A)	U (V)	P (W)	I (mA)	I _{fuse} (A) Rated	condition/status
50Hz						
FR1	—	90	9,1	162	1,0	Conditions: 3V / 6W
FR1	0,3	100	9,0	146	1,0	Conditions: 3V / 6W
FR1	0,3	240	9,1	77	1,0	Conditions: 3V / 6W
FR1	—	254	9,0	74	1,0	Conditions: 3V / 6W
FR1	—	264	9,1	72	1,0	Conditions: 3V / 6W
60Hz						
FR1	—	90	9,0	163	1,0	Conditions: 3V / 6W
FR1	0,3	100	9,0	149	1,0	Conditions: 3V / 6W
FR1	0,3	240	8,9	78	1,0	Conditions: 3V / 6W
FR1	—	254	9,0	74	1,0	Conditions: 3V / 6W
FR1	—	264	8,9	73	1,0	Conditions: 3V / 6W
Comment: The steady-state input current did not exceed the rated current at the rated voltage by more than 10% under the maximum normal load.						

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

1.6.2	TABLE: electrical data (in normal conditions) - GT-41076-0624-C.C						P
fuse #	I _{rated} (A)	U (V)	P (W)	I (mA)	I _{fuse} (A) Rated	condition/status	
50Hz							
FR1	—	90	7,3	131	1,0	Conditions: 24V / 6W	
FR1	0,3	100	7,2	122	1,0	Conditions: 24V / 6W	
FR1	0,3	240	6,5	66	1,0	Conditions: 24V / 6W	
FR1	—	254	6,4	63	1,0	Conditions: 24V / 6W	
FR1	—	264	6,3	61	1,0	Conditions: 24V / 6W	
60Hz							
FR1	—	90	7,2	132	1,0	Conditions: 24V / 6W	
FR1	0,3	100	7,1	123	1,0	Conditions: 24V / 6W	
FR1	0,3	240	6,4	66	1,0	Conditions: 24V / 6W	
FR1	—	254	6,4	63	1,0	Conditions: 24V / 6W	
FR1	—	264	6,3	61	1,0	Conditions: 24V / 6W	
Comment: The steady-state input current did not exceed the rated current at the rated voltage by more than 10% under the maximum normal load.							

2.1.1.5 c) 1)	TABLE: max. V, A, VA test				P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
supplementary information: Output does not present energy hazard. See table 2.5					

IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

2.1.1.7	TABLE: Discharge of capacitors in the primary circuit				P
<i>The unit was connected to 264 V a.c. , 50 Hz. A storage oscilloscope was connected across the external point of disconnection of the mains supply. With all switches in the unit initially set to the off position, the unit was disconnected from the supply source. The voltage at the time of disconnection, Vo, and the voltage Vtc at 1 second was recorded.</i>					
Model	Location	Time Constant	Measured voltage after 1 sec.	Condition	
L to N	In	< 10ms	0 Vdc	No load	
Comments:					
The voltage across the line capacitor did decay to less than 37 percent of it's original value in 1 second.					
The test was performed on the model GT-41076-0624-C.C. All models have the same input circuit.					

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.	
GT-41076-0603-C.C				
Transformer T1, Pin 6 to Pin 10	18 Vpk	—	—	
GT-41076-0624-C.C				
Transformer T1, Pin 6 to Pin 10	123 Vpk	—	D3A/D3B	
Transformer T1, Pin 6 to D3A/D3B	—	23,7 Vdc	—	
Supplementary information:				
The unit was connected to 240 V ac , and 50 Hz. The output was loaded to the rated value. The voltage at each secondary winding was recorded. If the voltage exceeded 42.4 Vpk or 60 V dc, the measurement were taken again after the next component in series with the secondary until the voltage measured was less 42.4 Vpk or 60 Vdc.				
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)		
supplementary information:				
See table 5.3.				

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

2.4	TABLE: Limited current circuit	P
<i>The unit was connected to 264 Vac, 50 Hz. A 2000 Ohms non-inductive resistor and a switch were connected between the user accessible part of a limited current circuit and either pole of the limited current circuit or earth. A storage oscilloscope was connected across the points under consideration. The switch was closed and voltages on resistor were measured.</i>		
Limit values	0,7 mA	
Circuit(s) tested	CY1	
Measured working voltage:	< 450 V	
Measured frequency	60 Hz	
Measured current through 2000 Ohms	0,34 mA	
Measured capacitance	2200 pF	
Comment:		
The dielectric test was performed on the unit (see table dielectric testing) before the above measurements were done.		

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

2.5	TABLE: limited power sources				P
Circuit output tested:					
Measured Uoc (V) with all load circuits disconnected:					
Location of measurement	Condition	Voltage	Test Current in A	Calculated power	
GT-41076-0603-C.C					
/	Nominal load	3,0	2A	6,0	
/	Maximum Load	4,10	3,4	11,6	
/	Short PC1 pin 1-2	0	0	0	
/	Short PC1 pin 3-4	0	0	0	
/	Short U1 pin 8-2	—	—	— ¹⁾	
/	Short D2	0	0	0	
/	Short U1 pin 1-3	10,4	0,06	0,5	
GT-41076-0624-C.C					
/	Nominal load	24	0,25	6,0	
/	Maximum Load	24,0	0,66	14,3	
/	Short PC1 pin 1-2	0	0	0	
/	Short PC1 pin 3-4	0	0	0	
/	Short U1 pin 8-2	—	—	— ¹⁾	
/	Short D2	0	0	0	
/	Short U1 pin 1-3	0	0	0	
Supplementary information:					
Sc=Short circuit, Oc=Open circuit					
1) FR1 open, U1 damaged, output shutdown.					

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

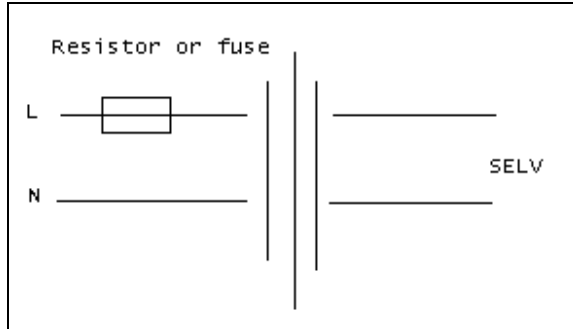
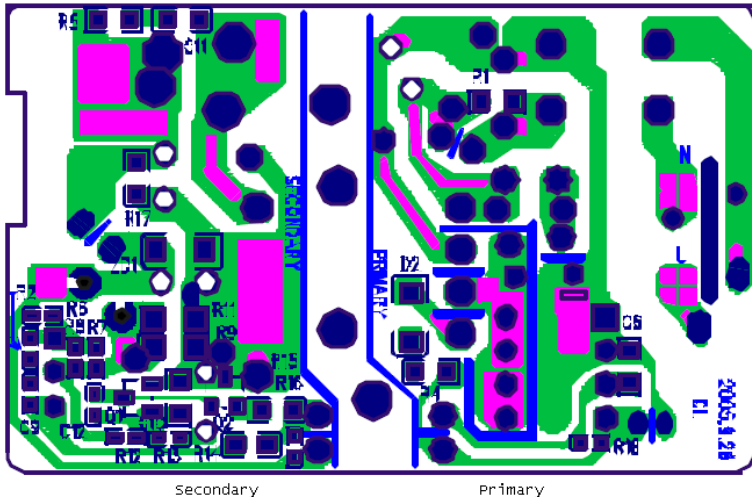
2.9.1, 2.9.2, 5.2.2	TABLE: Humidity test Model: GT-41076-0624	P
<p>A humidity chamber was maintained within 1°C of temperature “t” at a temperature of 25°C. The unit and any other separate components were brought to a temperature between t and t + 4°C They were then placed in the chamber and held at a relative humidity of 93% for a period of 48 hours. Prior to conditioning, parts of the unit (covers) which could be removed without the use of tools were removed and separately placed in the chamber. During conditioning, cable entrances and/or a conduit openings were left open. During this treatment, the unit was not energized.</p> <p>While still in the humidity chamber, but after all parts have been placed back on the unit, a dielectric potential was applied and maintained for a period of one minute between the points indicated below. During this test, all switching devices (switches, relays, triacs, etc.) in the primary circuit were closed.</p>		
Location	Insulation type	Potential used
Primary to Secondary	Reinforced	3.000 Vac
Primary to Enclosure	Reinforced	3.000 Vac
Comment: There was no breakdown.		

IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

2.10.2	Table: working voltage measurement			P
Location		RMS voltage (V)	Peak voltage (V)	Comments
Model: GT-41076-0603-C.C (Transformer T1)				
Pin 1 to Pin 6		192	328	
Pin 1 to Pin 10		194	337	
Pin 2 to pin 6		218	354	
Pin 2 to Pin 10		219	359	
Pin 3 to pin 6		257	497	Max. peak and RMS voltage
Pin 3 to pin 10		250	486	
Pin 4 to Pin 6		224	427	
Pin 4 to Pin 10		215	408	
Model: GT-41076-0603-C.C (Optocoupler PC1)				
Pin 1 to Pin 3		209	341	
Pin 1 to Pin 4		213	354	
Pin 2 to Pin 3		196	317	
Pin 2 to Pin 4		196	319	
Model: GT-41076-0624-C.C (Transformer T1)				
Pin 1 to Pin 6		222	369	
Pin 1 to Pin10		204	483	
Pin 2 to Pin 6		194	334	
Pin 2 to Pin 10		203	356	
Pin 3 to Pin 6		268	506	Max. peak and RMS voltage
Pin 3 to Pin 10		247	461	
Pin 4 to Pin 6		204	410	
Pin 4 to Pin 10		201	343	
Model: Model: GT-41076-0624-C.C (Optocoupler PC1)				
Pin 1 to Pin 3		216	361	
Pin 1 to Pin 4		212	342	
Pin 2 to Pin 3		213	355	
Pin 2 to Pin 4		205	338	
supplementary information:				
Input voltage: Test Condition was : 240 Va.c.; 50 Hz				
Minus of the output, Neutral and PE were connected to simulate a TN mains.				

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

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P
clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
Primary to Primary before fuse (functional)	340	240	1,5	2,5	2,4	2,5
Primary to Primary after fuse (functional)	340	240	Method C was used.			
Primary to Secondary (Reinforced) transformer	506	268	4,8	*	5,6	*
Primary to Secondary on PCB	506	268	4,8	5,7	5,6	5,7
Comment: * TIW on secondary is used						
Block diagram <div style="text-align: center; margin-top: 20px;">  </div>						
Layout <div style="text-align: center; margin-top: 20px;">  </div>						

IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

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)
Insulation foil between PCB and enclosure	506	3.000 Vac	0,4	Min. 0,4
Comment: Approved optocouplers are used. See list of critical components.				

2.10.3, 4.2.2, 4.2.3, 4.2.4	TABLE: Steady force test (internal spacings push test)			P
<p>Components and parts, other than parts serving as an enclosure, are subjected to a steady force of 10 N ± 1 N.</p> <p>Parts of an enclosure located in Operator Access Area, which are protected by a cover or door, are subjected to a steady force of 30 N ± 3 N for a period of 5 s, applied by means of a straight unjointed version of the test finger, to the part on or within the equipment.</p> <p>External enclosures are subjected to a steady force of 250 N ± 10 N for a period of 5 s, applied in turn to the top, bottom and sides of the enclosure fitted to the equipment, by means of a suitable test tool providing contact over a circular plane surface 30 mm in diameter. However, this test is not applied to the bottom of an enclosure of equipment having a mass of more than 18 kg.</p>				
Part	Thickness	Force	Observation	
Components	—	10 N	Passed, U1, C2, C7, C8 are glued to avoid bending	
Top / Bottom of enclosure	2 mm	250 N	No deflection of the material	
Left / Right Side of Enclosure	2 mm	250 N	No deflection of the material	
Comments:				

4.2.5	TABLE: Impact Test		N/A
A sample consisting of the complete enclosure represented the largest area was supported in its normal position. A solid smooth steel ball, approximately 50 mm in diameter and with a mass of 500 g was permitted to fall freely from the rest through a vertical distance of 1,3 m onto the sample.			
A dielectric test from primary to earth and primary to secondary was conducted after the test.			
Part	Thickness	Observation	
Dielectric test after the steel ball test:			
Location	Insulation type	Potential used	

IEC/EN 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:										

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

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

MARKINGS AND INSTRUCTIONS (1.7.12, 1.7.15)	
Location of replaceable battery	
Language(s):	
Close to the battery:	
In the servicing instructions:	
In the operating instructions:	

