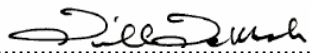


TEST REPORT

IEC 60950-1 and/or EN 60950-1, First Edition
Information technology equipment – Safety –
Part 1: General requirements

Report reference No. : 02173691.003

Tested by
(printed name and signature) : Bill Bekdash

Approved by
(printed name and signature) : Dan Sullivan


Date of issue : 2-14-2005

Testing Laboratory Name : TUV Rheinland of North America, Inc.

Address : 12 Commerce Road, Newtown, CT 06470

Testing location : CBTL ☒ CCATL ☐ SMT ☐ TMP ☐Address : TUV Rheinland of North America, Inc.
12 Commerce Road, Newtown, CT 06470**Applicant's Name** : GlobTek, Inc.

Address : 186 Veterans Dr., Northvale, NJ 07647 / USA

Test specificationStandard : IEC 60950-1:2001 and/or
EN 60950-1:2001, First EditionTest procedure : **CB/CCA –scheme**

Non-standard test method : N.A

Test Report Form No. : IECEN60950_1A

TRF originator : SGS Fimko Ltd

Master TRF : Dated 2002-03

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Test item description	Power Adapter
Trademark	GlobTek Inc.
Manufacturer	Same as applicant
Factory	1. GlobTek, Inc. 186 Veterans Dr., Northvale, NJ 07647 / USA
Model and/or type reference	1) GT-21126-XY-X.X 2) GT-21097-XY-X.X X could be 60 (GT-21126 models only), 50, 48, 45, 40, 36, 30, 27 or 20 Y could be 24, 22, 20, 19, 18, 16, 15, 14, 13, 12 or 09. X.X : Optional for specifying output voltages deviations from standard model: subtracting X.X volts from standard output voltage (see product summary for details).
Serial number	-
Rating(s)	Input: 100-240 V, 47-63HZ, 1.6A Output: GT-21097-2003 +3.3VDC@0-6.0A GT-21097-3005-X.X +5.3VDC@0-6.0A GT-21097-4509-X.X +9.0VDC@0-5.0A GT-21097-5012-X.X +12VDC@0-4.17A GT-21097-5015-X.X +15VDC@0-3.3A GT-21097-5018-X.X +18VDC@0-2.8A GT-21097-5024-X.X +24VDC@0-2.1A GT-21097-5048-X.X +48VDC@0-1.1A GT-21126-6012 +12VDC@0-6.0A GT-21126-6024-9.0 +15VDC@0-4.0A GT-21126-6024-6.0 +18VDC@0-3.33A GT-21126-6024-5.0 +19VDC@0-3.15A GT-21126-6024-4.0 +20.0VDC@0-3.0A GT-21126-6024-2.0 +22.0VDC@0-2.73A GT-21126-6024 +24.0VDC@0-2.5A <ul style="list-style-type: none"> o Each output current can vary up to its maximum rated current provided the rated output power is not exceeded. o @ Watts rating for informational purposes only. May or may not be provided on label. o For GT-21097-series, Single output units are available with output voltages of 3.3 Vdc to 48 Vdc in 0.1 V increments. o For GT-21126-series, Single output units are available with output voltages of 3.3 Vdc to 48 Vdc in 0.1 V increments.

Particulars: test item vs. test requirements

Equipment mobility: movable ☒ / hand-held ☐ / stationary ☐ / fixed ☐ / permanent connection ☐ / direct plug-in ☐ / for building-in ☐

Operating condition.....: continuous ☒ / short-time ☐ / intermittent ☐

Mains supply tolerance (%): AC Unit: +6%/-10%

Tested for IT power systems: Yes ☐ / No ☒

IT testing, phase-phase voltage (V) : N.A.

Class of equipment: Class I ☒ / Class II ☐ / Class III ☐

Mass of equipment (kg): <2Kg

Protection against ingress of water: IPX0

Test case verdicts

Test case does not apply to the test object : N/A

Test item does meet the requirement: P(ass)

Test item does not meet the requirement: F(ail)

Testing

Date of receipt of test item: 9/1998

Date(s) of performance of test: 10/1999

General remarks

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

The test result presented in this report relate only to the object(s) 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.

Throughout this report a comma (point) is used as the decimal separator.

The following group and/or national deviations were considered:

The following group and/or national deviations were considered: AR(Argentina), AT(Austria), AU (Australia), BE(Belgium), CH(Switzerland), CN (China), DE(Germany), DK(Denmark), FI(Finland), GB(United Kingdom), IL(Israel), KR(Korea), MY (Malaysia), NL(Netherlands), NO(Norway), NZ (New Zealand), PL(Poland), SE(Sweden), SI(Slovenia), US(United States)

This report was issued to address the upgrade/delta from the previous standard IEC 60 950:1991+ A1:1992+A2:1993+A3:1995+A4:1996/ EN 60 950:1992+ A1:1993+A2:1993+A3:1995+A4:1997+A11:1997 to IEC 60950-1:2001/EN 60950-1:2001, First Edition. No testing was performed for this upgrade as the previous test results and data were extracted from the previous test reports.

Report History:

- This CB report 02173691.003 is based on the following reports:
 1. TUV Rheinland NA Report number: E2173691.002
 2. TUV Rheinland Japan Report number: E9961071 E01
 3. TUV Rheinland Taiwan Report numbers: E9864982 E01, E9864982, E9864982 Z03, E9864982 Z04
- All test data and measurements provided in this report were extracted from the above mentioned reports
- This CB report 02173691.003 covers the standard up-date to IEC 60950-1:2001. No additional testing was completed for this upgrade.
-

Product Summary

- The equipment models GT-21126-XY-X.X and GT-21097-XY-X.X are series of external type switching power supply adapter (desk top type) for DC supply information technology equipment (scanner, notebook, PC, etc.).
- Model extensions are as follow:
 - 1) XY (output power ratings): could be 60 (model GT-21126 only), 50, 48, 45, 40, 36, 30, 27 or 20
 - 2) XY (output voltage ratings): could be 24, 22, 20, 19, 18, 16, 15, 14, 13, 12 or 09
 - 3) Each output current can vary within its designation range, as long as the output power is not exceeded.
 - 4) Single output units range from 3.3 V up to 48 V in 0.1 increments
 - 5) X.X: Optional for specifying output voltages deviations from standard model: subtracting X.X volts from standard output voltage.
 - 6) @ Watts rating for informational purposes only. May or may not be provided on label.
- The equipment models GT-21126-XY-X.X and GT-21097-XY-X.X are similar in input and output ratings, except for bleeding resistors (R11 and R 16), Transformer (T1) and PCB. Refer to the critical list for details.
- All models are similar to each other except for the model name, output ratings, transformer T1, Ripple capacitor C22 and components in the secondary circuits.
- The adapter's top enclosure is secured to bottom enclosure by ultrasonic welding.
- The adapter series are also tested as limited power source (see report and data for details)
- Refer to the above mentioned reports for product deviations and updates.

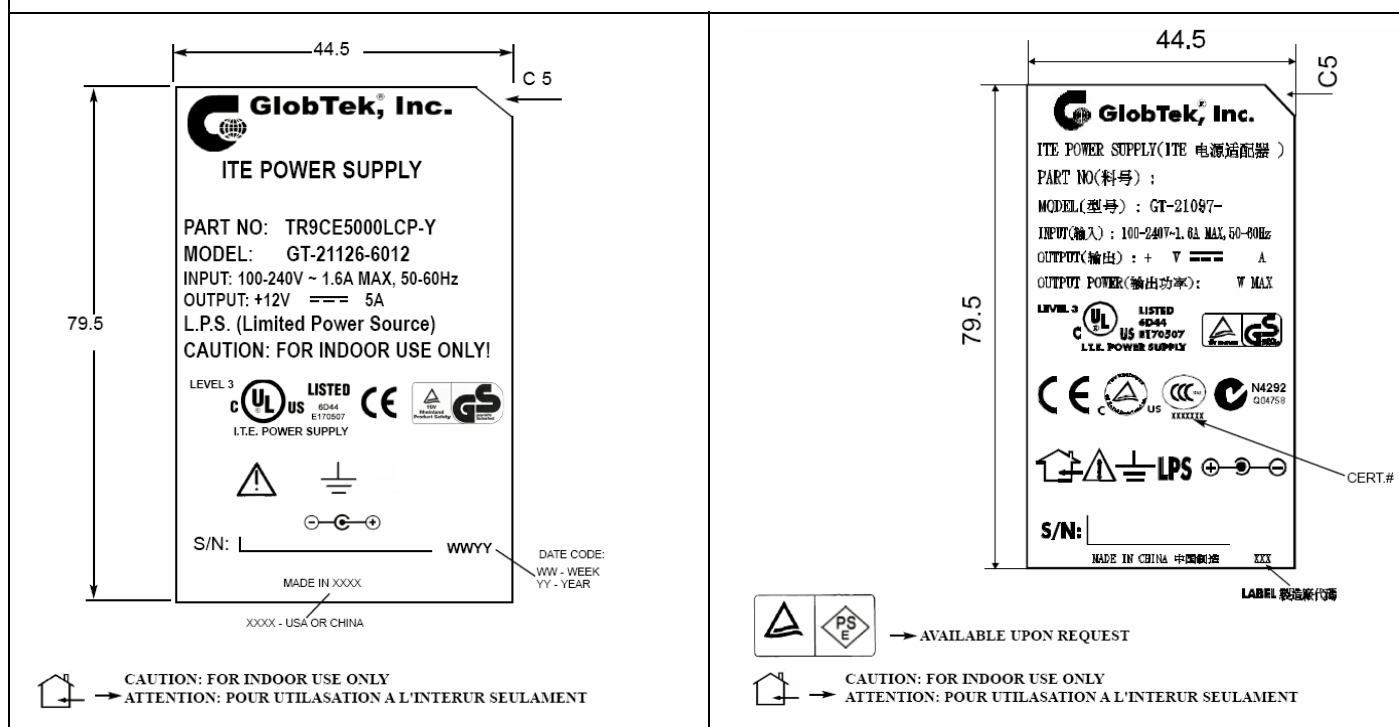
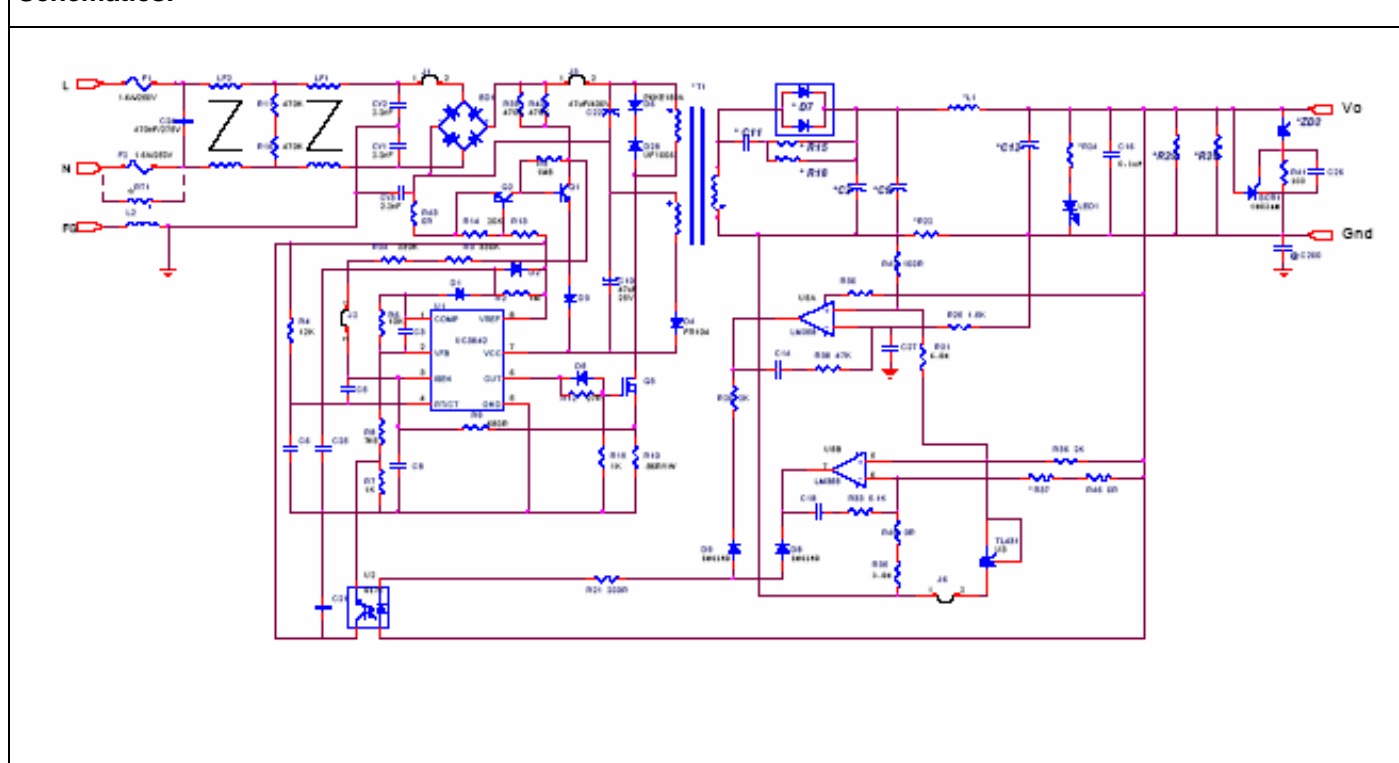
Copy of marking plate and summary of test results (information/comments):

- Test results and data were extracted from Reports Reference E9864982 E01, E9864982, E9864982 Z03, and E9864982 Z04.
- Test data in this report refers testing for model numbers SYS 1097-XY and SYS 1126-XY. These model numbers are exactly identical to GlobTek's model numbers GT-21097-XY and GT-21126-XY. The only difference is the model number initial letters abbreviations (SYS versus GT2).

The Following Abbreviations were considered:

- pri.: primary
- sec. : secondary
- gnd. : ground
- PE: protective earth
- SWPS: Switching power supply
- HV : high voltage
- *) : covered by the power supply certification

Label:

**Schematics:**

Pictures



IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	General	Approved components used	P
	Comply with IEC 60950 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components	All safety critical components are certified. All components are used within their rating, plastic materials, PCBs and wiring material are UL listed, non-certified components were tested according this standard	P
1.5.3	Thermal controls	None provided	N
1.5.4	Transformers	According to Annex C	P
1.5.5	Interconnecting cables	Interconnection o/p cable to other device is carrying only SELV voltages on an energy level below 240VA. Except the insulation material, there are no further requirements to the o/p interconnection cable	P
1.5.6	Capacitors in primary circuits	All X capacitors are certified X2 (see component list)	P
1.5.7	Double insulation or reinforced insulation bridged by components	Approved Components	P
1.5.7.1	General	No such components	N
1.5.7.2	Bridging capacitors	No such components	N
1.5.7.3	Bridging resistors	No such components	N
1.5.7.4	Accessible parts	No accessible hazardous part (see conditions of accessibility)	P
1.5.8	Components in equipment for IT power systems	Not for IT system	N
1.6	Power interface		P
1.6.1	AC power distribution systems	TN Power Systems	P
1.6.2	Input current	(See appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	Not hand-held equipment	N
1.6.4	Neutral conductor	Neutral conductor is not identified in the equipment. Basic insulation for rated voltage between earthed parts and primary phases	P

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1.7	Marking and instructions		P
1.7.1	Power rating	Provided on the rating label	P
	Rated voltage(s) or voltage range(s) (V)	AC unit: 100-240VAC	P
	Symbol for nature of supply, for d.c. only	AC symbol used “~”	P
	Rated frequency or rated frequency range (Hz) :	47-63HZ	P
	Rated current (mA or A)	1.6 Amps	P
	Manufacturer's name or trademark or identification mark	GlobTek Inc.	P
	Type/model or type reference	1. GT-21126-XY-X.X 2. GT-21097-XY-X.X (see page 2 for details)	P
	Symbol for Class II equipment only	Class I	P
	Other symbols	None	N
	Certification marks	CB Scheme, GS, UL, CSA	P
1.7.2	Safety instructions	Checked in English, must be in country specification language. Adequate instructions provided.	P
1.7.3	Short duty cycles	Continuous	N
1.7.4	Supply voltage adjustment	Auto ranging supply	P
1.7.5	Power outlets on the equipment	Not used	N
1.7.6	Fuse identification	F1 used as designator. F1 = T1.6A/250V	P
1.7.7	Wiring terminals	Complies	P
1.7.7.1	Protective earthing and bonding terminals	Appliance Inlet used	N
1.7.7.2	Terminal for a.c. mains supply conductors	Approved Appliance Inlet used	P
1.7.7.3	Terminals for d.c. mains supply conductors	Not a DC power supply	N
1.7.8	Controls and indicators	No switches or controls	N
1.7.8.1	Identification, location and marking	Only green LED used for normal operation	P
1.7.8.2	Colours	No switches	N
1.7.8.3	Symbols according to IEC 60417	No switches	N
1.7.8.4	Markings using figures	No controls	N
1.7.9	Isolation of multiple power sources	Determined by end-use	N
1.7.10	IT power distribution systems	Not for IT power system	N
1.7.11	Thermostats and other regulating devices	None	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1.7.12	Language	English evaluated, safety instruction must be in country specific language	—
1.7.13	Durability	Passed rub test	P
1.7.14	Removable parts	No markings placed on removable parts	P
1.7.15	Replaceable batteries	None provided	N
	Language.....	English	—
1.7.16	Operator access with a tool.....	End-use customer is responsible	N
1.7.17	Equipment for restricted access locations	Not for restricted access location	N

2	PROTECTION FROM HAZARDS	P
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2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	No Access with test finger to any parts with only basic insulation to ELV or hazardous voltages. Power adapter is sealed	P
2.1.1.1	Access to energized parts	(see above)	P
	Test by inspection	(see above)	P
	Test with test finger	(see above)	P
	Test with test pin	(see above)	P
	Test with test probe	(see above)	P
2.1.1.2	Battery compartments	No batteries provided	N
2.1.1.3	Access to ELV wiring	No ELV circuits	N
	Working voltage (V); minimum distance (mm) through insulation	No ELV circuits provided	—
2.1.1.4	Access to hazardous voltage circuit wiring	See clause 2.1.1	P
2.1.1.5	Energy hazards	Energy level is below 240 VA. See table 2.1.15 for details.	P
2.1.1.6	Manual controls	No manual controls	N
2.1.1.7	Discharge of capacitors in equipment	No Hazard. No mains switch.	P
	Time-constant (s); measured voltage (V).....	0V measured at 1.1 sec.	—
2.1.2	Protection in service access areas	No service access area	N
2.1.3	Protection in restricted access locations	Unit is not intended to be used in restricted locations	N

2.2	SELV circuits	N
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IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.2.1	General requirements	Insulation established through creepage and clearance distances as well as the insulation at the optocoupler (U2) and the layers in transformers	P
2.2.2	Voltages under normal conditions (V)	24V max.	P
2.2.3	Voltages under fault conditions (V)	<42.4VAC or 60VDC even under fault tests.	P
2.2.3.1	Separation by double insulation or reinforced insulation (method 1)	Method 1 used	P
2.2.3.2	Separation by earthed screen (method 2)	(see above)	N
2.2.3.3	Protection by earthing of the SELV circuit (method 3)	Not used	N
2.2.4	Connection of SELV circuits to other circuits	Only SELV type interfaces.	N

2.3	TNV circuits		N
2.3.1	Limits	No TNV circuits	N
	Type of TNV circuits	No TNV circuits	—
2.3.2	Separation from other circuits and from accessible parts	No TNV circuits	N
	Insulation employed	No TNV circuits	—
2.3.3	Separation from hazardous voltages	No TNV circuits	N
	Insulation employed	No TNV circuits	—
2.3.4	Connection of TNV circuits to other circuits	No TNV circuits	N
	Insulation employed	No TNV circuits	—
2.3.5	Test for operating voltages generated externally	No TNV circuits	N