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

4.5	TABLE: Thermal requirements - Model GT-41076-0603-C.C (horizontal)						P
	test voltage (V)	90	264				—
	Frequency (Hz)	50	50				—
	t _{amb1} (°C)	25,1	25,3				—
	t _{amb2} (°C)	30,0	30,0				—
Maximum measured temperature T of part/at::		T (°C)					Allowed T _{max} (°C)
1.	Transformer T1 coil	102,5	92,0				110
2.	Transformer T1 core	100,9	90,1				110
3.	Inductor L1	94,1	76,1				105
4.	Inductor L2	84,3	80,8				105
5.	Capacitor C1	76,5	64,1				85
6.	PCB (near BD1)	91,4	75,0				105
7.	PCB (near D3B)	91,1	86,9				105
8.	Internal enclosure near T1	72,4	66,0				105
9.	Outer enclosure	63,1	57,2				95
<p>Supplementary information:</p> <p>The above temperatures are measured at t_{amb1}. The values measured are subtracted with t_{amb1} and t_{amb2} (°C) added. Therefore above measured temperatures are the absolute temperatures in °C at maximum ambient 30°C.</p>							

IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

4.5	TABLE: Thermal requirements - Model GT-41076-0603-C.C (vertical)						P
	test voltage (V)	90	264				—
	Frequency (Hz)	50	50				—
	t _{amb1} (°C)	24,2	24,0				—
	t _{amb2} (°C)	30,0	30,0				—
Maximum measured temperature T of part/at::		T (°C)					Allowed T _{max} (°C)
1.	Transformer T1 coil	102,4	92,1				110
2.	Transformer T1 core	99,9	90,3				110
3.	Inductor L1	93,6	76,3				105
4.	Inductor L2	88,1	83,0				105
5.	Capacitor C1	76,4	63,2				85
6.	PCB (near BD1)	89,7	75,3				105
7.	PCB (near D3B)	97,8	90,4				105
8.	Internal enclosure near T1	73,2	65,4				105
9.	Outer enclosure	62,0	57,0				95

Supplementary information:

The above temperatures are measured at t_{amb1}. The values measured are subtracted with t_{amb1} and t_{amb2} (°C) added. Therefore above measured temperatures are the absolute temperatures in °C at maximum ambient 30°C.

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

4.5	TABLE: Thermal requirements - GT-41076-0624-C.C (horizontal)						P
	test voltage (V) :	90	264				—
	Frequency (Hz)	50	50				—
	t _{amb1} (°C) :	23,2	23,8				—
	t _{amb2} (°C) :	30,0	30,0				—
Maximum measured temperature T of part/at::		T (°C)					Allowed T _{max} (°C)
1.	Transformer T1 coil	82,2	78,5				110
2.	Transformer T1 core	82,1	78,9				110
3.	Inductor L1	73,9	64,8				105
4.	Inductor L2	57,4	58,1				105
5.	Capacitor C1	60,8	55,8				85
6.	PCB (near BD1)	76,0	67,6				105
7.	PCB (near D3B)	72,3	64,6				105
8.	Internal enclosure near T1	62,3	61,4				105
9.	Outer enclosure	55,9	55,9				95
Supplementary information:							
The above temperatures are measured at t _{amb1} . The values measured are subtracted with t _{amb1} and t _{amb2} (°C) added. Therefore above measured temperatures are the absolute temperatures in °C at maximum ambient 30°C.							

IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

4.5	TABLE: Thermal requirements - GT-41076-0624-C.C (vertical)						P
	test voltage (V)	90	264				—
	Frequency (Hz)	50	50				—
	t _{amb1} (°C)	22,9	23,2				—
	t _{amb2} (°C)	30,0	30,0				—
Maximum measured temperature T of part/at::		T (°C)				Allowed T _{max} (°C)	
1.	Transformer T1 coil	85,0	74,2				105
2.	Transformer T1 core	83,8	74,0				105
3.	Inductor L1	75,9	59,9				105
4.	Inductor L2	60,6	56,1				105
5.	Capacitor C1	61,9	50,8				85
6.	PCB (near BD1)	77,1	62,3				110
7.	PCB (near D3B)	72,2	58,3				110
8.	Internal enclosure near T1	64,7	57,2				105
9.	Outer enclosure	56,4	52,0				95
Supplementary information: The above temperatures are measured at t _{amb1} . The values measured are subtracted with t _{amb1} and t _{amb2} (°C) added. Therefore above measured temperatures are the absolute temperatures in °C at maximum ambient 30°C.							

4.5.5	TABLE: Ball pressure test of thermoplastic parts			P
	Allowed impression diameter (mm)	≤ 2 mm		—
Part		Test temperature (°C)	Impression diameter (mm)	
Plug holder / enclosure		125	1,5	
Transformer Bobbin		125	0,8	
Supplementary information:				

4.7	TABLE: Resistance to fire					P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
Supplementary information: See list of critical components 1.5.1.						

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

5.1	TABLE: touch current measurement			P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
N to Enclosure	0,006	0,25	--	
L to Enclosure	0,006	0,25	--	
L to Output	0,19	0,25	--	
N to Output	0,17	0,25	--	
supplementary information:				
The tests were performed at 264 Vac and 60 Hz with D1 measurement circuit. The test was performed with the unit connected to line and neutral.				

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Reinforced:				
Primary to Secondary (Reinforced)		AC	3.000	No
Primary to enclosure		AC	3.000	No
One layer of insulation tape – outerwrap for T1 (two layers provided)		AC	3.000	No
Mylar sheet between enclosure and PCB		AC	3.000	No
Supplementary information:				
There was no breakdown.				

IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)				23°C ± 3°C	—
	Power source for EUT: Manufacturer, model/type, output rating				Variable transformer	—
Com- ponent No.	Fault	Supply vol- tage (V)	Test time	Fuse #	Fuse cur- rent (A)	Observation
SELV reliability Testing						
Output Diode D3A/D3B	Short	264Vac	>10min	FR1	0,015	Unit switched off. No hazard, no fire.
Regulation PC1 (1) (GT-41076-0603-C.C)	Open	264Vac	2h	FR1	0,11	Normal operation, output voltage rise to 6 Vdc max. Temperature of T1 winding was 157,2°C at 24,6°C ambient.
Regulation PC1 (4) (GT-41076-0603-C.C)	Open	264Vac	>2h	FR1	0,13	Normal operation, output voltage rise to 6 Vdc max. Temperature of T1 winding was 136,2°C at 25,2°C ambient.
Regulation PC1 (1) (GT-41076-0624-C.C)	Open	264Vac	>2h	FR1	0,11	Normal operation, output voltage rise to 43 Vdc max. Temperature of T1 winding was 142,3°C at 25,3°C ambient.
Regulation PC1 (4) (GT-41076-0624-C.C)	Open	264Vac	>2h	FR1	0,13	Normal operation, output voltage rise to 42 Vdc max. Temperature of T1 winding was 129,2°C at 25,5°C ambient.
U1 pin 1-3	Short	264Vac	>10min	FR1	0,02	Unit switched off. No hazard, no fire.
U1 pin 3-4	Short	264Vac	>10min	FR1	0,02	Unit switched off. No hazard, no fire.
Method C – functional insulation (clause 5.3.4)						
BD 1 AC to +	Short	264Vac	>10min	FR1	—	FR1 opened immediately. No hazard, no fire.

IEC/EN 60950-1						
Clause	Requirement + Test			Result - Remark		Verdict
U1 pin 8-2	Short	264Vac	>10min	FR1	—	FR1 opened immediately, no hazard, no fire.
U1 pin 4-8	Short	264Vac	>10min	FR1	—	FR1 opened immediately. No hazard, no fire.
C1	Short	264Vac	>10min	FR1	—	FR1 opened immediately. No hazard, no fire.
Additional Component faults						
T1 pin 2-4	Short	264Vac	>10min	FR1	0,016	Unit switched off, no hazard, no fire.
D2	Short	264Vac	>10min	FR1	0,03	Unit switched off, no hazard, no fire.
PC1 pin 1-2	Short	264Vac	>10min	FR1	0,03	Unit switched off immediately. ZD1 defect, no hazard, no fire.
PC1 pin 3-4	Short	264Vac	>10min	FR1	0,007	Unit switched off immediately. No hazard, no fire.
Annex C Transformer overload / short (clause 5.3.3)						
T1 pin 6-10	Short	264Vac	>10min	FR1	0,016	Unit switched off, no hazard, no fire.
T1 pin 6-10 (on 24Vdc model)	Overload	264Vac	1h 20min	FR1	0,075	Conditions: 23,97 Vdc; 0,64 A. Temperature of transformer winding was 107,6°C at 25,1°C.
Misuse						
Output	Short	264Vac	>10min	FR1	—	Unit switched off. No hazard, no fire.
Output	Overload	264Vac	1h 30min	FR1	0,075	Conditions: 23,97 Vdc; 0,64A. Temperature of transformer winding was 101,3°C at 25,2°C.
<p>Supplementary information:</p> <p>There was no flame, extensive smoke or melted metal.</p> <p>When FR1 opened, the test was repeated with each alternative component with same result.</p>						

IEC/EN 60950-1

Clause	Requirement + Test	Result - Remark	Verdict
--------	--------------------	-----------------	---------

C.2	TABLE: transformers						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)
T1	Reinforced	506	268	3000 Vac	4,8	5,6	*
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T1	Primary to secondary (reinforced) on T1			3000 Vac	8,3	8,3	--
supplementary information:							
* TIW							

C.2	TABLE: transformers	P
See Enclosure No. 3 Schematics, layouts and transformer drawings.		

Enclosure No. 1

National differences to IEC60950-1:2005

IEC 60950-1:2005			
Clause	Difference – Test	Result – Remark	Verdict
KOREA- Differences to IEC 60950-1, Second Edition (2005)			
1.5.101	Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305).	Built-in product.	N/A
8: EMC	The apparatus shall comply with the relevant CISPR standards	End product consideration.	N/A

IEC 60950-1:2005			
Clause	Difference – Test	Result – Remark	Verdict
USA - Differences to IEC 60950-1:2005, Second Edition			
1.1	Equipment able to be installed in accordance with the National Electrical Code ANSI/NFPA 70	--	P
1.1.1	Equipment able to be installed in accordance with ANSI/NFPA 75 and NEC Art. 645 unless intended for use outside of computer room and provided with such instructions.	--	P
1.1.2	Equipment in wire-line communication facilities serving high-voltage electric power stations operating at greater than 1kV are excluded.	--	N/A
1.1.2	Equipment intended for outdoor use	Indoor use equipment.	N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20 A.	--	P
1.5.1	All IEC standards for components identified in Annex P.1 replaced by the relevant requirements of UL component standards in Annex P.1.	--	P
1.5.1	All IEC standards for components identified in Annex P.2 alternatively satisfied by the relevant requirements of UL component standards	--	P
1.5.5	Interconnecting cables acceptable for the application regarding voltage, current, temperature, flammability, mechanical serviceability and the like.	--	N/A
1.5.5	For other than limited power and TNV circuits, the type of output circuit identified for output connector.	--	N/A
1.5.5	External cable assemblies that exceed 3.05 m in length to be types specified in the NEC	--	N/A
1.5.5	Detachable external interconnecting cables 3.05 m or less in length and provided with equipment marked to identify the responsible organization and the designation for the cable	--	N/A

IEC 60950-1:2005			
Clause	Difference – Test	Result – Remark	Verdict
1.5.5	Building wiring and cable for use in ducts, plenums and other air handling space subject to special requirements and excluded from scope.	--	N/A
1.5.5	Telephone line and extension cords and the like comply with UL 1863	--	N/A
1.6.1.2	Equipment intended for connection to a d.c. power (mains) distribution system subjected to special circuit classification requirements (e.g., TNV-2)	--	N/A
1.6.1.2	Earthing of d.c. powered equipment provided	AC powered equipment.	N/A
1.7	Lamp replacement information indicated on lampholder in operator access area	--	N/A
1.7.1	Special marking format for equipment intended for use on a supply system with an earthed neutral and more than one phase conductor	Single phase unit.	N/A
1.7.1	Equipment voltage rating not higher than rating of the plug except under special conditions	--	P
1.7.6	Fuse replacement marking for operator accessible fuses	No operator accessible fuses provided.	N/A
1.7.7	Identification of terminal connection of the equipment earthing conductor	--	N/A
1.7.7	Connectors and field wiring terminals for external Class 2 or Class 3 circuits provided with marking indicating minimum Class of wiring to be used.	--	N/A
1.7.7	Marking located adjacent to terminals and visible during wiring	--	N/A
2.1.1.1	Bare TNV conductive parts protected by a cover are exempt if instructions include directions for disconnection of TNV prior to removal of the cover	--	N/A
2.3.1.b	Other telecommunication signaling systems than described in 2.3.1(b) are subject to M.4.	--	N/A
2.3.1.b	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vp or 60 V d.c., the max. current limit through a resistor ≥ 2000 Ohm with loads disconnected is 7.1 mA peak or 30 mA d.c. under normal conditions	--	N/A
2.3.1.b	Limits for measurements across 5000 Ohm resistor in the event of a single fault are replaced after 200 ms with the limits of M.3.1.4.	--	N/A
2.3.2.1	For a single fault, the limits of 2.2.3 apply to SELV circuits and accessible conductive parts.	--	N/A