2.4	Limited current circuits		N
2.4.1	General requirements	No limited current circuits	N
2.4.2	Limit values	No limited current circuits	N
	Frequency (Hz)	No limited current circuits	—
	Measured current (mA)	No limited current circuits	—
	Measured voltage (V)	No limited current circuits	—
	Measured capacitance (μF)	No limited current circuits	—
2.4.3	Connection of limited current circuits to other circuits	No limited current circuits	N

2.5	Limited power sources		P
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IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Inherently limited output	Not inherently limited output	N
	Impedance limited output	None provided	N
	Overcurrent protective device limited output	No overvoltage device provided	N
	Regulating network limited output under normal operating and single fault condition	Circuit tested (see table for details)	P
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition	No overcurrent protective device provided	N
	Output voltage (V), output current (A), apparent power (VA)..... :	(see table 2.5 for detail)	—
	Current rating of overcurrent protective device (A)	(see table 2.5 for detail)	—

2.6	Provisions for earthing and bonding	P
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2.6.1	Protective earthing	Green Yellow wire provided. Properly secured.	P
2.6.2	Functional earthing	None	P
2.6.3	Protective earthing and protective bonding conductors	Tested according to 2.6.3.3	P
2.6.3.1	General	This unit has its own earthing connection. Any other units connected via the interconnecting cable o other unit shall provide SELV only. The equipment does not compromise class I and class II	P
2.6.3.2	Size of protective earthing conductors	1015# 18 used	P
	Rated current (A), cross-sectional area (mm ²), AWG	Tested according to 2.6.3.3	—
2.6.3.3	Size of protective bonding conductors	Tested according to 2.6.3.4	P
	Rated current (A), cross-sectional area (mm ²), AWG	# 18 used	—
2.6.3.4	Resistance (Ω) of earthing conductors and their terminations, test current (A)	Max. 0.087 Ω measured between AC inlet ground pin to output cable. Tested at 25A.	P
2.6.3.5	Colour of insulation.....	Green-yellow wire.	N

2.6.4	Terminals	Ground terminal	P
2.6.4.1	General	Green/Yellow wire from inlet to PCB	P
2.6.4.2	Protective earthing and bonding terminals	Green/Yellow wire to PCB reliably fixed with mechanical crimp pin and soldering	P

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Rated current (A), type and nominal thread diameter (mm)	# 18 ground wire. Soldered connection	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	Separate terminals	P
2.6.5	Integrity of protective earthing	Properly secured-Not interconnected	N
2.6.5.1	Interconnection of equipment	Not interconnected. SELV connections only	N
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No components in the earthing circuit	P
2.6.5.3	Disconnection of protective earth	It is not necessary to disconnect earthing except for the moving of the earthed parts	P
2.6.5.4	Parts that can be removed by an operator	No operator removable parts	N
2.6.5.5	Parts removed during servicing	No servicing parts.	N
2.6.5.6	Corrosion resistance	Complies with Annex J	P
2.6.5.7	Screws for protective bonding	Not used	N
2.6.5.8	Reliance on telecommunication network or cable distribution system	No TNV circuits	N

2.7	Overcurrent and earth fault protection in primary circuits		P
2.7.1	Basic requirements	Equipment relies on 1.6 A rated fuse or circuit breaker of the wall outlets installation protection of the building installation in regards to L and N short circuit. Over current protection is provided by the built in device fuse.	P
	Instructions when protection relies on building installation	Movable supply.	N
2.7.2	Faults not covered in 5.3	The protection devices are well dimensioned and mounted. Single faults are covered	N
2.7.3	Short-circuit backup protection	Pluggable equipment type A the building installation is considered as providing short circuit protection	N
2.7.4	Number and location of protective devices	Short current protection by fuses (F1 T1.6A, 250V)	P
2.7.5	Protection by several devices	Fuse is single component	N
2.7.6	Warning to service personnel.....	No service	N

2.8	Safety interlocks	N
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IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.8.1	General principles	No safety interlocks	N
2.8.2	Protection requirements	No safety interlocks	N
2.8.3	Inadvertent reactivation	No safety interlocks	N
2.8.4	Fail-safe operation	No safety interlocks	N
2.8.5	Moving parts	No safety interlocks	N
2.8.6	Overriding	No safety interlocks	N
2.8.7	Switches and relays	No safety interlocks	N
2.8.7.1	Contact gaps (mm)	No safety interlocks	N
2.8.7.2	Overload test	No safety interlocks	N
2.8.7.3	Endurance test	No safety interlocks	N
2.8.7.4	Electric strength test	No safety interlocks	N
2.8.8	Mechanical actuators	No safety Interlocks	N

2.9	Electrical insulation		P
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used	P
2.9.2	Humidity conditioning	Total time elapsed: 48 Hours	P
	Humidity (%)	93 % R.H. Complies with heating tests of 4.5.1, electric strength tests of 5.2, and electrical spacing of 2.10	—
	Temperature (°C)	25°C	—
2.9.3	Grade of insulation	The insulation materials provided in the equipment with adequate thickness and adequate creepage distance over their surfaces and clearance distances through air	P

2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General	Overvoltage Category II, Pollution Degree 2 considered	P
2.10.2	Determination of working voltage	Actual working voltage but not less than supply voltage of 240V and 60 VDC	P
2.10.3	Clearances	Complies	P
2.10.3.1	General	Overvoltage Category II	P
2.10.3.2	Clearances in primary circuit	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.3	Clearances in secondary circuits	(see appended table 2.10.3 and 2.10.4)	P

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.10.3.4	Measurement of transient voltage levels	Not Applied	N
2.10.4	Creepage distances	(see appended table 2.10.3 and 2.10.4)	P
	CTI tests	IIIa/b assumed (rated at 100 minimum)	—
2.10.5	Solid insulation	Complies	P
2.10.5.1	Minimum distance through insulation	(see appended table 2.10.5)	P
2.10.5.2	Thin sheet material	(see appendix C)	P
	Number of layers (pcs)		—
	Electric strength test	(see appended table 5.2)	—
2.10.5.3	Printed boards	SELV circuits not used for supplementary or reinforced insulation	N
	Distance through insulation		N
	Electric strength test for thin sheet insulating material	(see appended table 5.2)	—
	Number of layers (pcs)		N
2.10.5.4	Wound components	Triple insulated wire in for secondary winding of T1.	P
	Number of layers (pcs)	Wires have triple insulation (3 layers)	P
	Two wires in contact inside wound component; angle between 45° and 90°	No wires are connected at such angles	N
2.10.6	Coated printed boards	No Coated printed boards	N
2.10.6.1	General	No Coated printed boards	N
2.10.6.2	Sample preparation and preliminary inspection	No Coated printed boards	N
2.10.6.3	Thermal cycling	No Coated printed boards	N
2.10.6.4	Thermal ageing (°C)	No Coated printed boards	N
2.10.6.5	Electric strength test	(see appended table 5.2)	—
2.10.6.6	Abrasion resistance test	No Coated printed boards	N
	Electric strength test	(see appended table 5.2)	—
2.10.7	Enclosed and sealed parts	No hermetically sealed components used	N
	Temperature $T_1=T_2 = T_{ma} - T_{amb} + 10K$ (°C)	No hermetically sealed components used	N
2.10.8	Spacings filled by insulating compound	Certified Opto Couples (U2) is used	P
	Electric strength test	(see appended table 5.2)	—
2.10.9	Component external terminations	None provided	N
2.10.10	Insulation with varying dimensions	No insulation with varying dimensions used	N

3	WIRING, CONNECTIONS AND SUPPLY	P
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IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict

3.1	General		P
3.1.1	Current rating and overcurrent protection	Sufficiently rated wiring used. All wires are UL recognized wiring that is PVC insulated, rated VW-1, min. 80 °C, 300v. Internal wiring gauge is suitable for the current intended to be carrying.	P
3.1.2	Protection against mechanical damage	Wires are clamped and routed to avoid exposure to mechanical or thermal stress.	P
3.1.3	Securing of internal wiring	All wires are adequately secured	P
3.1.4	Insulation of conductors	UL listed wires	P
3.1.5	Beads and ceramic insulators	No beads or insulators used	N
3.1.6	Screws for electrical contact pressure	No Screws of insulating materials	P
3.1.7	Insulating materials in electrical connections	Not transmitted through insulating materials	P
3.1.8	Self-tapping and spaced thread screws	Not used for current carrying parts	P
3.1.9	Termination of conductors	Certified insulated connectors/terminals used	P
	10 N pull test	Electrical spacings cannot be reduced below values of 2.10. Cannot contact ungrounded metal	P
3.1.10	Sleeving on wiring	None	N

3.2	Connection to an a.c. mains supply or a d.c. mains supply		P
3.2.1	Means of connection	Appliance inlet	P
3.2.1.1	Connection to an a.c. mains supply	Via power cord. Power cord is not supplied with the unit.	N
3.2.1.2	Connection to a d.c. mains supply	Not a DC supply source	N
3.2.2	Multiple supply connections	Single connection	N
3.2.3	Permanently connected equipment	Not permanently connected	N
	Number of conductors, diameter (mm) of cable and conduits		—
3.2.4	Appliance inlets	The appliance compliance with IEC 60320. The power cord can be inserted without difficulties and does not support the unit	P
3.2.5	Power supply cords	Power cord is not evaluated nor supplied with the unit. However, selection of power cord (0.75mm ²) is mentioned in the user manual	N
3.2.5.1	AC power supply cords	(see above)	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Type.....:	(see above)	-
	Rated current (A), cross-sectional area (mm ²), AWG.....:	(see above)	-
3.2.5.2	DC power supply cords	(see above)	N
3.2.6	Cord anchorages and strain relief	(see above)	N
	Mass of equipment (kg), pull (N)	(see above)	-
	Longitudinal displacement (mm)	(see above)	-
3.2.7	Protection against mechanical damage	(see above)	N
3.2.8	Cord guards	(see above)	N
	D (mm); test mass (g)	(see above)	-
	Radius of curvature of cord (mm).....:	(see above)	-
3.2.9	Supply wiring space	Equipment not for permanent connection, no non-detachable power supply cord provided	N

3.3	Wiring terminals for connection of external conductors		N
3.3.1	Wiring terminals	No wiring terminals provided for connection of external primary power supply	N
3.3.2	Connection of non-detachable power supply cords	No special non-detachable power supply cord provided	N
3.3.3	Screw terminals	No screws and nuts for clamping external conductors used	N
3.3.4	Conductor sizes to be connected	No power cord provided	N
	Rated current (A), cord/cable type, cross-sectional area (mm ²)	See above	—
3.3.5	Wiring terminal sizes	No terminals used	N
	Rated current (A), type and nominal thread diameter (mm)		—
3.3.6	Wiring terminals design	No terminals used	N
3.3.7	Grouping of wiring terminals		N
3.3.8	Stranded wire		N

3.4	Disconnection from the mains supply		P
3.4.1	General requirement	The unit's appliance inlet is considered to be the disconnect device	P
3.4.2	Disconnect devices	Appliance inlet	P
3.4.3	Permanently connected equipment	The power adapter is not a permanently connected equipment	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3.4.4	Parts which remain energized	No parts remain energized after disconnection	P
3.4.5	Switches in flexible cords	No switches, no flexible cords	N
3.4.6	Single-phase equipment and d.c. equipment	End-use equipment relied upon	N
3.4.7	Three-phase equipment	Equipment is single-phase only	N
3.4.8	Switches as disconnect devices	No switch used	N
3.4.9	Plugs as disconnect devices	Appliance inlet/Detachable power supply cord is the disconnect device	P
3.4.10	Interconnected equipment	Interconnection to other devices by secondary output cable only	N
3.4.11	Multiple power sources	Single power source	N

3.5	Interconnection of equipment		P
3.5.1	General requirements	SELV connections only	P
3.5.2	Types of interconnection circuits.....	Interconnection circuits of SELV through sec o/p cable.	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection	N

4	PHYSICAL REQUIREMENTS		P
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4.1	Stability		P
	Angle of 10°	Length and width by far exceed height	P
	Test: force (N).....	Not floor standing	N

4.2	Mechanical strength		P
4.2.1	General	(see below)	P
4.2.2	Steady force test, 10 N	No Hazard	P
4.2.3	Steady force test, 30 N	No internal enclosures	N
4.2.4	Steady force test, 250 N	250 N applied to outer enclosure. No energy or other hazards	N
4.2.5	Impact test	No hazard as result from steel sphere ball fall test	N
	Fall test	No hazard as result from steel sphere ball fall test	P

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Swing test	No hazard as result from steel sphere ball test	P
4.2.6	Drop test	Not hand held	N
4.2.7	Stress relief test	After 7 hours at 75°C and cooling down to room temperature, no shrinkage, distortion, or losing any enclosure part was noticeable on the adaptor. The test was done for all sources of enclosure material	P
4.2.8	Cathode ray tubes	No cathode ray tubes used	N
	Picture tube separately certified	None	N
4.2.9	High pressure lamps	Non provided	N
4.2.10	Wall or ceiling mounted equipment; force (N) ...	Not A wall mount	N

4.3	Design and construction		P
4.3.1	Edges and corners	No sharp edges or similar hazards	P
4.3.2	Handles and manual controls; force (N)	No Handles	N
4.3.3	Adjustable controls	None provided	N
4.3.4	Securing of parts	Screws, wires and the like are adequately fixed	N
4.3.5	Connection of plugs and sockets	Appliance inlet used	N
4.3.6	Direct plug-in equipment	Not a Direct Plug In	N
	Dimensions (mm) of mains plug for direct plug-in	Not a Direct Plug In	N
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N).....	Not a Direct Plug In	N
4.3.7	Heating elements in earthed equipment	No heating elements	N
4.3.8	Batteries	No Batteries used	N
4.3.9	Oil and grease	None used	N
4.3.10	Dust, powders, liquids and gases	None Provided	N
4.3.11	Containers for liquids or gases	None used	N
4.3.12	Flammable liquids	None Provided	N
	Quantity of liquid (l)	No Flammable liquids used	N
	Flash point (°C)	No Flammable liquids used	N
4.3.13	Radiation; type of radiation	None Provided	N
4.3.13.1	General	No such hazards	N
4.3.13.2	Ionizing radiation	None Provided	N
	Measured radiation (pA/kg)	None used	—

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Measured high-voltage (kV)	None Provided	—
	Measured focus voltage (kV)	None Provided	—
	CRT markings	None Provided	—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	None Provided	N
	Part, property, retention after test, flammability classification	None Provided	N
4.3.13.4	Human exposure to ultraviolet (UV) radiation	None Provided	N
4.3.13.5	Laser (including LEDs)	No Laser	N
	Laser class	No laser provided or used. The provided LED ratings are below class 1 limits of IEC/EN 60825-1 (far less than 1 mW)	—
4.3.13.6	Other types	None provided	N

4.4	Protection against hazardous moving parts		N
4.4.1	General	No moving parts used	N
4.4.2	Protection in operator access areas	No moving parts used	N
4.4.3	Protection in restricted access locations	No moving parts used	N
4.4.4	Protection in service access areas	No moving parts used	N

4.5	Thermal requirements		P
4.5.1	Maximum temperatures	(see appended table 4.5)	P
	Normal load condition per Annex L	According to most unfavorable normal use condition	P
4.5.2	Resistance to abnormal heat	Components used are either certified or tested	P

4.6	Openings in enclosures		N
4.6.1	Top and side openings	No openings in the enclosure	N
	Dimensions (mm)	(see above)	-
4.6.2	Bottoms of fire enclosures	(see above)	N
	Construction of the bottom	(see above)	-
4.6.3	Doors or covers in fire enclosures	No doors	N
4.6.4	Openings in transportable equipment	No openings in the enclosure	N
4.6.5	Adhesives for constructional purposes	None provided	N
	Conditioning temperature (°C)/time (weeks).....	(see above)	—

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	Electrical parts are not likely to ignite nearby materials. Parts not protected against overheating under fault conditions	P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	N
	Method 2, application of all of simulated fault condition tests	(see appended table 5.3)	N
4.7.2	Conditions for a fire enclosure	Protection against emission of flame, molten metal, flaming or glowing particles or drops by fire enclosure. With having the following components: <ul style="list-style-type: none"> • Components with winding • Wiring • Semiconductor devices, transistors, diodes, integrated circuits • Resistors, capacitors, inductors The fire enclosure is required	P
4.7.2.1	Parts requiring a fire enclosure	(see above)	P
4.7.2.2	Parts not requiring a fire enclosure	None	N

4.7.3	Materials		P
4.7.3.1	General	Internal components except small parts are V-2, HF-2 or better Insulating material consist of PVC Enclosure of the unit with flammability class V-1 or better	P
4.7.3.2	Materials for fire enclosures	(see above)	P
4.7.3.3	Materials for components and other parts outside fire enclosures	(see above)	P
4.7.3.4	Materials for components and other parts inside fire enclosures	PWBs are V-1 min., other materials and components are V-2 or better.	P
4.7.3.5	Materials for air filter assemblies	None used	N
4.7.3.6	Materials used in high-voltage components	None used	N

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS	P
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IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
5.1	Touch current and protective conductor current		P
5.1.1	General	Touch current and protective conductor does not exceed levels	P
5.1.2	Equipment under test (EUT)	Single piece of equipment	P
5.1.3	Test circuit	Figure 5A used for TN-S system	P
5.1.4	Application of measuring instrument	Measuring circuit of Annex D	P
5.1.5	Test procedure	Single phase equipment	P
5.1.6	Test measurements	Does not exceed 3.5 mA	P
	Test voltage (V)	264 VAC, 63 HZ	—
	Measured touch current (mA)	0.7mA max measured	—
	Max. allowed touch current (mA)	3.5 mA	—
	Measured protective conductor current (mA)	0.7mA	—
	Max. allowed protective conductor current (mA) :	3.5 mA (see test data for results)	—
5.1.7	Equipment with touch current exceeding 3.5 mA	Does not exceed 3.5 mA	N
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks	No TNV Circuits	N
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system	No TNV Circuits	N
	Test voltage (V)	No TNV Circuits	—
	Measured touch current (mA)	No TNV Circuits	—
	Max. allowed touch current (mA)	No TNV Circuits	—
5.1.8.2	Summation of touch currents from telecommunication networks	No TNV Circuits	N
5.2	Electric strength		P
5.2.1	General	All test voltages were applied for 1 minute in the chamber after humidity test and in warm conditions after the heating test. (see appended table 5.2)	P
5.2.2	Test procedure	(see appended table 5.2)	P
5.3	Abnormal operating and fault conditions		P

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
5.3.1	Protection against overload and abnormal operation	<p>The power supply is protected by the following means:</p> <ul style="list-style-type: none"> Overcurrent protection by built in fuse F1 VP by ZD2 hen trigger SCR1, U2, R7,8, pin 2 of U1 OPP by R10, R9, pin3 of U1 <p>(see appended table 5.3)</p>	P
5.3.2	Motors	(see appended Annex B)	N
5.3.3	Transformers	<p>With the shorted o/p of the transformer s T1, the unit damaged with fuse opened.</p> <p>No high temp. of the transformers are to be observed or to be expected.</p> <p>(see appended Annex C)</p>	P
5.3.4	Functional insulation.....:	Short circuit tests	P
5.3.5	Electromechanical components	No electromechanical components	N
5.3.6	Simulation of faults	<p>Output overload test: he most unfavorable load test. See data for details.</p> <p>After test the electric strength test was conducted. No isolation break down was noted.</p>	P
5.3.7	Unattended equipment	No thermostats temperature limiters provided	N
5.3.8	Compliance criteria for abnormal operating and fault conditions	<p>No fire propagated beyond he equipment.</p> <p>No melton metal was emitted. Electric strength test primary → SELV and primary → ground were passed.</p>	P