IEC 60950-1:2005

Clause	Difference – Test	Result – Remark	Verdict
2.3.2.4	Enamel coating on signal transformer winding wire allowed as an alternative to Basic insulation in specific telecommunication applications if subject to special construction requirements and testing	--	N/A
2.5	Overcurrent protection device required for Class 2 and Class 3 limiting according to the NEC, or for a Limited Power Source, not interchangeable with devices of higher ratings if operator replaceable	Over-current protection device incorporated within the equipment.	N/A
2.6	Equipment having receptacles for output a.c. power connectors generated from an internal separately derived source have the earthed (grounded) circuit conductor suitably bonded to earth.	--	N/A
2.6.3.3	For Pluggable Equipment Type A, if a) b) or c) are not applicable, the current rating of the circuit is taken as 20 A	--	N/A
2.6.3.4	Capacity of connection between earthing terminal and parts required to be earthed subject to special conditions based on the current rating of the circuit.	--	N/A
2.6.4.1	Field wiring terminals for earthing conductors suitable for wire sizes (gauge) used in US	--	N/A
2.7.1	Data for selection of special external branch circuit overcurrent devices marked on the equipment	--	N/A
2.7.1	Standard supply outlets protected by overcurrent device in accordance with the NEC	--	N/A
2.7.1	Overcurrent protection for individual transformers that distribute power to other units over branch circuit wiring	--	N/A
2.7.1	Additional requirements for overcurrent protection apply to equipment provided with panel boards	--	N/A
2.7.1	Non-motor-operated equipment requiring special overcurrent protective device marked with device rating.	--	N/A
2.10.5.12	Multi-layer winding wire subject to UL component wire requirements in addition to 2.10.5.12 and Annex U.	IEC / UL approved triple insulated wire is used. See list of critical components.	P
3.1.1	Permissible combinations of internal wiring/external cable sizes for overcurrent & short circuit protection		N/A
3.1.1	All interconnecting cables protected against overcurrent and short circuit.	No interconnecting cables.	N/A

IEC 60950-1:2005			
Clause	Difference – Test	Result – Remark	Verdict
3.2	Wiring methods permit connection of equipment to primary power supply in accordance with the NEC	EUT is direct plug-in adaptor provided with UL plug.	P
3.2.1	Permitted use for flexible cords and plugs.	--	N/A
3.2.1	Flexible cords provided with attachment plug rated 125% of equipment current rating.	--	N/A
3.2.1	Any Class II equipment provided with 15 or 20 A standard supply outlets, Edison-base lampholders or single pole disconnect device provided with a polarized type attachment plug.	No standard supply outlet.	N/A
3.2.1.2	Equipment intended for connection to DC mains supply power systems complies with special wiring requirements	The unit is not intended for direct connection to d.c. mains.	N/A
3.2.1.2	Equipment with one pole of the DC mains supply connected to both the equipment mains input terminal and the main protective earthing terminal provided with special instructions and construction provisions for earthing	--	N/A
3.2.1.2	Equipment with means for connecting supply to earthing electrode conductor has no switches or protective devices between supply connection and earthing electrode connection.	--	N/A
3.2.1.2	Markings and instructions for equipment with provisions to connect earthed conductor of a DC supply circuit to the equipment earthing conductor	The unit is not intended for direct connection to d.c. mains supply.	N/A
3.2.1.2	Special markings and instructions for equipment with earthed conductor of a DC supply circuit connected to the equipment earthing conductor	--	N/A
3.2.1.2	Terminals and leads provided for permanent connection of DC powered equipment to supply marked to indicate polarity if reverse polarity may result in a hazard.	--	N/A
3.2.3	Permanently connected equipment has provision for connecting and securing a field wiring system (i.e. conduit, or leads etc.) per the NEC	EUT is not permanently connected equipment.	N/A
3.2.3	Permanently connected equipment may have terminals or leads not smaller than No. 18 AWG (0.82 mm ²) and not less than 150 mm in length for connection of field installed wiring.	--	N/A
3.2.3	If supply wires exceed 60 °C, marking indicates use of 75 °C or 90 °C wiring for supply connection as appropriate.	--	N/A
3.2.3	Equipment compatible with suitable trade sizes of conduits and cables.	--	N/A

IEC 60950-1:2005

Clause	Difference – Test	Result – Remark	Verdict
3.2.5	Length of power supply cord limited to between 1.5 and 4.5 m unless shorter length used when intended for a special installation.	No power supply cord.	N/A
3.2.5	Conductors in power supply cords sized per NEC	--	N/A
3.2.5	Power supply cords and cord sets incorporate flexible cords suitable for the particular application.	--	N/A
3.2.6	Strain relief provided for non-detachable interconnecting cables not supplied by a limited power source.	--	N/A
3.2.9	Adequate wire bending space and volume of field wiring compartment required to properly make the field connections.	--	N/A
3.2.9	Equipment solely for installation in Restricted Access Locations using low voltage d.c. systems may not need provision for connecting and securing a field wiring system when wiring is protected from abuse.	--	N/A
3.3	Field wiring terminals provided for interconnection of units for other than LPS or Class 2 circuits also comply with 3.3.	--	N/A
3.3	Interconnection of units by LPS or Class 2 conductors may have field wiring connectors other than specified in 3.3 if wiring is reliably separated	--	N/A
3.3.1	Terminals for the connection of neutral conductor identified by a distinctive white marking or other equally effective means	Direct plug-in adaptor.	N/A
3.3.3	Wire binding screw terminal permitted for connection of No. 10 AWG (5.3 mm ²) or smaller conductor if provided with upturned lugs, cupped washer or equivalent retention.	--	N/A
3.3.4	Terminals accept US wire sizes (gauge)	--	N/A
3.3.4	Terminals accept current-carrying conductors rated 125% of the equipment current rating.	--	N/A
3.3.6	Field wiring terminals marked to indicate the material(s) of the conductor for the terminals used	--	N/A
3.3.6	Aluminum conductors not permitted for connection to terminal for equipment earthing conductor	--	N/A
3.3.6	Field wiring connections made through the use of suitable pressure connectors (including set screw type), solder lugs or splices to flexible leads.	--	N/A

IEC 60950-1:2005			
Clause	Difference – Test	Result – Remark	Verdict
3.4.2	Separate motor control device(s) required for cord-connected equipment rated more than 12 A, or with motor rated more than 1/3 hp or more than 120 V.	--	N/A
3.4.8	Vertically mounted disconnect devices oriented so up position of handle is "on".	--	N/A
3.4.11	For computer-room applications, equipment with battery systems capable of supplying 750 VA for 5 minutes provided with battery disconnect means	--	N/A
4.2.8.1	Special opening restrictions for enclosures around CRTs with face dimension of 160 mm or more.	--	N/A
4.2.9	Compartment housing high-pressure lamp marked to indicate risk of explosion.	--	N/A
4.2.11	For equipment mounted on racks and provided with slide/rails allowing the equipment to slide away from the rack for installation and maintenance, additional construction, performance and marking requirements are applicable to determine the adequacy of the slide/rails	--	N/A
4.3.2	Loading test for equipment with handle(s) used to support more than 9 kg	--	N/A
4.3.6	In addition to the IEC requirements, Direct Plug-in Equipment complies with UL 1310	--	P
4.3.12	The max. quantity of flammable liquid stored in equipment per ANSI/NFPA 30 (Table NAE.6)	--	N/A
4.3.12	Equipment using replenishable liquids marked to indicate type of liquid to be used.	--	N/A
4.3.13.2	Equipment that produces x-radiation and does not comply with 4.3.12 under all conditions of servicing marked to indicate the presence of radiation	--	N/A
4.3.13.5	Requirements contained in the applicable national codes apply to lasers (21 CFR 1040).	--	N/A
4.7	Automated information storage equipment intended to contain more than 0.76 m ³ of combustible media requires provision for automatic sprinklers or a gaseous agent extinguishing system.	--	N/A

IEC 60950-1:2005

Clause	Difference – Test	Result – Remark	Verdict
4.7.3.1	Equipment for use in environmental air space other than ducts or plenums provided with metal enclosure or with non-metallic enclosure having adequate fire-resistance and low smoke producing characteristics (according to UL 2043). Equipment for installation in space used for environmental air, described in Sec. 300-22(c) of the NEC, provided with instructions indicating suitability for installation	--	N/A
4.7.3.1	Flame spread rating for external surface of combustible material with exposed area greater than 0.93 m ² or a single dimension greater than 1.8 m; 50 or less for computer room applications or 200 or less for other applications.	--	N/A
4.7.3.4	Wire marked "VW-1" or "FT-1" considered equivalent.	--	N/A
5.1.8.2	Special earthing provisions and instructions for equipment with high touch current due to telecommunication network connections.	--	N/A
5.1.8.3	Touch current due to ringing voltage for equipment containing telecommunication network leads.	--	N/A
5.3.7	Overloading of SELV connectors and printed wiring board receptacles accessible to the operator.	Output overload.	P
5.3.7	Tests interrupted by opening of a component repeated two additional times.	--	P
5.3.9.1	Test interrupted by opening of wire or trace subject to certain conditions.	--	N/A
6	Specialized instructions for telephones that may be connected to a telecommunications network	--	N/A
6	Marking identifying function of telecommunication type connectors not used for connection to a telecommunication network.	--	N/A
6.3	Equipment remotely powered over telecommunication wiring systems provided with specialized markings adjacent to the connection.	--	N/A
6.3	Overcurrent protection incorporated into equipment to provide power over telecommunication wiring system not interchangeable with devices of higher ratings if operator replaceable.	--	N/A
6.4	Additional requirements for equipment connected to a telecommunication network using cable subject to overvoltage from power line failures	--	N/A

IEC 60950-1:2005			
Clause	Difference – Test	Result – Remark	Verdict
6.4	Where 26 AWG line cord required by Fig. 6C, either the cord is provided with the equipment or described in the safety instructions.	--	N/A
7	Equipment associated with the cable distribution system may need to be subjected to applicable parts of Chapter 8 of the NEC.	--	N/A
H	Ionizing radiation measurements made under single fault conditions according to 21 CFR 1020	--	N/A
M.2	Continuous ringing signals evaluated to Method A subjected to special accessibility considerations.	--	N/A
M.4	Special requirements for message waiting and similar telecommunications signals.	--	N/A
NAC	Equipment for use with a generic secondary protector marked with suitable instructions.	--	N/A
NAC	Equipment marked with suitable instructions if for use with a specific primary or secondary protector	--	N/A
NAD	Acoustic pressure from an ear piece for short and long duration disturbances	--	N/A
NAD	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	--	N/A
NAF	Household/Home Office Document Shredders		N/A
NAF.1.7	Markings and instructions alert the user to key safety considerations related to use of shredders, including not intended to be used by children, avoid touching document feed opening, avoid clothes and hair entanglement, and avoid aerosol products.	--	N/A
NAF.2.8.3	Safety interlock cannot be inadvertently activated by the articulated accessibility probe	--	N/A
NAF.3.4	Provided with an isolating switch complying with 3.4.2, including 3 mm contact gap, with appropriate markings associated with the switch.	--	N/A
NAF.4.4	Hazardous moving parts are not accessible, as determined using the articulated accessibility probe and the accessibility probe/wedge	--	N/A

IEC 60950-1:2005			
Clause	Difference – Test	Result – Remark	Verdict
National Differences for Canada			
Canada and the United States of America have adopted a single, bi-national standard, CAN/CSA C22.2 No. 60950-1/UL60950-1, Second Edition, which is based on IEC 60950-1, Second Edition. This bi-national standard should be consulted for further details on the national conditions and differences summarized below.			
SPECIAL NATIONAL CONDITIONS			
The following is a summary of the key national differences based on national regulatory requirements, such as the Canadian Electrical Code (CEC) Part I and the Canadian Building Code, which are referenced in legislation and which form the basis for the rules and practices followed in electrical and building installations.			
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. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	--	P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A	--	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.....	--	N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC/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.	--	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 if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall 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 shall be marked with the voltage rating and "Class 2" or equivalent. Marking shall be located adjacent to the terminals and shall be visible during wiring.	--	N/A