6	CONNECTION TO TELECOMMUNICATION NETWORKS	N
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6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment	N
6.1.1	Protection from hazardous voltages	N
6.1.2	Separation of the telecommunication network from earth	N
6.1.2.1	Requirements	(see appended table 5.2)
	Test voltage (V)	No TNV Circuits
	Current in the test circuit (mA)	No TNV Circuits
6.1.2.2	Exclusions	No TNV Circuits

Clause	Requirement - Test	Result - Remark	Verdict
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6.2	Protection of equipment users from overvoltages on telecommunication networks		N
6.2.1	Separation requirements	No TNV Circuits	N
6.2.2	Electric strength test procedure	No TNV Circuits	N
6.2.2.1	Impulse test	(see appended table 5.2)	N
6.2.2.2	Steady-state test	(see appended table 5.2)	N
6.2.2.3	Compliance criteria		N

6.3	Protection of the telecommunication wiring system from overheating		N
	Max. output current (A).....	No TNV Circuits	—
	Current limiting method	No TNV Circuits	—

7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS	
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7.1	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment	Not for Cable Distribution Systems	N
7.2	Protection of equipment users from overvoltages on the cable distribution system	Not for Cable Distribution Systems	N
7.3	Insulation between primary circuits and cable distribution systems	Not for Cable Distribution Systems	N
7.3.1	General	Not for Cable Distribution Systems	N
7.3.2	Voltage surge test	(see appended table 5.2)	N
7.3.3	Impulse test	(see appended table 5.2)	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N
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.1.1	Samples.....		—
	Wall thickness (mm)		—
A.1.2	Conditioning of samples; temperature (°C).....		N
A.1.3	Mounting of samples		N
A.1.4	Test flame		N
A.1.5	Test procedure		N
A.1.6	Compliance criteria		N
	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.2.1	Samples, material.....		—
	Wall thickness (mm)		—
A.2.2	Conditioning of samples		N
A.2.3	Mounting of samples		N
A.2.4	Test flame		N
A.2.5	Test procedure		N
A.2.6	Compliance criteria		N
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2.7	Alternative test acc. to IEC 60695-2-2, cl. 4, 8		N
	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.3.1	Mounting of samples		N
A.3.2	Test procedure		N
A.3.3	Compliance criterion		N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N
B.1	General requirements	No motors used	N
	Position		—
	Manufacturer		—
	Type		—
	Rated values		—
B.2	Test conditions		N
B.3	Maximum temperatures	(see appended table 5.3)	N
B.4	Running overload test	(see appended table 5.3)	N
B.5	Locked-rotor overload test		N
	Test duration (days)		—
	Electric strength test: test voltage (V)		—
B.6	Running overload test for d.c. motors in secondary circuits		N
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N
B.7.1	Test procedure	(see appended table 5.3)	N
B.7.2	Alternative test procedure; test time (h)		N
B.7.3	Electric strength test	(see appended table 5.2)	N
B.8	Test for motors with capacitors	(see appended table 5.3)	N
B.9	Test for three-phase motors	(see appended table 5.3)	N
B.10	Test for series motors		N
	Operating voltage (V)		—

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		P
	Position	T1	-----
	Manufacturer	GlobTek	-----
	Type	04-B167, 04-B171, 04-B172, 04-B173	-----
	Rated values	Class E	-----
	Temperatures	(see appended table 5.4)	P
	Thermal cut-out	(see appended table 5.1)	N
C.1	Overload Test	(see 5.4.3)	P
	Conventional Transformer		N
C.2	Insulation		P
	Precautions.....	(see transformer construction check next page)	
	Retaining of end turns all windings	dto	P
	Earthing test at 25 A	dto	N
	Electric strength test	(see 5.3)	P

C.2	Safety isolation transformer		P
Construction details:			
Transformer T1			
Mfr.: GLOBTEK			
Type: 04-B167, 04-B171, 04-B172, 04-B173			
All types transformer are identical except for turns of NS and NV			
Recurring peak voltage		480V-2-p	
Required clearance for reinforced			
Insulation (from table 3 and 4)		4.0mm + 0.2mm	
Effective voltage rms		283V	
Required creepage for reinforced			
Insulation (from table 6)		6.4mm	
Measured min. creepages			

Location	inside (mm)	outside (mm)
prim-sec	-	>7.0
prim-core	1.0	>6.0
sec-core	-	>7.0
prim-prim	%	%
Measured min. clearances		
Location	inside (mm)	outside (mm)
prim-sec	-	>7.0
prim-core	1.0	>6.0
sec-core	-	>7.0
prim-prim	%	%
Construction:		
Concentric windings on RM-10 type bobbin, one layers insulation between primary and secondary windings. Triple insulated wire used for secondary winding. Outer winding is primary. Tubing on winding exit ends is leaded above the distance tape. Metal shielding is connected to primary. The core near to the secondary pins is covered with mylar tape to increase the creepage distance/clearance to the core.		
Triple insulated wire from manufacturer Furukawa, type TEX-E, 120° C		
Pin numbers		
Prim.	3-1, 4-2	
Sec.	5-6, 7	
Bobbin		
Material	Chang Chun Plastic, phenolic type T373J	
Thickness	Min. 0.4mm	
Electric strength test		
With AC 3000V after humidity treat		
Result	pass	

C.2	Safety isolation transformer	P
Construction details:		
Transformer T1		
Mfr.: GLOBTEK		
Type: 04-B185		
Recurring peak voltage	512V 2-p	
Required clearance for reinforced		

Insulation (from table 3 and 4)	4.0mm + 0.4mm	
Effective voltage rms	370V	
Required creepage for reinforced		
Insulation (from table 6 with linear interpolation)	7.6mm	
Measured min creepages		
Location	Inside (mm)	Outside (mm)
Prim-sec	--	8.4
Prim-core	--	--
Sec-core	--	8.4
Prim-prim	%	%
Measured min. clearances		
Location	Inside (mm)	Outside (mm)
Prim-sec	--	4.8
Prim-core	--	--
Sec-core	--	4.8
Prim-prim	%	%
Construction:		
Concentric windings on PQ2620 type bobbin, one layers insulation between primary and secondary windings. Triple insulated wire used for secondary winding. Outer winding is primary. Tubing on winding exit ends is leaded above the distance tape. Metal shielding is connected to primary. The core is covered with mylar tape to increase the creepage distance/clearance to the secondary components.		
Triple insulated wire from manufacturer Furukawa, type TEX-E, 120°C		
Pin numbers		
Prim.	6-3, 4-2, 4-shielding	
Sec.	10-8	
Bobbin		
Material	Chang Chun Plastic, phenolic type T373J	
Thickness	Min. 0.7mm	
Electric strength test		
With AC3000V after humidity treatment		
Result	pass	

C	ANNEX C, TRANSFORMERS		P
	Position.....:	T1	----
	Manufacturer.....:	GlobTek	----
	Type.....:	1)04-B191 (for model GT-21126-6012) 2)04-B190 (for model GT-21126-6024)	----
	Rated values.....:	Class E	----
	Temperatures	(see appended table 5.4)	P
	Thermal cut-out	(see appended table 5.1)	N
	Overload test	(see 5.4.3)	P
	Conventional transformer		N

C.2	Insulation		P
	Precautions.....:	(see transformer construction check next page)	P
	Retaining of end turns of all windings	dto	P
	Earthing test at 25A	dto	N
C.3	Electric strength test	(see 5.3)	P

C.2	Safety isolation transformer		P
Construction details:			
Transformer T1			
Mrf: GLOBTEK			
Type: 1) 04-B191 (for model GT-21126-6012) 2) 04-B190 (for model GT-21126-6024)			
All types transformer are identical except for gauge, turns, and connection of NS			
Recurring peak voltage	1) 488V 0-p max.		
Required clearance for reinforced			
Insulation (from table 3 and 4)	4.0mm + 0.2mm		
Effective voltage rms	258V		
Required creepage for reinforced			
Insulation (from table 6)	6.4mm		
Measured min. creepages			
Location	Inside (mm)	(outside (mm))	
Prim-sec	-	>7.0	
Prim-core	1.0	>6.0	

Sec-core	-	>6.0
Prim-prim	%	%
Measured min. clearances		
Location	Inside (mm)	(outside (mm))
Prim-sec	-	>7.0
Prim-core	1.0	>6.0
Sec-core	-	>6.0
Prim-prim	%	%
Construction:		
Concentric windings on PQ-2620 type bobbin, one layer insulation between primary and secondary windings. The triple insulated wire used for secondary winding. Outer winding is primary. Tubing on secondary winding exit ends is leaded above the distance tape. Metal shielding is connected to primary. Core was covered by two layers of insulation tape.		
Triple insulated wire from manufacturer Furukawa, type TEX-E, 120°C		
Pin numbers		
Prim.	6-CW-3, 4-2	
Sec.	1) 10/11-8/9 2) 10-8/9	
Bobbin		
Material	Chang Chun Plastic, phenolic type T373J/T375J	
Thickness	Min. 0.4mm	
Electric strength test		
With AC3000V after humidity treatment		
Result	Pass	

C	ANNEX C, TRANSFORMERS		P
	Position.....:	T1	---
	Manufacturer.....:	GLOBTEK	---
	Type.....:	04-B191	---
	Rated values.....:	Class E	---
	Temperatures	(see appended table 5.4)	P
	Thermal cut-out	(see appended table 5.1)	N
C.1	Overload test	(see 5.4.3)	P
	Conventional transformer		N
C.2	Insulation		P
	Precautions..... :	(see transformer construction check next page)	P
	Retaining of end turns of all windings	dto	P
	Earthing test at 25 A	dto	N
	Electric strength test	(see 5.3)	P

C.2	Safety isolation transformer		P
Construction details:			
Transformer T1			
Mrf: GLOBTEK			
Type: 1) 04-B191			
Recurring peak voltage	488V 0-p		
Required clearance for reinforced			
Insulation (from table 3 and 4)	4.0mm + 0.2mm		
Effective voltage rms	258V		
Required creepage for reinforced			
Insulation (from table 6)	6.4mm		
Measured min. creepages			
Location	Inside (mm)	(outside (mm))	
Prim-sec	-	>7.0	
Prim-core	1.0	>6.0	
Sec-core	-	>6.4	
Prim-prim	%	%	

Measured min. clearances		
Location	Inside (mm)	(outside (mm))
Prim-sec	-	>7.0
Prim-core	1.0	>6.0
Sec-core	-	>6.4
Prim-prim	%	%
Construction:		
Concentric windings on PQ-2625 type bobbin, one layer insulation between primary and secondary windings. The triple insulated wire used for secondary winding. Outer winding is primary. Tubing on secondary winding exit ends is leaded above the distance tape. Metal shielding is connected to primary. Core is considered to be primary and covered by two layers of insulation tape.		
Triple insulated wire from manufacturer Furukawa, type TEX-E, 120°C		
Pin numbers		
Prim.	6-CW-3, 4-2	
Sec.	10/11-8/9	
Bobbin		
Material	Chang chun Plastic, phenolic type T373J/T375J	
Thickness	Min. 0.4mm	
Electric strength test		
With AC 3000 after humidity treatment		
Result	pass	

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS		P
D.1	Measuring instrument	Less the Max Required	P
D.2	Alternative measuring instrument		N
E	ANNEX E, TEMPERATURE RISE OF A WINDING		P
F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)		P
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N
G.1	Summary of the procedure for determining minimum clearances	Meets requirements	N
G.2	Determination of mains transient voltage (V).....:		N
G.2.1	AC mains supply		N
G.2.2	DC mains supply		N
G.3	Determination of telecommunication network transient voltage (V)		N
G.4	Determination of required withstand voltage (V) .:		N
G.5	Measurement of transient levels (V)		N
G.6	Determination of minimum clearances.....:		N
H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N
	Metal used		—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)		N
K.1	Making and breaking capacity	None used	N
K.2	Thermostat reliability; operating voltage (V).....:		N
K.3	Thermostat endurance test; operating voltage (V)		N
K.4	Temperature limiter endurance; operating voltage (V)		N
K.5	Thermal cut-out reliability		N
K.6	Stability of operation	(see appended table 5.3)	

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1)		N
L.1	Typewriters		N
L.2	Adding machines and cash registers		N
L.3	Erasers		N
L.4	Pencil sharpeners		N
L.5	Duplicators and copy machines		N
L.6	Motor-operated files		N
L.7	Other business equipment		N
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N
M.1	Introduction	No TNV Circuits	N
M.2	Method A	No TNV Circuits	N
M.3	Method B	No TNV Circuits	N
M.3.1	Ringing signal	No TNV Circuits	N
M.3.1.1	Frequency (Hz)	No TNV Circuits	—
M.3.1.2	Voltage (V)	No TNV Circuits	—
M.3.1.3	Cadence; time (s), voltage (V)	No TNV Circuits	—
M.3.1.4	Single fault current (mA).....	No TNV Circuits	—
M.3.2	Tripping device and monitoring voltage	No TNV Circuits	N
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage	No TNV Circuits	N
M.3.2.2	Tripping device	No TNV Circuits	N
M.3.2.3	Monitoring voltage (V)	No TNV Circuits	N
N	ANNEX N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 and clause G.5)		N
N.1	ITU-T impulse test generators	None used	N
N.2	IEC 60065 impulse test generator	None used	N
P	ANNEX P, NORMATIVE REFERENCES		N
Q	ANNEX Q, BIBLIOGRAPHY		N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		N
R.2	Reduced clearances (see 2.10.3)		N
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N
S.1	Test equipment		N
S.2	Test procedure		N
S.3	Examples of waveforms during impulse testing		N
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N
			—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N
			—

IEC 60950-1 / 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⁾
Enclosure	Chi Mei	PA-769	V-0	UL 94	UL
	TEIJIN	LN-1250	V-0	UL 94	UL
Inlet(AC1)	Inalways	0707-1	10A, 250V	IEC 60320	VDE, S, UL
	Richbay	R-301	10A, 250V	IEC 60320	VDE, S, UL
PCB	--	--	V-1 or better, 105° C	UL 94	UL
Fuse (F1)	Bel	5ST	T1.6A, 250Vac	IEC 60127-2	VDE, S, UL, CSA
	Beswick-Cooper	S506	T1.6A, 250Vac	IEC 60127-2	VDE, S, UL, CSA
	Conquer	GTE, GTP	T1.6A,250Vac	--	UL, CSA
	Littelfuse	218...	T1.6A, 250Vac	IEC 60127-2	VDE, S, UL, CSA
	Wickman-Werke	19195	T1.6A, 250Vac	IEC 60127-2	VDE, S, UL, CSA
Line Filter (LF2) (Optional)	SYN	04-C106	Class A	--	--
LF2 Optional	GLOBTEK	04-A052	CLASS B		
Bleeder Resistors (R11, R16)	--	SMD Type	470kΩ, 1/8W	--	--
X Capaitors (C24)	Okaya	RE	Max. 0.47uF, 250Vac	IEC 60384-14	VDE, SEV, S, FI, UL
	Philips	3351MKP, 3351	Max. 0.47uF, 250Vac	IEC 60384	VDE, SEV, S, FI, UL
	Pilkor	PCX2 335	Max. 0.47uF	IEC 60384	VDE, SEV, S, FI, UL
	Rifa	PHE830M, PHE 830	Max. 0.47uF	IEC 60384	VDE, SEV, S, FI, UL
	Roederstein	F1772-..	Max. 0.47uF	IEC 60384	VDE, SEV, S, FI, UL
	Teapo	XG-VS	Max. 0.47uF	IEC 60384	VDE, SEV, S, FI, UL
	U.T.X.	H	Max. 0.47uF	IEC 60384	VDE, SEV, S, FI, UL

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾
Y Capacitors (CY1, CY2, CY3)	Murata	KC, KH	Max. 4700pF, 250Vac	IEC 60384- 14/1993	VDE, S, UL
	Pan oversens	AC	Max. 4700pF, 250Vac	IEC 60384- 14/1993	VDE, S, UL
	Samsung	AA	Max. 4700pF	IEC 60384	VDE,S, UL
	Success	SF	Max. 4700pF	IEC 60384	VDE, S, UL
	TDK	CS	Max. 4700pF	IEC 60384	VDE, S, UL
Line Filter (LF1)	SYN	04-A052	Class E	--	--
	GLOBTEK	04-A052	Class E	--	--
Ripple Capacitor (C22) (100uF for 50- 48W, 68uF for 45-36W, 47uF for 30-27W, 33uF for 20W)	--	Electronic type	33uF-100uF, 400V, 105°C	--	--
Switching Transistor (Q3)	--	2SK2761-01MR or equivalent	9A, 600V	--	--
Optical Isolator (U2)	Sharp	PC 817	di> 0.4mm	VDE 0884 IEC 60950	TUV, UL FIMKO
	Taiwan Liton	LTV-817	di≥ 0.4mm	VDE 0884 IEC 60950	VDE, UL FIMKO
	Matsushita	ON 3171..	di = 0.6mm	VDE 0884 IEC 60950	VDE, UL FIMKO
	Philips	CNX 82A	Distance through insulation > 0.4mm	VDE 0884 IEC 60950	TUV, UL, FIMKO
	Electronics Co. Ltd.	EI817	isolation voltage 5000 V ac, Meet reinforced requirement, internal creepage minimum 5 mm distance, and insulation thickness minimum 0.4 mm.)	VDE 0884 IEC 60950	VDE
	Cosmo Electronics Corp	KPC817	IOSLATION V= 500VDC, Meet reinforced requirement, internal creepage minimum 5 mm distance, and insulation thickness minimum 0.4 mm.)	VDE 0884 IEC 60950	VDE

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾
	Bright Led Electronics Corp.,	BPC817	ISOLATION VOLTAGE = 5000V, Meet reinforced requirement, internal creepage minimum 5 mm distance, and insulation thickness minimum 0.4 mm.)	VDE 0884 IEC 60950	VDE
Transformer (T1) (for 22- 24V)	SYN	04-B171	Class E	--	--
	GLOBTEK	04-B171	CLASS E		
(for 18-20V)	SYN	04-B172	Class E	--	--
(for 14-16V)	SYN	04-B171	Class E	--	--
	GLOBTEK	04-B171	CLASS E		
(for 9-13V)	SYN	04-B167	Class E	--	--
	GLOBTEK	04-B167	CLASS E		
Triple insulated wire in T1	Furukawa	TEX-E	120° C	IEC 60950	TUV, VDE, BSI, UL, CSA
Line filter (LF2) (optional)	SYN	04-C106	Class 105°C	--	--
	GLOBTEK	04-C106	Class 105°C		
Choke (L2) (optional)	SYN	04-C107	Class 105°C	--	--
	GLOBTEK	04-C107	Class 105°C		
Transformer (T1) (for SYS1126-5012)	SYN	04-B185	Class E	--	--
	GLOBTEK	04-B185	CLASS E		
Triple insulated wire in T1 (for SYS1126-5012)	Furukawa	TEX-E	120°C	IEC 60950	TUV, VDE, BSI, N, UL, CSA
Bleeder Resistors (R11, R16) (for SYS1126-5012)	--	SMD type	1MΩ, 1/8W	--	--
Transformer (T1) (for SYS 1126-6012 only)	SYN	04-B191	Class E	--	--
	GLOBTEK	04-B191	CLASS E		

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity ¹⁾
Transformer (T1) (for SYS1126-6024 only)	SYN	04-B190	Class E	--	--
	GLOBTEK	04-B190	CLASS E		
Triple wire used in T1	Furukawa	TEX-E	120°C	IEC 60950	TUV, VDE, BSI, UL, CSA
X-Capacitor	Philips	MKP 338 2	Max. 0.47 micro, 275 Vac	IEC 60 384- 14/1993	VDE, SEV, S, UL, CUL
	Philips	PXC2 335	Max. 0.47 micro, 275Vac	IEC 60 384- 14/1993	VDE, SEV, S, UL, CUL
	Rifa	PHE 840 M	Max. 0.47 micro, 275Vac	IEC 60 384- 14/1993	VDE, SEV, UL, FI
	Siemens	B 81130 series	Max. 0.47 micro, 275Vac	IEC 60 384- 14/1993	VDE, SEV, UL, FI
Transformer T1	SYN Electronics Co., Ltd.	04-B191	Class E	Applicable parts in IEC 60950 and evaluated according to IEC 60085	Accepted by TUV Rheinland
	GLOBTEK	04-B191	CLASS E	Applicable parts in IEC 60950 and evaluated according to IEC 60085	Accepted by TUV Rheinland
Triple wire used in T1	Furukawa	TEX-E	120°C	IEC 60950	TUV, VDE, BSI, N, UL, CSA
Switching Regulator (Q3)	--	2SK2761-01MR or equivalent	8.5A, 600V	--	--
Optical Isolator (U2)	Temec Telefunken	TCET 1109	di= 0.6mm	VDE 0884 IEC 60950	VDE, UL, FI, S
PCB	--	--	V-1 or better, 130°C	UL94	UL

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

Note: All data listed below are based on SYS models. Models numbers appears below were changed to GT-2 initials to indicate GlobTek's models.