IEC 60950-1:2005			
Clause	Difference – Test	Result – Remark	Verdict
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.	--	N/A
2.7.1	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. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	--	N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.	--	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.	--	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.	--	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.	--	N/A
3.2.5	Power supply cords are required to be no longer than 4.5 m in length. Flexible power supply cords are required to be compatible with Tables 11 and 12 of the CEC and Article 400 of the NEC.	--	N/A
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	Not permanently connected equipment.	N/A
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.	--	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).	--	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for Canadian/US wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).	--	N/A

IEC 60950-1:2005			
Clause	Difference – Test	Result – Remark	Verdict
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a nominal voltage rating greater than 120 V, 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 are required to have the "on" position indicated by the handle in the up position.	--	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.	--	N/A
	Battery system: When power-off is activated:	--	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.	--	N/A
	Flammable liquid material: Flash point: Boiling point: Container material: Storage container size:	--	N/A
4.3.13.5	Equipment with lasers is required to meet the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.	--	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m ³ (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.	--	N/A
4.7.3.1	For computer 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) 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.	--	N/A
Annex H	Equipment that produces ionizing radiation is required to comply with the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations, 21 CFR 1020, as applicable.	--	N/A

IEC 60950-1:2005			
Clause	Difference – Test	Result – Remark	Verdict
OTHER 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.	See safety component list	P
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. This maximum operating voltage shall include consideration of the battery charging “float voltage” associated with the intended supply system, regardless of the marked power rating of the equipment.	--	—
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 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.	--	N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, SELV Circuits and accessible conductive parts comply with the North American limits of 2.2.3.	--	N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) subjected to the additional limited short circuit test conditions specified, if required.	--	N/A

IEC 60950-1:2005			
Clause	Difference – Test	Result – Remark	Verdict
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are provided with suitable enclosure to reduce the risk of injury due to the implosion of the CRT.	--	N/A
	Projected area of opening: Minor dimension of projected area	--	—
4.2.11	For equipment intended for mounting on racks and provided with slide/rails allowing the equipment to slide away from the rack for installation, service and maintenance, additional construction, performance and marking requirements are applicable to determine the adequacy of the slide/rails.	--	N/A
4.3.2	Equipment with handles is required to comply with special loading tests.	--	N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	--	N/A
	Ringing ports provided: Simulation provided to: Measured total touch current :	--	—
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. 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.	Output overload.	P
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	--	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.	--	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 is required to comply with special acoustic pressure requirements.	--	N/A

IEC 60950-1:2005			
Clause	Difference – Test	Result – Remark	Verdict
Annex NAF	Document (paper) shredders likely to be used in a home or home office (Pluggable Equipment Type A plug configuration) are required to comply with additional requirements, including markings/instructions, protection against inadvertent reactivation of a safety interlock, disconnection from the mains supply (via provision of an isolating switch), and protection against operator access (accessibility determined via new accessibility probe & probe/wedge).	--	N/A

IEC 60950-1:2005			
Clause	Difference – Test	Result – Remark	Verdict
Annex NAF			
Household/home office Document shredders			
NAF1.7	Markings and Instructions	--	N/A
NAF 1.7.15	Symbols alerting the user to the following considerations are provided adjacent to the document feed opening. These symbols are explained in the instructions:	--	N/A
	Product is not intended for use by children (product is not a toy)	--	N/A
	Avoid touching the document feed opening with hands	--	N/A
	Avoid clothing touching the document feed opening	--	N/A
	Keep aerosol products away (applicable for product with brush motor only)	--	N/A
	The  (ISO 7000-0434) symbol to alert user to important operating, maintenance and/or servicing instructions and the explanation of above symbols	--	N/A
	Marking is permanent, comprehensible and easily discernible on the equipment.	--	N/A
NAF 2.8.3	Safety interlock can not be activated by articulated accessibility probe (NAF.1)	--	N/A
NAF 3.4	Isolation switch complying with 3.4.2 is provided to disconnect power to hazardous moving parts	--	N/A
	On/off marking is provided for two position switch .:	--	N/A
	Off marking for multi-position switch	--	N/A
		--	N/A
NAF 4.4	Protection against hazardous moving parts	--	N/A
	Accessibility probe (Fig NAF.1) is inserted without force into each opening and did not contact hazardous moving parts	--	N/A
	Operator accessible guards are removed and Accessibility wedge is inserted into each opening according without contacting mechanical hazards:	--	--
	Strip-cut (45N):	--	N/A
	Cross-cut (90N)	--	N/A

IEC 60950-1 / EN 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
AUSTRALIA-Differences to IEC 60950-1:2001 (national differences for IEC 60950-1:2005 do not exist)			
Annex ZZ (normative)			
Variations to IEC 60950-1:2001 for application in Australia and New Zealand			
ZZ.1 Introduction			
This Annex sets out variations between this Standard and IEC 60950-1:2001. These variations indicate national variations for purposes of the IECEE CB Scheme and will be published in the IECEE CB Bulletin. These variations are indicated within the body of the Standard.			
ZZ.” Variations			
The variations are as follows :			
1.2	Between the definitions for ‘Person, service’ and ‘Range, rated frequency’ insert the following: Ignition source 1.2.12.201	Considered.	P
1.2.12.15	After the definition of 1.2.12.15, add the following: 1.2.12.201 potential ignition source: Possible fault which can start a fire if the open-circuit voltage measured across an interruption or faulty contact exceeds a value of 50 V (peak) a.c. or d.c. and the product of the peak value of this voltage and the measured r.m.s current under normal operating conditions exceeds 15 VA. Such a faulty contact or interruption in an electrical connection includes those which may occur in conductive patterns on printed boards. NOTE 201 An electronic protection circuit may be used to prevent such a fault from becoming a POTENTIAL IGNITION SOURCE. NOTE 202 This definition is from AS/NZS 60065:2003.	See abnormal testing.	P
1.5.1	Add the following to the end of first paragraph: ‘or the relevant Australian/New Zealand Standard’.	IEC/UL approved materials and components are used.	N/A
1.5.2	Add the following to the end of first and third dash items: ‘or the relevant Australian/New Zealand Standard’.	--	N/A
2.1	Delete the Note.	--	N/A
3.2.3	Delete Note 2.	Not permanently connected equipment.	N/A

IEC 60950-1 / EN 60950-1

IEC 60950-1 / EN 60950-1					
Clause	Difference – Test			Result – Remark	Verdict
3.2.5.1	Modify Table 3B as follows: Delete the first four rows and replace with			No cord provided.	N/A
	RATED CURRENT OF EQUIPMENT A	Minimum conductor sizes			
		Nominal cross- sectional area mm ²	AWG or Kcmil (cross-sectional area in mm ²)		
			See note 1		
	Over 0.2 up to and including 3	0,5 ¹⁾	18 (0,8)		
	Over 3 up to and including 7,5	0,75	16 (1,3)		
Over 7,5 up to and including 10	(0,75) ²⁾	1,00	16 (1,3)		
Over 10 up to and including 16	(1,0) ³⁾	1,5	14 (2)		
	Replace footnote 1) with the following: ¹⁾ 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 mm ² three-core supply flexible cords are not permitted; see AS/NZS 3191). Delete Note 1.			--	N/A
4.3.13.5	Add the following to the end of the first paragraph: , or AS/NZS 2211.1'.“.			--	N/A
4.7	Add the following paragraph: For alternative tests refer to Clause 4.7.201.			--	N/A
4.7.201	Add the following after Clause 4.7.3.6. 4.7.201 Resistance to fire – Alternative tests 4.7.201.1 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 originating from inside the apparatus, or the following: Components that are contained in an enclosure having a flammability category of FV-0 according to AS/NZS 4695.707 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length. 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 mm ³ , integrated circuits,			The flame rating of the components was evaluated to the requirements of IEC. The PCB board is specified min. V-0. Therefore no needle test was considered as required.	N/A

IEC 60950-1 / EN 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
	<p>transistors and optocoupler packages, if these components are mounted on material of flammability category FV-1, or better, according to AS/NZS 4695.707.</p> <p>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 fire from one part to another.</p> <p>Compliance shall be checked by the tests of 4.7.201.2, 4.7.201.3, 4.7.201.4 and 4.7.201.5.</p> <p>For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5.</p> <p>The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus. 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.</p> <p>4.7.201.2 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.</p> <p>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 sample tested was not thicker than the relevant part.</p> <p>4.7.201.3 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.</p>		
	<p>The test shall be also carried out on other parts of insulating material which are within a distance of 3mm of the connection.</p> <p>NOTE Contacts in components such as switch contacts are considered to be connections.</p> <p>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 shall not be tested.</p> <p>The needle-flame test shall be made in accordance with AS/NZS 4695.2.2 with the following modifications:</p>	--	N/A

IEC 60950-1 / EN 60950-1

Clause	Difference – Test		Result – Remark	Verdict
	Clause of AS/NZS 4695.2.2	Change	--	N/A
	5 Severities	Replace with: The duration of application of the test flame shall be 30 s \pm 1 s.		
	8 Test procedure			
	8.2	Replace the first sentence with: 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.		
	8.4	The first paragraph does not apply. Addition: If possible, the flame shall be applied at least 10 mm from a corner.		
	8.5	Replace with: The test shall be made on one specimen. If the specimen does not		
	10 Evaluation of test results	Replace with: The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.		
	<p>The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to IEC 60695-11-10, provided that the sample tested was not thicker than the relevant part.</p> <p>4.7.201.4 Testing in the event of non-extinguishing material If parts, other than enclosures, do not withstand the glow wire tests of 4.7.201.3, by failure to extinguish within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in 4.7.201.3 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 4.7.201.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested.</p> <p>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 4.7.201 without the need for consequential testing.</p> <p>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 4.7.201 without the need for consequential testing.</p> <p>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.</p>		--	N/A

IEC 60950-1 / EN 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
	<p>4.7.201.5 Testing of printed boards</p> <p>The base material of printed boards shall be subjected to the needle-flame test of Clause 4.7.201.3. 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.</p> <p>The test is not carried out if the — Printed board does not carry any POTENTIAL IGNITION SOURCE; 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 normal operating conditions, is of flammability category FV-1 or better according to AS/NZS 4695.707, or the printed boards are protected by an enclosure meeting the flammability category FV-0 according to AS/NZS 4695.707, or made of metal, having openings only for connecting wires which fill the openings completely; or Base material of printed boards, on which the available apparatus 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 FV-0 according to AS/NZS 4695.707 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. Compliance shall be determined using the smallest thickness of the material.</p> <p>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 maximise the apparent power for more than 2 min when the circuit supplied is disconnected.</p>		
6.2.2	<p>Add the symbol NZ in the right hand margin beside the first paragraph.</p> <p>Add the following after the first paragraph: In Australia (this variation does not apply in New Zealand), compliance with 6.2.2 shall be checked by the tests of both 6.2.2.1 and 6.2.2.2.</p> <p>Delete the note.</p>	--	N/A

IEC 60950-1 / EN 60950-1

Clause	Difference – Test	Result – Remark	Verdict
6.2.2.1	<p>Add the symbol NZ in the right hand margin beside the first paragraph including Note 1. Delete Note 2 Add the following after the first paragraph: In Australia (this variation does not apply in New Zealand), the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator of annex N for 10/700µs impulses. The interval between successive impulses is 60 s and the initial voltage, U_c, is: for 6.2.1 a): 7.0 kV for hand-held telephones and for headsets and 2.5 kV for other equipment; and for 6.2.1 b) and 6.2.1 c): 1.5 kV. NOTE 201 – The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 – The value of 2.5 kV for 6.2.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.</p>	--	N/A
6.2.2.2	<p>Add the symbol NZ in the right hand margin beside the second paragraph. Delete the Note. Add the following after the second paragraph: In Australia (this variation does not apply in New Zealand), the a.c. test voltage is: for 6.2.1 a): 3 kV; and for 6.2.1 b) and 6.2.1 c): 1.5 kV. NOTE 201 – 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 have been determined considering the low frequency induced voltages from the power supply distribution system.</p>	--	N/A
Annex P	<p>Add the following Normative References to Annex P: IEC 60065, Audio, Video and similar electronic apparatus—Safety requirements AS/NZS 3191, Approval and test specification—Electric flexible cords AS/NZS 3112, Approval and test specification—Plugs and socket-outlets AS/NZS 4695.707, Fire hazard testing of electrotechnical products—Methods of test for the determination of the flammability of solid electrical insulating materials when exposed to an igniting source</p>	Considered. IEC approved material and components are used.	P
Index	<p>Between the entries for 'polyimide insulating material' and 'powder' insert the following: potential ignition source 1.12.201, 4.7.201.3, 4.7.201.5</p>	--	P

IEC 60950-1 / EN 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
CHINA-Differences to IEC 60950, Third Edition (1999) (National differences for IEC 60950-1:2005 and IEC 60950-1:2001 do not exist)			
1.	Supply tolerance Item 1.4.5 of IEC60950 stipulates the tolerance of rated voltage is +6% and –10%, while GB4943-2001 makes a specification of tolerance of +10% and –10%.	The supply tolerance is covering the requirements.	P
2.	Power rating marking Item 1.7.1 of IEC60950 does not specify concrete figures of markings for supply voltage and frequency, instead, descriptions are given by examples. But the examples do not include China's mains voltage. GB4943-2001 stipulates that: ·A single rated voltage shall be expressed as 220V ·When a rated voltage range is given, the range shall cover 220V ·When a variety of rated voltages or rated voltage ranges are given, one of them shall be 220V, and shall be set as 220V when dispatched from the factory ·Rated frequency or rated frequency range shall be 50Hz or include 50Hz ·If a unit is not provided with a means for direct connection to the AC mains supply, it need not be marked with any electrical rating	See type label. Input voltage range is 100-240 Vac.	P
3.	Plate and warning marking in Chinese Item 1.7.12 of GB4943-2001 stipulates: instructions and equipment markings related to safety shall be in standardized Chinese.	Chinese type label not part of this evaluation.	N/A
4.	Power supply plug According to China's particular standards for power supply plug, it is added in article 3.2.1 of GB4943-2001 that plug connecting equipment with AC mains supply shall be in accordance with requirements of GB1002	Shall be evaluated during China approval.	N/A

IEC 60950-1 / EN 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
JAPAN- Differences to IEC 60950, Third Edition (1999) (National differences to IEC 60950-1:2005 and IEC 60950-1:2001 do not exist)			
1.2	Addition: Add the following terms. Equipment, Class 0I 1.2.4.101 Material, VTM 1.2.12.101	Considered.	P
1.2.4.101	Addition: CLASS 0I EQUIPMENT: Equipment where protection against electric shock is achieved by: a) using BASIC INSULATION, and b) providing a means of connecting to the protective earthing conductor in the building wiring those conductive parts that are otherwise capable of assuming HAZARDOUS VOLTAGES if the BASIC INSULATION fails, and c) using a supply cord without earthing conductor and a plug without earthing wire although the equipment has externally an earth terminal or a lead wire for earthing. Equipment provided with a cord set having a two-pin type plug with a lead wire for earthing is also regarded as Class 0I. NOTE – Class 0I equipment may have a part constructed with Double Insulation or Reinforced Insulation as well as an operating part as SELV circuit.	Equipment is rated class II.	N/A
1.2.12.1	Replacement: FLAMMABILITY CLASSIFICATION OF MATERIALS: The recognition of the burning behaviour of materials and their ability to extinguish if ignited. Materials are classified as in 1.2.12.2 to 1.2.12.9, and 1.2.12.101 when tested in accordance with annex A. NOTE 1 - When applying the requirements in this standard, HF-1 CLASS FOAMED MATERIALS are regarded as better than those of CLASS HF-2, and HF-2 better than HBF. NOTE 2 - Similarly, other MATERIALS, including rigid (engineering structural) foam of CLASSES 5V or V-0 are regarded as better than those of CLASS V-1, V-1 better than V-2, and V-2 better than HB. NOTE 3 - Similarly, for thin MATERIALS, VTM-0 Class materials are regarded as better than those of VTM-1 Class, and VTM-1 better than VTM-2.	IEC/UL approved materials are used. See list of critical components.	N/A

IEC 60950-1 / EN 60950-1			
Clause	Difference – Test	Result – Remark	Verdict
1.2.12.10 1	Addition: VTM CLASS MATERIAL: Thin MATERIALS fulfill the specified conditions during the test of clause A.101 applied for materials that the test and evaluation of clauses A.6 to A.10 is difficult to enforce. Materials are classified to three classifications as VTM-0, VTM-1 and VTM-2 according to the conditions after the removal of the test flame.	IEC/UL approved materials are used. See list of critical components.	N/A
1.7.101	Addition: Marking for CLASS 0I EQUIPMENT For CLASS 0I EQUIPMENT, the following instruction shall be indicated on the visible place of the mains plug or the main body: “Provide an earthing connection” Moreover, for CLASS 0I EQUIPMENT, the following instruction shall be indicated 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.”	--	N/A
2.1.1.1	Replacement: Replace “IEC 60083” to “IEC 60083 or JIS C 8303” in 2.1.1.1 b).	Considered.	P
2.6.3.1	Addition: Add the following after 1st paragraph. This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT.	--	N/A
2.6.4.1	Replacement: Replace 2nd sentence in 1st paragraph. For CLASS I EQUIPMENT with a DETACHABLE POWER SUPPLY CORD, the earthing terminal in the appliance inlet is regarded as the main protective earthing terminal.	--	N/A
2.6.5.4	Replacement: Replace 1st sentence. Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following:	--	N/A
2.6.101	Addition: 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 where easily visible.	--	N/A
3.2.5	Delete 1) in Table 3B.	No power supply cord provided.	N/A

IEC 60950-1 / EN 60950-1

IEC 60950-1 / EN 60950-1																																							
Clause	Difference – Test	Result – Remark	Verdict																																				
4.2.8	Addition: Add the following informative remark after the last sentence. Remark - IEC 61965 is also applicable instead of IEC 60065.	--	N/A																																				
4.5.1	Addition: Add the following to suffix 5) as specified in “Conditions applicable to Table 4A, Parts 1 and 2”. With regard to Table 4A, insulating materials complying with Japanese requirements (refer to Japanese differences for the current IEC 60335-1 (3rd Edition) in CB Bulletin 101B) are also acceptable. Add a suffix 7) in “Conditions applicable to Table 4A, Parts 1 and 2”. In the right column of Table 4A, Part 1, add suffix 7) to “50” (K), corresponding to “- without T – marking” in the left column so as to become “50 7)”. Add 7) to Table 4A, Part 2 as follows. 7) This value shall apply only to wiring or cords complying with relevant IEC standards. Others shall comply with Japanese requirements (refer to Japanese differences for the current IEC 60335-1 (3rd Edition) in CB Bulletin 101B).	--	N/A																																				
4.7.3.2	Addition: Add the following in 7th paragraph. - for thin materials, e.g., flexible printed boards, etc., used inside equipment, be of FLAMMABILITY CLASS VTM-2 or better.	The flame rating of the components was evaluated to the requirements of IEC. The PCB board is specified min. V-0.	N/A																																				
5.1.6	Replacement: Replace Table 5A. <table><tr><th>Type of equipment</th><th>Terminal A of measuring instrument connected to:</th><th>Maximum TOUCH CURRENT mA r.m.s. 1)</th><th>Maximum PROTECTIVE CONDUCTOR CURRENT</th></tr><tr><td>ALL equipment</td><td>Accessible parts and circuits not connected to protective earth</td><td>0.25</td><td>--</td></tr><tr><td>HAND-HELD</td><td rowspan="6">Equipment main protective earthing terminal (if any) CLASS I EQUIPMENT</td><td>0.75</td><td>--</td></tr><tr><td>MOVABLE (other than HAND-HELD, but including TRANSPORTABLE EQUIPMENT)</td><td>3.5</td><td>--</td></tr><tr><td>STATIONARY</td><td>3.5</td><td>--</td></tr><tr><td>PLUGGABLE TYPE & ALL other STATIONARY EQUIPMENT</td><td>3.5</td><td>--</td></tr><tr><td colspan="2">- not subject to the conditions of 5.1.7</td><td>-</td><td>5 % of input current</td></tr><tr><td colspan="2">- subject to the conditions of 5.1.7</td><td>-</td><td>-</td></tr><tr><td>HAND-HELD</td><td rowspan="2">Equipment main protective earthing terminal (if any) CLASS II EQUIPMENT</td><td>0.5</td><td>--</td></tr><tr><td>Others</td><td>1.5</td><td>--</td></tr></table> <p>1) If peak values of TOUCH CURRENT are measured, the maximum values obtained by multiplying the r.m.s. values by 1.414.</p>	Type of equipment	Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. 1)	Maximum PROTECTIVE CONDUCTOR CURRENT	ALL equipment	Accessible parts and circuits not connected to protective earth	0.25	--	HAND-HELD	Equipment main protective earthing terminal (if any) CLASS I EQUIPMENT	0.75	--	MOVABLE (other than HAND-HELD, but including TRANSPORTABLE EQUIPMENT)	3.5	--	STATIONARY	3.5	--	PLUGGABLE TYPE & ALL other STATIONARY EQUIPMENT	3.5	--	- not subject to the conditions of 5.1.7		-	5 % of input current	- subject to the conditions of 5.1.7		-	-	HAND-HELD	Equipment main protective earthing terminal (if any) CLASS II EQUIPMENT	0.5	--	Others	1.5	--	--	N/A
Type of equipment	Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. 1)	Maximum PROTECTIVE CONDUCTOR CURRENT																																				
ALL equipment	Accessible parts and circuits not connected to protective earth	0.25	--																																				
HAND-HELD	Equipment main protective earthing terminal (if any) CLASS I EQUIPMENT	0.75	--																																				
MOVABLE (other than HAND-HELD, but including TRANSPORTABLE EQUIPMENT)		3.5	--																																				
STATIONARY		3.5	--																																				
PLUGGABLE TYPE & ALL other STATIONARY EQUIPMENT		3.5	--																																				
- not subject to the conditions of 5.1.7		-	5 % of input current																																				
- subject to the conditions of 5.1.7		-	-																																				
HAND-HELD	Equipment main protective earthing terminal (if any) CLASS II EQUIPMENT	0.5	--																																				
Others		1.5	--																																				
5.3.8.2	Replacement: Replace 3rd Item as follows. - BASIC INSULATION between the PRIMARY CIRCUIT and accessible conductive parts of CLASS I or 0I EQUIPMENT;	--	N/A																																				
Annex A	Addition: Add the subclause A.101 with the title “Flammability tests for classifying materials VTM” and the following: Thin sheet materials shall comply with ISO 9773.	--	N/A																																				

IEC 60950-1 / EN 60950-1															
Clause	Difference – Test	Result – Remark	Verdict												
Annex G	Addition: Add the following to the Note for Table G.1. 2. In Japan, MAINS TRANSIENT VOLTAGE for equipment with a Nominal AC MAINS SUPPLY VOLTAGE of 100V is to be decided based on the column where Nominal AC MAINS SUPPLY VOLTAGE in Table G.1 is 150V.	Supply voltage: 100-240 Vac.	N/A												
Annex P	Addition: Add “IEC 61965:2000, Mechanical Safety for Cathode Ray Tubes”.	--	N/A												
Annex U	Replacement: Replace 2nd paragraph. This annex covers to round winding wires having diameters between 0.05 mm and 5.00 mm.	All TIW used are approved. See list of critical components for details.	N/A												
U.2.1	Replacement: Electric strength The test sample is prepared according to IEC 60851-5:1997, 4.4.1 (for a twisted pair). The sample is then subjected to the test of 5.2.2 of this standard, with a test voltage not less than twice the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows: - for BASIC INSULATION or SUPPLEMENTARY INSULATION, 3000 V, or; - for REINFORCED INSULATION, 6000 V.	--	N/A												
U.2.2	Replacement: Flexibility and adherence Test 8 of IEC 60851-3:1996, 5.1.1, using the mandrel diameters of table U.1. The test sample is then examined in accordance with IEC 60851-3:1996, 5.1.1.4, followed by the test of 5.2.2 of this standard except applying the test voltage between the wire and the mandrel. A test voltage shall not be less than twice the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows: - for BASIC INSULATION or SUPPLEMENTARY INSULATION, 1500 V, or; - for REINFORCED INSULATION, 3000 V.	--	N/A												
Table U.1	Replacement: Mandrel diameter <table border="1"><thead><tr><th>Nominal Conductor diameter mm</th><th>Mandrel diameter mm ± 0.2 mm</th></tr></thead><tbody><tr><td>0.36 – 0.38</td><td>4.0</td></tr><tr><td>0.36 – 0.49</td><td>6.0</td></tr><tr><td>0.50 – 0.74</td><td>8.0</td></tr><tr><td>0.75 – 2.49</td><td>10.0</td></tr><tr><td>2.50 – 5.00</td><td>4 times of the diameter of conductor⁽¹⁾</td></tr></tbody></table> <p>⁽¹⁾ in compliance with IEC 60317-43</p> <p>The tension to be applied to the wire during winding on the mandrel is calculated from the wire diameter to be equivalent to 118 Mpa ± 10 % (118 N/mm² ± 10 %).</p>	Nominal Conductor diameter mm	Mandrel diameter mm ± 0.2 mm	0.36 – 0.38	4.0	0.36 – 0.49	6.0	0.50 – 0.74	8.0	0.75 – 2.49	10.0	2.50 – 5.00	4 times of the diameter of conductor ⁽¹⁾	--	N/A
Nominal Conductor diameter mm	Mandrel diameter mm ± 0.2 mm														
0.36 – 0.38	4.0														
0.36 – 0.49	6.0														
0.50 – 0.74	8.0														
0.75 – 2.49	10.0														
2.50 – 5.00	4 times of the diameter of conductor ⁽¹⁾														