1.6.2	TABLE: electrical data (in normal conditions)					P
Fuse#	Irated (A)	U (V)	P (W)	I (A)	Ifuse (A)	Condition/status
GT-21097-3609						
F1	-	90V/ 47Hz	46	0.845	0.845	Max. Normal load: 94V/4A
F1	-	90V/ 63Hz	46	0.857	0.857	dto.
F1	1.6	100V/ 47 Hz	45	0.768	0.768	dto.
F1	1.6	100V/ 63Hz	45	0.792	0.792	dto.
F1	1.6	240V/ 47Hz	45	0.422	0.422	dto.
F1	1.6	240V/ 63Hz	45	0.405	0.405	dto.
F1	-	264V/47Hz	45	0.394	0.394	dto.
F1	-	264V/ 63Hz	45	0.379	0.379	dto.
GT-21097-5012						
F1	-	90V/ 47Hz	61	1.13	1.13	Max. Normal load: 12V/4.17A
F1	-	90V/63Hz	61	1.15	1.15	dto.
F1	1.6	100V/47Hz	60	1.03	1.03	dto.
F1	1.6	100V/ 63Hz	61	1.06	1.06	dto.
F1	1.6	240V/ 63Hz	59	0.59	0.59	dto.
F1	1.6	240V/ 63Hz	59	0.52	0.52	dto.
F1	-	264V/ 47Hz	59	0.56	0.56	dto.
F1	-	264V/ 63Hz	60	0.49	0.49	dto.
GT-21097-5013						
F1	-	90V/47Hz	61	1.11	1.11	Max. Normal load: 13V/3.85A
F1	-	90V/63Hz	61	1.11	1.11	dto.
F1	1.6	100V/ 47Hz	60	1.00	1.00	dto.
F1	1.6	100V/ 63Hz	61	1.00	1.00	dto.
F1	1.6	240V/ 47Hz	59	0.55	0.55	dto.
F1	1.6	240V/ 63Hz	60	0.53	0.53	dto.
F1	-	264V/47Hz	59	0.52	0.52	dto.
F1	-	264V/63Hz	60	0.49	0.49	dto.

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

1.6.2	TABLE: electrical data (in normal conditions)					P
Fuse#	Irated (A)	U (V)	P (W)	I (A)	Ifuse (A)	Condition/status
GT-21097-5014						
F1	-	90V/ 47Hz	60	1.08	1.08	Max. Normal load: 14V/3.57A
F1	-	90V/ 63Hz	61	1.11	1.11	dto.
F1	1.6	100V/ 47Hz	60	1.00	1.00	dto.
F1	1.6	100V/ 63Hz	61	1.00	1.00	dto.
F1	1.6	240V/ 47Hz	59	0.55	0.55	dto.
F1	1.6	240V/63Hz	60	0.53	0.53	dto.
F1	-	264V/ 47Hz	59	0.52	0.52	dto.
F1	-	264V/ 63Hz	60	0.49	0.49	dto.
GT-21097-5014						
F1	-	90V/ 47Hz	60	1.08	1.08	Max. Normal load: 14V/3.57A
F1	-	90V/ 63Hz	59	1.10	1.10	dto.
F1	1.6	100V/ 47Hz	59	0.99	0.99	dto.
F1	1.6	100V/ 63Hz	59	1.01	1.01	dto.
F1	1.6	240V/ 47Hz	58	0.53	0.53	dto.
F1	1.6	240V/ 63Hz	58	0.55	0.55	dto.
F1	-	264v/ 47Hz	59	0.50	0.50	dto.
F1	-	264V/ 63Hz	59	0.51	0.51	dto.

GT-21097-5015						
F1	-	90V/ 47Hz	60	1.11	1.11	Max. Normal load: 15V/3.33A
F1	-	90V/ 63Hz	61	1.14	1.14	dto.
F1	1.6	100V/ 47Hz	60	1.02	1.02	dto.
F1	1.6	100V/ 63Hz	60	1.05	1.05	dto.
F1	1.6	240V/ 63Hz	59	0.56	0.56	dto.
F1	1.6	240V/ 63Hz	59	0.58	0.58	dto.
F1	-	264V/ 47Hz	60	0.53	0.53	dto.
F1	-	264V/ 63Hz	60	0.54	0.54	dto.

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

1.6.2	TABLE: electrical data (in normal conditions)					P
Fuse#	Irated (A)	U (V)	P (W)	I (A)	Ifuse (A)	Condition/status
GT-21097-5018						
F1	-	90V/ 47Hz	58	0.99	0.99	Max. Normal load: 18V/2.78A
F1	-	90V/63Hz	58	1.00	1.00	dto.
F1	1.6	100V/47Hz	59	1.08	1.08	dto.
F1	1.6	100V/63Hz	59	1.10	1.10	dto.
F1	1.6	240V/ 47Hz	58	0.57	0.57	dto.
F1	1.6	240V/ 63Hz	58	0.54	0.54	dto.
F1	-	264V/ 47Hz	58	0.53	0.53	dto.
F1	-	264V/ 63Hz	59	0.51	0.51	dto.
GT-21097-5019						
F1	-	90V/ 47Hz	60	1.09	1.09	Max. Normal load: 19V/2.63A
F1	-	90V/ 63Hz	59	1.12	1.12	dto.
F1	1.6	100V/ 47Hz	59	1.00	1.00	dto.
F1	1.6	100V/ 63Hz	59	1.03	1.03	dto.
F1	1.6	240V/ 47Hz	58	0.55	0.55	dto.
F1	1.6	240V/ 63Hz	58	0.56	0.56	dto.
F1	-	264V/ 47Hz	59	0.52	0.52	dto.
F1	-	264V/ 63Hz	59	0.53	0.53	dto.
GT-21097-5020						
F1	-	90V/ 47Hz	60	1.12	1.12	Max. Normal load: 20V/2.5A
F1	-	90V/ 63Hz	60	1.14	1.14	dto.
F1	1.6	100V/ 47Hz	59	1.03	1.03	dto.
F1	1.6	100V/ 63Hz	59	1.06	1.06	dto.
F1	1.6	240V/ 47Hz	59	0.60	0.60	dto.
F1	1.6	240V/ 63Hz	59	0.61	0.61	dto.
F1	-	264V/ 47Hz	59	0.57	0.57	dto.
F1	-	264V/ 63Hz	59	0.58	0.58	dto.

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

1.6.2	TABLE: electrical data (in normal conditions)					P
Fuse#	Irated (A)	U (V)	P (W)	I (A)	Ifuse (A)	Condition/status
GT-21097-5022						
F1	-	90V/ 47Hz	59	1.07	1.07	Max. Normal load: 22V/2.27A
F1	-	90V/ 63Hz	59	1.10	1.10	dto.
F1	1.6	100V/ 47Hz	58	0.99	0.99	dto.
F1	1.6	100V/ 63Hz	58	1.00	1.00	dto.
F1	1.6	240V/ 47Hz	58	0.56	0.56	dto.
F1	1.6	240V/ 63Hz	58	0.53	0.53	dto.
F1	-	264V/ 47Hz	59	0.52	0.52	dto.
F1	-	264V/ 63Hz	59	0.50	0.50	dto.
GT-21097-5024						
F1	-	90V/ 47Hz	58	1.06	1.06	Max. Normal load: 24V/2.08A
F1	-	90V/ 63Hz	58	1.08	1.08	dto.
F1	1.6	100V/ 47Hz	58	0.97	0.97	dto.
F1	1.6	100V/ 63Hz	58	0.99	0.99	dto.
F1	1.6	240V/ 47Hz	58	0.52	0.52	dto.
F1	1.6	240V/ 63Hz	58	0.53	0.53	dto.
F1	-	264V/ 47Hz	58	0.49	0.49	dto.
F1	-	264V/ 63Hz	58	0.49	0.49	dto.

IEC 60950-1 / EN 60950-1						
Clause		Requirement - Test		Result - Remark		Verdict
1.6		TABLE: electric data (in normal conditions)				P
Fuse #	Irated (A)	U (V)	P (W)	I (A)	Ifuse (A)	Condition/status
F1	--	90V/47Hz	70	1.38		For model GT-21126-6024 with load as + 24V/2.5A
F1	--	90V/63Hz	69	1.32		dto.
F1	1.6	100V/47Hz	69	1.26		dto.
F1	1.6	100V/ 63Hz	68	1.2		dto.
F1	1.6	240V/ 47Hz	67	0.60		dto.
F1	1.6	240V/ 63Hz	67	0.58		dto.
F1	--	264V/ 47Hz	68	0.56		dto.
F1	--	264V/ 63Hz	67	0.54		dto.
F1	--	90V/ 47Hz	74	1.46		For model GT-21126-6012 with load as + 12V/5.0A
F1	--	90V/ 63Hz	74	1.40		dto.
F1	1.6	100V/ 47Hz	74	1.33		dto.
F1	1.6	100V/ 63Hz	74	1.27		dto.
F1	1.6	240V/ 47Hz	72	0.63		dto.
F1	1.6	240V/ 63Hz	72	0.61		dto.
F1	--	264V/ 47Hz	72	0.58		dto.
F1	--	264V/ 63Hz	72	0.57		dto.