Enclosure No. 1a

**European Group Differences and National Differences
according to EN 60950-1:2006 + A11:2009**

EN 60950-1:2006/A11:2009 – CENELEC COMMON MODIFICATIONS

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications (EN)) according to EN 60950-1:2006/A11:2009			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications (EN))			
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		P
General	Delete all the "country" notes in the reference document according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1 Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6. 2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2		P
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.	--	N/A
1.5.1	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC	--	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications (EN)) according to EN 60950-1:2006/A11:2009			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	Add the following NOTE: NOTE Z1 In addition, the instructions shall include, as far as applicable, a warning that excessive sound pressure from earphones and headphones can cause hearing loss	No sound pressure.	N/A
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, 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 5.3 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;	--	P
	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.	The unit is pluggable equipment Type A.	N/A
2.7.2	This subclause has been declared 'void'.		P
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	The unit is not permanently connected equipment.	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications (EN)) according to EN 60950-1:2006/A11:2009									
Clause	Requirement + Test	Result - Remark	Verdict						
3.2.5.1	<p>Replace “60245 IEC 53” by “H05 RR-F”; “60227 IEC 52” by “H03 VV-F or H03 VVH2-F”; “60227 IEC 53” by “H05 VV-F or H05 VVH2-F2”.</p> <p>In Table 3B, replace the first four lines by the following:</p> <table><tr><td>Up to and including 6 </td><td>0,75 ^{a)} </td></tr><tr><td>Over 6 up to and including 10 (0,75) ^{b)}</td><td>1,0 </td></tr><tr><td>Over 10 up to and including 16 (1,0) ^{c)}</td><td>1,5 </td></tr></table> <p>In the conditions applicable to Table 3B delete the words “in some countries” in condition ^{a)}.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>	Up to and including 6	0,75 ^{a)}	Over 6 up to and including 10 (0,75) ^{b)}	1,0	Over 10 up to and including 16 (1,0) ^{c)}	1,5	No power supply cord provided.	N/A
Up to and including 6	0,75 ^{a)}								
Over 6 up to and including 10 (0,75) ^{b)}	1,0								
Over 10 up to and including 16 (1,0) ^{c)}	1,5								
3.3.4	<p>In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:</p> <table><tr><td>Over 10 up to and including 16 </td><td>1,5 to 2,5 </td><td>1,5 to 4 </td></tr></table> <p>Delete the fifth line: conductor sizes for 13 to 16 A</p>	Over 10 up to and including 16	1,5 to 2,5	1,5 to 4	--				
Over 10 up to and including 16	1,5 to 2,5	1,5 to 4							
4.3.13.6	<p>Add the following NOTE:</p> <p>NOTE Z1 Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.</p>	No radiation.	N/A						
Annex H	<p>Replace the last paragraph of this annex by:</p> <p>At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level.</p> <p>Replace the notes as follows:</p> <p>NOTE These values appear in Directive 96/29/Euratom.</p> <p>Delete NOTE 2.</p>	--	N/A						
Bibliography	Additional EN standards.	--	—						

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—
----	---	---

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)	N/A
1.2.4.1	In Denmark , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	The unit is Class II equipment. N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications (EN)) according to EN 60950-1:2006/A11:2009			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.13.14	In Norway and Sweden , for requirements see 1.7.2.1 and 7.3 of this annex.		
1.5.7.1	In Finland, Norway and Sweden , resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.	No such resistors.	N/A
1.5.8	In Norway , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	--	N/A
1.5.9.4	In Finland, Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	--	N/A
1.7.2.1	In Finland, Norway and Sweden , 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"	The unit is Class II equipment.	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications (EN)) according to EN 60950-1:2006/A11:2009			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p> <p>In Norway and Sweden, the screen of the cable 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 need to be isolated from the screen of a cable distribution system.</p> <p>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 e.g. a retailer.</p> <p>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:</p> <p>"Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."</p> <p>NOTE In Norway, due to regulation for installations of cable distribution systems, 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.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>"Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet."</p> <p>Translation to Swedish:</p> <p>"Utrustning 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 utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet."</p>	--	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications (EN)) according to EN 60950-1:2006/A11:2009			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.5	In Denmark , socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a. For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.	No socket outlets provided.	N/A
2.2.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	The unit is direct plug-in adaptor.	N/A
2.3.2	In Finland, Norway and Sweden there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	--	N/A
2.3.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	--	N/A
2.6.3.3	In the United Kingdom , the current rating of the circuit shall be taken as 13 A, not 16 A.	--	P
2.7.1	In the United Kingdom , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	--	P
2.10.5.13	In Finland, Norway and Sweden , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	--	N/A
3.2.1.1	In Switzerland , supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A	No power supply cord provided.	N/A
	SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25, 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A	--	N/A



IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications (EN)) according to EN 60950-1:2006/A11:2009			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>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.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>	--	N/A
3.2.1.1	<p>In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>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 UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>	--	N/A
3.2.1.1	<p>In the United Kingdom, apparatus 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 and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>	--	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications (EN)) according to EN 60950-1:2006/A11:2009			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In Ireland , apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.	--	N/A
3.2.4	In Switzerland , for requirements see 3.2.1.1 of this annex.	--	N/A
3.2.5.1	In the United Kingdom , a power supply cord with conductor of 1,25 mm ² is allowed for equipment with a rated current over 10 A and up to and including 13 A.	No power supply cord provided.	N/A
3.3.4	In the United Kingdom , the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm ² to 1,5 mm ² nominal cross-sectional area.	--	N/A
4.3.6	In the United Kingdom , the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and 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.	--	P
4.3.6	In Ireland , DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.	--	P

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications (EN)) according to EN 60950-1:2006/A11:2009			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	<p>In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:</p> <ul style="list-style-type: none"> • STATIONARY PLUGGABLE EQUIPMENT TYPE A that <ul style="list-style-type: none"> ○ is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and ○ has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and ○ is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT. 	--	N/A
6.1.2.1	<p>In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - 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. <p>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</p> <ul style="list-style-type: none"> - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. 	--	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications (EN)) according to EN 60950-1:2006/A11:2009			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 132400; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400. 	--	N/A
6.1.2.2	In Finland, Norway and Sweden , the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.	--	N/A
7.2	In Finland, Norway and Sweden , for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.	--	N/A
7.3	In Norway and Sweden , for requirements see 1.2.13.14 and 1.7.2.1 of this annex.	--	N/A
7.3	In Norway , for installation conditions see EN 60728-11:2005.	--	N/A

ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN). A-DEVIATIONS (informative)		N/A
1.5.1	<p>Sweden (Ordinance 1990:944)</p> <p>Add the following:</p> <p>NOTE In Sweden, switches containing mercury are not permitted.</p>	--	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications (EN)) according to EN 60950-1:2006/A11:2009			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.1	<p>Switzerland (Ordinance on environmentally hazardous substances SR 814.081, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury.)</p> <p>Add the following: NOTE In Switzerland, switches containing mercury such as thermostats, relays and level controllers are not allowed.</p>	--	N/A
1.7.2.1	<p>Denmark (Heavy Current Regulations)</p> <p>Supply cords of CLASS I EQUIPMENT, which is delivered without a plug, must be provided with a visible tag with the following text:</p> <p style="text-align: center;">Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket  eller </p> <p>If essential for the safety of the equipment, the tag must in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text: "For tilslutning af de øvrige ledere, se medfølgende installationsvejledning."</p>	No power supply cord provided.	N/A
1.7.2.1	<p>Germany (Gesetz über technische Arbeitsmittel und Verbraucherprodukte (Geräte- und Produktsicherheitsgesetz – GPSG) [Law on technical labour equipment and consumer products], of 6th January 2004, Section 2, Article 4, Clause (4), Item 2).</p> <p>If for the assurance of safety and health certain rules during use, amending or maintenance of a technical labour equipment or readymade consumer product are to be followed, a manual in German language has to be delivered when placing the product on the market.</p> <p>Of this requirement, rules for use even only by SERVICE PERSONS are not exempted.</p>	End application.	N/A
1.7.5	<p>Denmark (Heavy Current Regulations)</p> <p>With the exception of CLASS II EQUIPMENT provided with a socket outlet in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-4a, CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.</p>	--	N/A
1.7.13	<p>Switzerland (Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15 Batteries)</p> <p>Annex 2.15 of SR 814.81 applies for batteries.</p>	No batteries.	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications (EN)) according to EN 60950-1:2006/A11:2009			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	Denmark (Heavy Current Regulations, Chapter 707, clause 707.4) TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B.	--	N/A

Enclosure No. 2

Pictures of the unit



View on the unit



Top view of unit (With standard EU Plug)



Top view of unit (Without any plug)



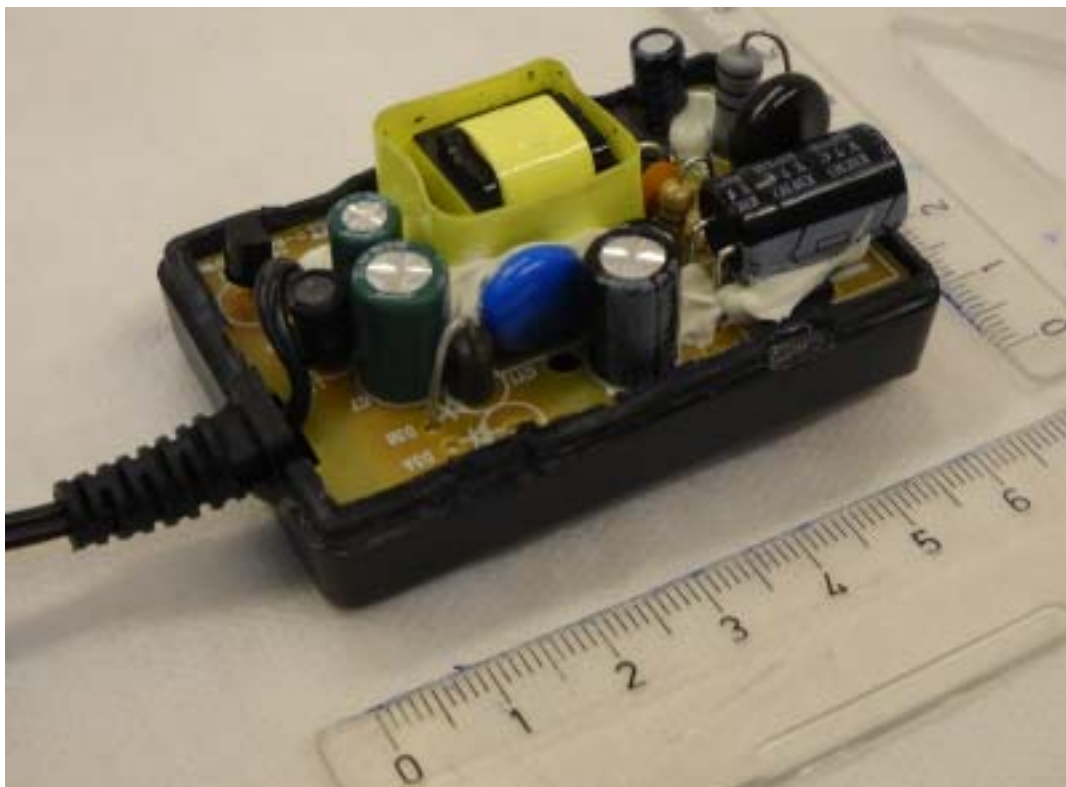
Side view of unit (Without any plug)



Side view of unit (With standard EU Plug)



Type label



View on unit with opened enclosure



Top view on unit with opened enclosure



Top view on opened enclosure



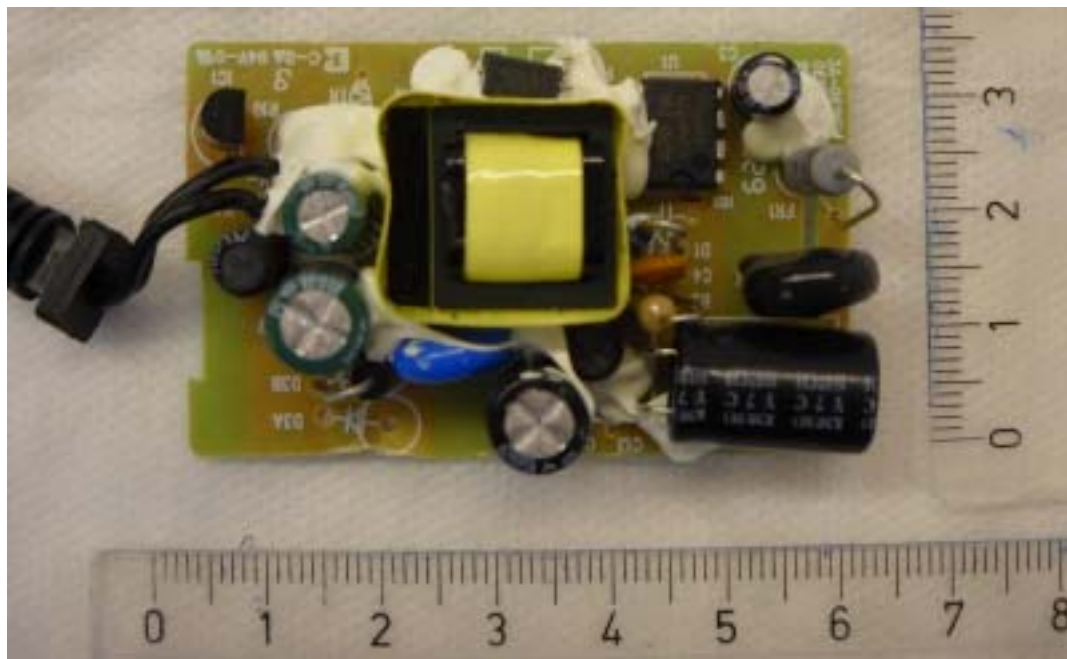
Top view on bottom part of enclosure



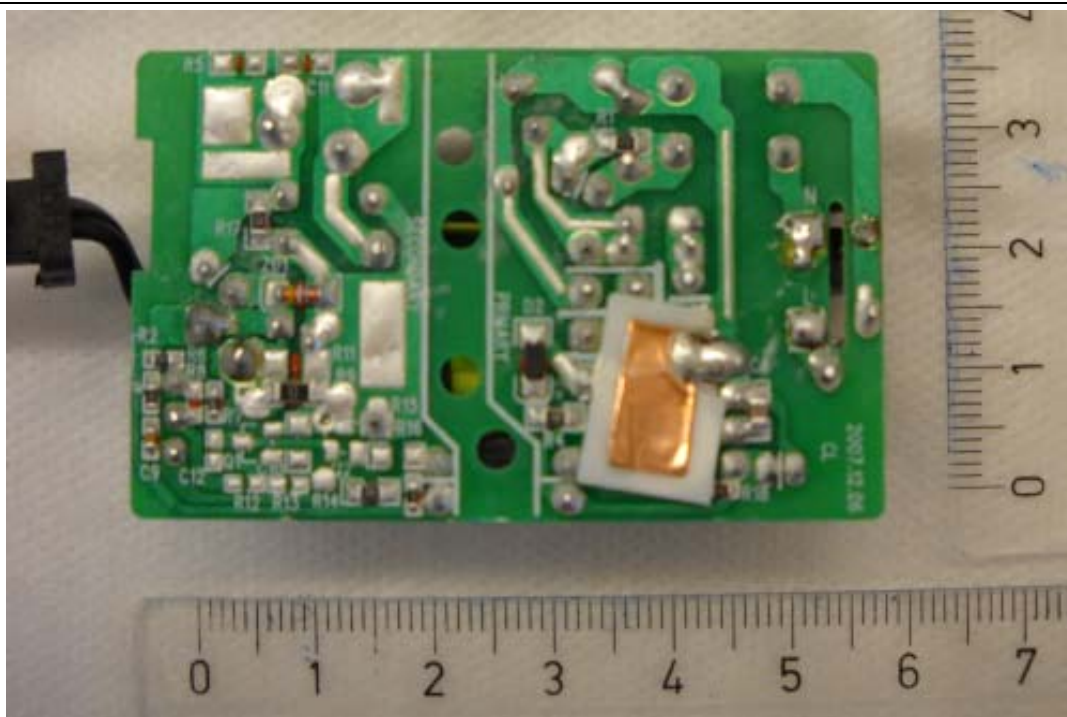
Top view on upper part of enclosure



Side view on PCB



Top view on PCB



Bottom side of PCB



View on other optional plug for the unit



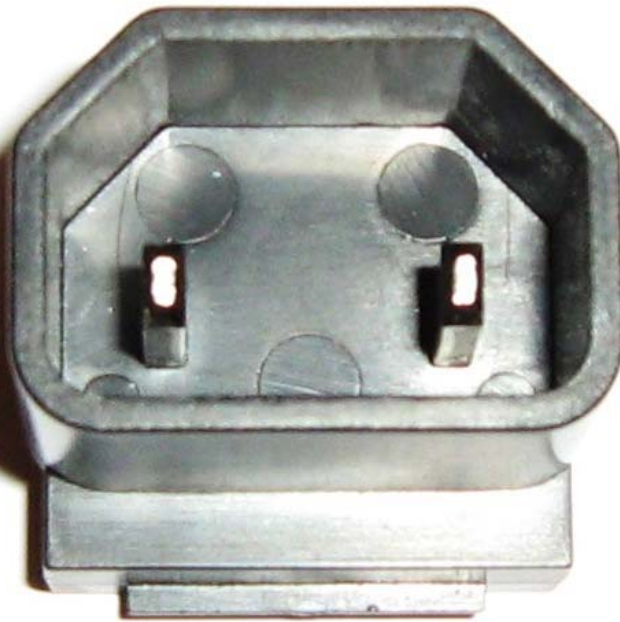
View on other optional plug for the unit



View on other optional plug for the unit

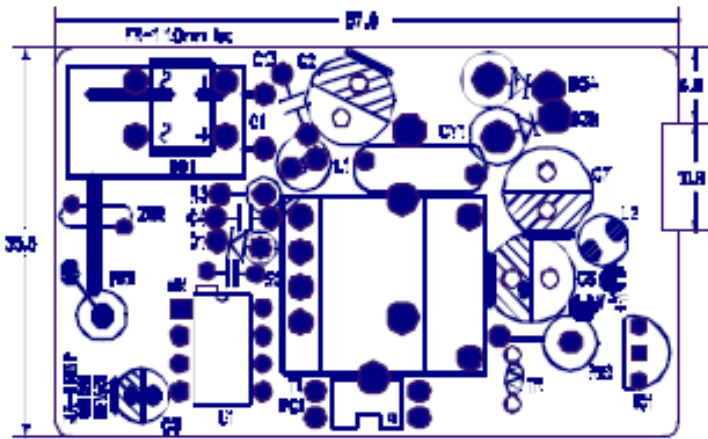
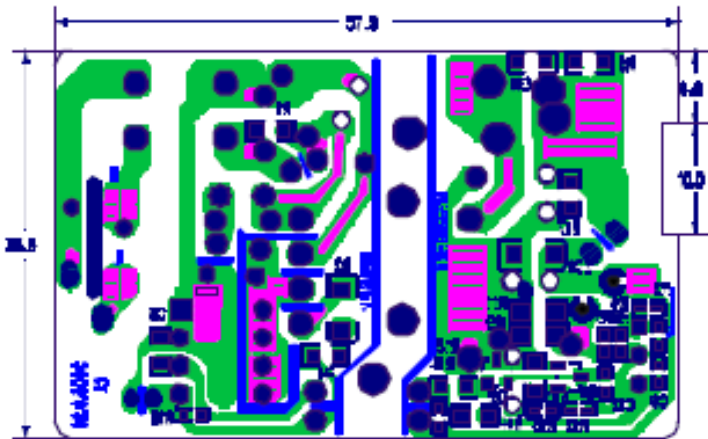


View on other optional plug for the unit



View on other optional plug for the unit

Enclosure No. 3
Schematics, layouts and transformer
drawings



承認書

SPECIFICATION FOR APPROVAL

客 戶
(CUSTOMER)

英格爾

(股) 有限公司

品 名 DESCRIPTION	TRANSFORMER				
料 號 PART NO.	XF00249				
使用機種 USE MODEL					
復 核	范揚昇	檢 驗	曹志宏	制 作	侯周梅

核 準 APPROVED	校 對 CHECKED	承 辦 ISSUED

揚尚企業有限公司

YOUNG-SHANG ELECTRONIC CO., LTD.
桃園縣中壢市中豐北路 18 號
CHUNG FENG NORTH RD, CHUNG YUAN
CITY TAO YUAN HSIEN TAIWAN . R.O.C
TEL: 886-3-4253830 FAX: 886-3-4256060

揚尚電子廠

YOUNG-SHANG ELECTRONIC PLANT
廣東省惠州博羅縣長寧鎮羅浮路 161 號 NO. 18,
TEL: 00286-752-6662372 6663113 6664994
FAX: 00286-752-6662367

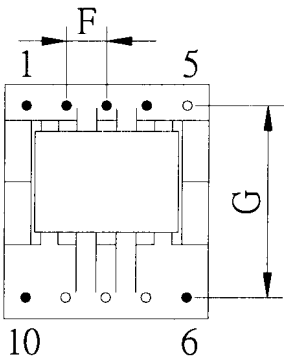
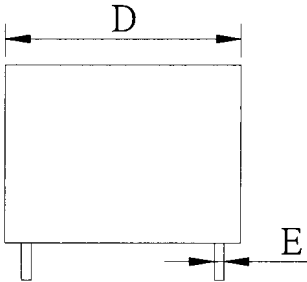
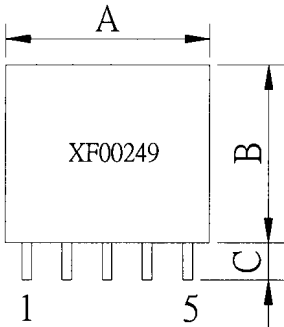
SPECIFICATION FOR APPROVAL

Y.S.E

PAGE 1 OF 3

CUSTOMER	英 格 爾	Y.S.E NO	EE16-05010249
PART NO	XF00249	PART NAME	TRANSFORMER
REV NO	A	ISSUE DATE	2005 / 1 / 30

1. CONFIGURATION & DIMENSIONS:



A (m/m)	17.0 MAX
B (m/m)	15.0 MAX
C (m/m)	3.2 ± 0.2
D (m/m)	19.5 MAX
E (m/m)	0.8 ± 0.1
F (m/m)	3.25 ± 0.5
G (m/m)	15.5 ± 0.5

NOTE:

1. UNITE: mm.

2. CORE FIXED BY MYLAR TAPE 2Ts.

3. 成品外包 14mm 膠帶 3Ts.

4. PIN5,7,8,9 CUT OFF.

REPORTED BY	CHECKED BY	SUPERVISED BY	APPROVED BY	3.	
熊 晨	侯周梅	曹志宏	范揚昇	2.	
				RECV 1.	

SPECIFICATION FOR APPROVAL

Y.S.E

PAGE 2 OF 3

CUSTOMER	英 格 爾	Y.S.E NO	EE16-05010249
PART NO	XF00249	PART NAME	TRANSFORMER
REV NO	A	ISSUE DATE	2005 / 1 / 30

2.WINDING SEQUENCE:

PIN1-5

N4:2 - 4 0.12 ϕ *1C 2UEW 36Ts

N3:6 -10 0.35 ϕ *1C TRW(B) 24Ts

E1: - 2 0.05t*7mm 1.1Ts

N2:1 - 3 0.13 ϕ *1C 2UEW 168Ts

N1:1 - 0.12 ϕ *2C 2UEW 26Ts REF

BOBBIN

PIN6-10

2mm

3T TAPE

2T TAPE

2T TAPE

1T TAPE

1T TAPE

1T TAPE

1T TAPE

3. SCHEMATIC:

1

N1

N2

3

4

N4

2

E1

10

N3

6

REPORTED BY	CHECKED BY	SUPERVISED BY	APPROVED BY	3.	
熊 晨	侯周梅	曹志宏	范揚昇	2.	
				REV 1.	

SPECIFICATION FOR APPROVAL

Y.S.E

PAGE 3 OF 3

CUSTOMER	英 格 爾	Y.S.E NO	EE16-05010249		
PART NO	XF00249	PART NAME	TRANSFORMER		
REV NO	A	ISSUE DATE	2005 / 1 / 30		
4. ELECTRONICAL CHARACTER:					
TEST INSTRUMENT	INDUCTANCE(L) @ 1KHZ 0.25VRMS CH-1061	DCR 502AC			
1---3	3.75mH \pm 10%	8.7 Ω MAX			
6---10		233m Ω MAX			
2---4		3.3 Ω MAX			
5. HI-POT : (CH9071) APPLY AC 3000V 5mA BETWEEN PRI. TO SEC. FOR 60 SEC. APPLY AC 1500V 5mA BETWEEN PRI. TO CORE FOR 60 SEC. APPLY AC 1500V 5mA BETWEEN SEC. TO CORE FOR 60 SEC.					
6. MATERIAL LIST:					
#	ITEM	MATERIAL	SUPPLIER		
1.	CORE	EE16 SP40 PC40 JPP-4 PL-7	PANSCIENCE T.D.K A-CORE ELECTRICAL CO., LTD SAM WHA CO., LTD OR EQUIVALENT		
2.	BOBBIN	PHENOLIC T375J 94V-0 150°C	CHANG CHUN PLASTICS CO.,LTD. E59481(S)		
3.	WIRE	POLYURETHANE ENAMEL -LED COPPER WIRE 130°C	PACIFIC ELECTRIC WIRE & CABLE CO.,LTD E84081(S)		
		TRW(B) 130 °C	GREAT LEOFLON INDUSTRIAL CO LTD E211989		
4.	INSULATION TAPE	POLYESTER #1350 TAPE 130°C NO.371F	MINNESO TAMINING& MFG 3M CENTER E17385(N) BONDTEC PACIFEC CO.,LTD E175868		
5.	VARNISH	V-1380FC 180°C	P D GEORGE / VIKING E73071		
6.	MARGIN TAPE	COMPOSITE FILM NO.44 130°C	MINNESOTAMINING& MFG 3M CENTER E17385(N)		
		NO.201-45 130°C	BONDTEC PACIFEC CO., LTD E175868		
7.	TUBE	TFL	GREAT HOLDING INDUSTRIES CO.,LTD E156256		
8.	SHLELD	COPPER FOIL	OPTION		
REPORTED BY	CHECKED BY	SUPERVISED BY	APPROVED BY	3.	
熊 晨	侯周梅	曹志宏	范揚昇	2.	
				REV 1.	

YOUNG-SHANG ELECTRONIC PLANT.

TEL:0752—6663113

揚 尙 電 子 廠

樣 品 檢 驗 報 表

料號: XF00249				日期: 2005/1/30			
品名: EE16				客戶: 英格爾			
批量數: 100 PCS				使用儀器: CH1061 CH502AC 9071			
試樣通知單編號:							
測試條件: 1KHZ 0.25V				濕度: 49 % 溫度: 23 °C			
項 目	L1-3	R1-3	R 6-10	R 2-4		HI-POT P-S	HI-POT P,S-C
規 範	3.75mH ± 10%	8.7Ω MAX	233mΩ MAX	3.3Ω MAX		3.0KV 5mA 60sec	1.5KV 5mA 60sec
1	3.79	5.7	154.9	2.1		OK	OK
2	3.71	5.7	154.9	2.1		OK	OK
3	3.74	5.7	154.9	2.1		OK	OK
4	3.69	5.7	154.9	2.1		OK	OK
5	3.73	5.7	154.9	2.1		OK	OK
6	3.74	5.7	154.9	2.1		OK	OK
7	3.70	5.7	154.9	2.1		OK	OK
8	3.76	5.7	154.9	2.1		OK	OK
9	3.72	5.7	154.9	2.1		OK	OK
10	3.72	5.7	154.9	2.1		OK	OK
X							
R							
外 觀 尺 寸							
項 目	鐵芯材質	A m/m	B m/m	C m/m	D m/m	F m/m	G m/m
規 範	EE16	17.0 MAX	15.0 MAX	3.2 ± 0.2	19.5 MAX	3.25 ± 0.5	15.5 ± 0.5
實 測	SP40	16.5	14.49	3.1	19.04	3.25	15.5
核 準		主 管		檢 驗 者		備注:	
范揚昇		曹志宏		侯周梅			

QR-GC002R01

OBJY2

January 17, 2002

Systems, Electrical Insulation - Component

YANN SHNN CO

E215086

**161 CHANG NING RD CHANGNING TOWN BOLUO, HNIZHOU
GUANGDONG CHINA**

Class 130 (B) insulation system, designated YS-130-1, maximum 600 V.

Marking: Company name and system designation.

See General Information Preceding These Recognitions

**For use only in equipment where the acceptability of the combination is determined by
Underwriters Laboratories Inc.**

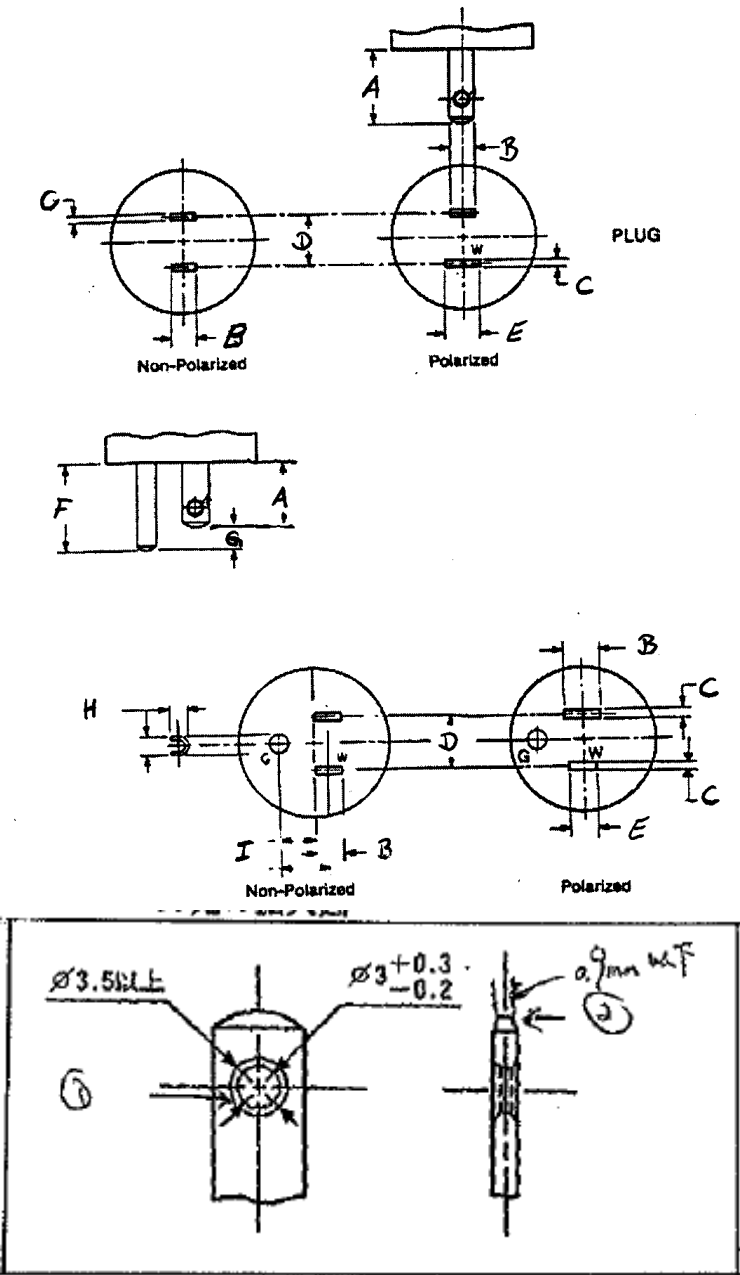
1/28/2002

Underwriters Laboratories Inc.

Card 1 of 1

Enclosure No. 4
**Construction data and measurement of plug
in power supply connector**

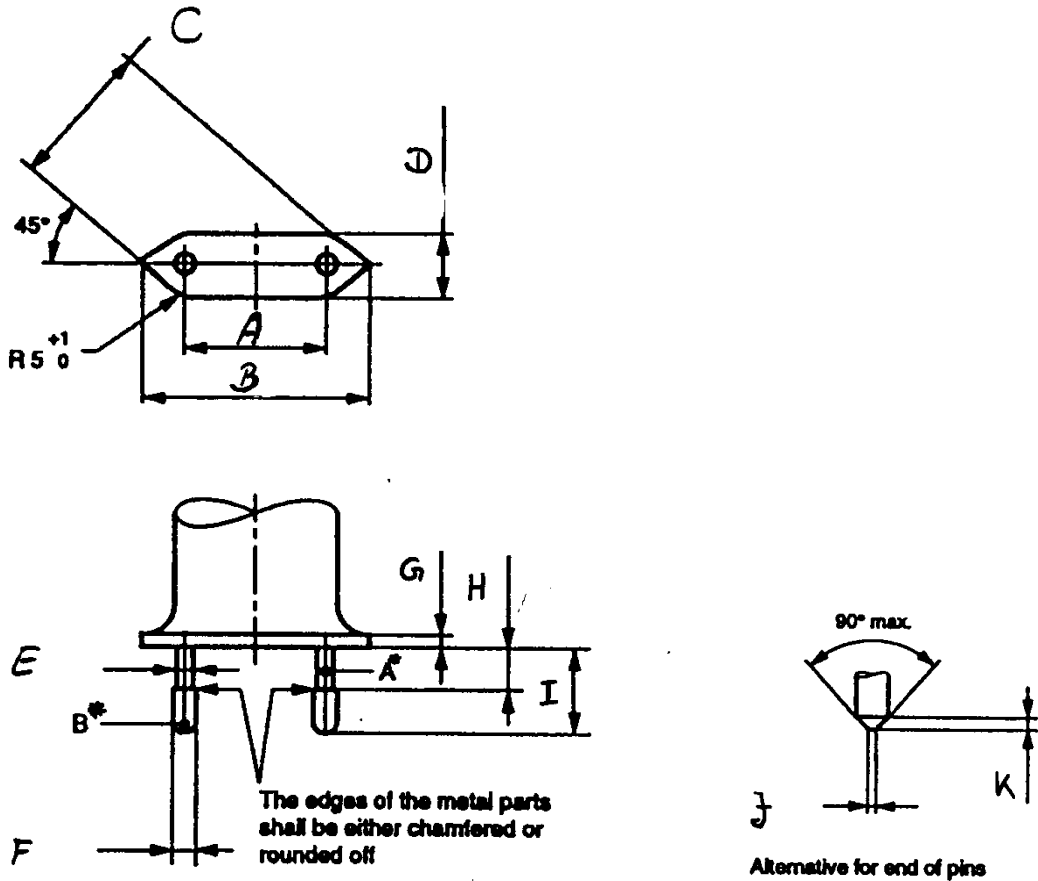
UL1310		TABLE: blade dimensions					P
Reference	Measured (mm)	Limits (mm)	verdict	Reference	Measured (mm)	Limits (mm)	verdict
A	17,0	15,88 - 18,24	P	F	--	21,41 max.	N/A
B	6,29	6,10 - 6,60	P	G	--	3,18 min.	N/A
C	1,57	1,57	P	H	--	4,67 - 4,83	N/A
D	12,7	12,70	P	I	--	8,71 - 8,89	N/A
E	--	7,70 - 8,18	N/A	(2)	--	0,9	N/A



The hole is 3mm +0,3/-0,2 ID and 3,5mmOD

EN50075	TABLE: blade dimensions						P
Reference	Measured (mm)	Limits (mm)	verdict	Reference	Measured (mm)	Limits (mm)	verdict
A	19,2 17,2	18 - 19,2 ¹ 17,0 - 18,0 ²	P	G	--	4,0 min.	N/A
B	35,3	35,3 ± 0,7	P	H	10,1	10,0 - 10,1	P
C	26,3	26,1 ± 0,5	P	I	19,05	19,0 ± 0,5	P
D	13,2	13,7 ± 0,7	P	J	1,02	0,7 - 1,7 OD	P
E	3,6	3,8 max. OD	P	K	2,0	2,0 max.	P
F	4,0	4 ± 0,06 max. OD	P				

¹ In the plane of the engagement face
² at the ends of pins



A* insulating collar
B* metal pin

BS1363	TABLE: blade dimensions						P
Reference	Measured (mm)	Limits (mm)	verdict	Reference	Measured (mm)	Limits (mm)	verdict
A	25,02	25,37 max.	P	K	3,93	3,90 - 4,05	P
B	11,1	11,05 - 11,18	P	L	1,58	1,2 - 2,0	P
C	30,9	34,6 max.	P	M	1,85	1,35 - 1,85	P
D	22,2	22,10 - 22,36	P	N	6,37	6,22 - 6,48	P
E	22,9	22,23 - 23,23	P	r1	24	15 min.	P
F	1,83	1,35 - 1,85	P	r2	14	9,5 min.	P
G	7,96	7,80 - 8,05	P	r3	14	9,5 min.	P
H	17,9	17,2 - 18,2	P	r4	0,9	0,1 - 1,0	P
I	9,07	9,5 max.	P	a1	60	58° - 62°	P
J	9,07	9,2 max.	P	a2	70	60° - 80°	P