IEC 60950-1 / EN 60950-1				
Clause	Requirement - Test		Result - Remark	
2.1.1.5	TABLE: energy hazard			P
Voltage (Rated) (V)	Current (Rated) (A)	Voltage (Max.) (V)	Current (Max.)	VA (Max.) (VA)
GT-21097-5020				
20	2.5	19.93	4.14	74.41
GT-21097-5022				
22	2.27	22.24	3.80	71.74
GT-21097-5024				
24	2.08	24.01	3.5	70.29

2.1.1.5	TABLE: energy hazard			P
Voltage (Rate) (V)	Current (Rated) (A)	Voltage (Max) (V)	Current (Max) (A)	VA (Max) (VA)
For model GT-21126-6024:				
+24	2.5	24.1	5.2	97
For model GT-21126-6012:				
+12	5.0	12.2	9.3	78

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
2.5	TABLE: limited power source measurement		P
<p>■ The output of the power adaptor is isolated from mains with an isolation transformer.</p> <p>■ The output is limited to the limits of table 8 under normal and single fault conditions.</p>			
a) Uoc = 9.19V (measured under no load conditions for model GT-21097-3609)			
b) Uoc = 13.24V (measured under no load conditions for model GT-21097-5013)			
c) Uoc = 14.03V (measured under no load conditions for model GT-21097-5014)			
d) Uoc = 16.20V (measured under no load conditions for model GT-21097-5016)			
e) Uoc = 17.89V (measured under no load conditions for model GT-21097-5018)			
f) Uoc = 19.93V (measured under no load conditions for model GT-21097-5020)			
g) Uoc = 22.24V (measured under no load conditions for model GT-21097-5022)			
h) Uoc = 24.01V (measured under no load conditions for model GT-21097-5024)			
According to Table 2B	Limits	Measured	Verdict
With the Maximum Load Conditions			
Current (in A)	a) ≤ 8	a) 5.40	ok
	b) ≤ 8	b) 5.82	
	c) ≤ 8	c) 5.05	
	d) ≤ 8	d) 4.63	
	e) ≤ 8	e) 4.38	
	f) ≤ 8	f) 4.14	
	g) ≤ 8	g) 3.80	
	h) ≤ 8	h) 3.50	
Power (in VA)	a) $\leq 5 \times U_{oc}$	a) 40.0	ok
	b) $\leq 5 \times U_{oc}$	b) 60.8	
	c) $\leq 5 \times U_{oc}$	c) 59.6	
	d) $\leq 5 \times U_{oc}$	d) 64.3	
	e) $\leq 5 \times U_{oc}$	e) 71.0	
	f) $\leq 5 \times U_{oc}$	f) 74.4	
	g) ≤ 100	g) 71.8	
	h) ≤ 100	h) 70.3	

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
With ZD2 opened (OVP device)			
Current (in A)	a) ≤ 8	a) 5.40	ok
	b) ≤ 8	b) 5.90	
	c) ≤ 8	c) 5.00	
	d) ≤ 8	d) 5.30	
	e) ≤ 8	e) 4.38	
	f) ≤ 8	f) 4.14	
	g) ≤ 8	g) 3.80	
	h) ≤ 8	h) 3.48	
Power (in VA)	b) $\leq 5xU_{oc}$	a) 39.0	ok
	c) $\leq 5xU_{oc}$	b) 60.6	
	d) $\leq 5xU_{oc}$	c) 61.5	
	e) $\leq 5xU_{oc}$	d) 73.0	
	f) $\leq 5xU_{oc}$	e) 68.6	
	g) $\leq 5xU_{oc}$	f) 72.4	
	h) ≤ 100	g) 69.8	
	i) ≤ 100	h) 69.7	
With R10 shortened (OPP device)			
Current	b) ≤ 8	a) 5.00	ok
	c) ≤ 8	b) 5.77	
	d) ≤ 8	c) 4.93	
	e) ≤ 8	d) 5.35	
	f) ≤ 8	e) 4.14	
	g) ≤ 8	f) 4.02	
	h) ≤ 8	g) 4.26	
	i) ≤ 8	h) 3.90	
Power	a) $\leq 5xU_{oc}$	a) 39.0	ok
	b) $\leq 5xU_{oc}$	b) 60.0	
	c) $\leq 5xU_{oc}$	c) 60.4	
	d) $\leq 5xU_{oc}$	d) 74.8	
	e) $\leq 5xU_{oc}$	e) 68.1	
	f) $\leq 5xU_{oc}$	f) 71.7	
	g) ≤ 100	g) 87.0	
	h) ≤ 100	h) 86.5	

IEC 60950-1 / EN 60950-1				
Clause	Requirement - Test		Result - Remark	Verdict
2.5	TABLE: limited power source measurement			P
GT-21126-5012				
■ The output of the power adaptor is isolated from mains with an isolation transformer.				
■ The output is limited to the limits of table 8 under normal and single fault conditions.				
Uoc = 12.40V				
According to Table 8		Limits	Measured	Verdict
With the max load conditions				
Current (in A)		≤8	4.70	ok
Power (in VA)		≤5xUoc	55.04	ok
With ZD2 opened				
Current (in A)		≤8	4.63	ok
Power (in VA)		≤5xUoc	55.43	ok
With R22 shorted				
Current		≤8	4.75	ok
Power		≤5xUoc	55.43	ok
With L1 shorted				
Current		≤8	4.68	ok
Power		≤5xUoc	54.66	ok

IEC 60950-1 / 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 ¹⁾
For model GT-21126-6024:			
T1 (2-8)	212	344	
T1 (3-8)	237	412	
T1 (4-8)	214	364	
T1 (6-8)	235	444	*
T1 (2-10)	214	420	
T1 (3-10)	258	424	*
T1 (4-10)	210	344	
T1 (6-10)	230	352	
For model GT-21126-6012:			
T1 (2-8)	208	376	
T1 (3-8)	247	480	
T1 (4-8)	211	352	
T1 (6-8)	232	400	
T1 (2-10)	210	424	
T1 (3-10)	258	488	*
T1 (4-10)	210	344	
T1 (6-10)	232	360	
Input voltage: 240V, 63Hz			
¹⁾ an asterisk indicates the highest measured working voltage			

2.2.7	TABLE: Working Voltage Measurements			P
From Test Report E9864982 Z04				
Location		RMS Voltage (V)	Peak Voltage (V)	Comments ¹⁾
T1 (2-8)		203	360	
T1 (3-8)		246	440	
T1 (4-8)		205	344	
T1 (6-8)		225	408	
T1 (2-10)		205	408	
T1 (3-10)		258	448	*
T1 (4-10)		202	336	
T1 (6-10)		222	352	
Input voltage: 240V, 60Hz				
1) An asterisk indicates the highest measured working voltage.				

IEC 60950-1 / 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 components (with 10N)→ earthed part	<420	<250	2.0	10.0	2.5	10.0
Primary components (with 10N) → secondary components (with 10N)	<420	<250	4.0	4.0	5.0	5.0
Primary components (with 10N) → secondary components (with 10N)	<480	<269	4.2	4.2	6.4	6.4
Pri. → earthed traces	<420	<250	2.0	↓	2.5	↓
- under CY2				3.8		3.8
Pri. → sec. traces	<420	<250	4.0	↓	5.0	↓
- under U2				6.0		6.0
Pri. → sec. traces	<480	<269	4.2	↓	6.4	↓
- under T1				6.4		6.4
Operational insulation before fuse	<420	<250	2.0	2.5	2.5	2.5
Note:						
1) Operational insulation shorted, see 5.4.4. 2) The earthing wire will be fixed with solder pin, then mechanically secured and soldered to PCB. 3) C9 will be sleeved to keep cr ≥ 5mm and cl ≥ 4mm 4) CY3 will be sleeved to prevent it touching the core T1						

2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements					P
From Test Report E9864982 Z02						
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 components (wth 10N) → earthed part	<420	<250	2.0	8	2.5	8
Primary components (with 10N) → secondary components (with 10N)	<420	<250	4.0	5	5.0	8
Primary components (with 10N) → secondary components (with 10N)	<510	<270	4.4	5	6.4	7
Pri. → earthed traces	<420	<250	2.0	↓	2.5	↓
-under CY2				3.5		3.5

IEC 60950-1 / EN 60950-1						
Clause	Requirement - Test		Result - Remark			Verdict
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)
Pri. → sec. traces	<420	<250	4.0	↓	5.0	↓
-under U2				6.0		6.0
-under R46-R9 with 1mm wide groove				5.0		>5.0
Pri. → sec. traces	<510	<270	4.4	↓	6.4	↓
-under T1				7		7
Operational insulation before fuse	<420	<250	2.0	2.5	2.5	2.5
Note: 1) Operational insulation shorted, see 5.4.4. 2) The earthing wire will be fixed with solder pin, then mechanically secured and soldered to PCB 3) F1, L2, CY3, C10, R10, R47, C20 are sleeved with heatshrink tubing. 4) T1 core is wrapped with 2 layers UL insulation tape to keep distance of cl ≥ 4mm and cr ≥ 5mm to secondary component.						

2.10.5	TABLE: distance through insulation measurements				
distance through insulation di at/of:	U r.m.s (V)	test voltage (V)	required di (mm)	di (mm)	
Photo coupler (reinforced insulation)	250	3000	≥ 0.4	Approved comp.	
For distance through insulation, see appended table 1.5.1 for details					

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
4.5	TABLE: temperature rise measurements		P
	Test voltage (V).....:	100V-10%/240V+10%	—
	t1 (°C).....:		—
	t2 (°C).....:		—
Temperature rise dT of part/at:		dT (K)	Required dT (K)
GT-21097-5012			
L2 coil		41/32	65
LF2 coil		59/44	80
C22 body		59/47	65
LF1 coil		68/47	65
T1 core		40/44	65
T1 coil		54/58	65
HS2 of D7		49/43	45
Top enclosure		40/34	55
Room ambient at		25°C/26°C	--
GT-21097-5016			
L2 coil		39/32	65
LF2 coil		55/44	80
C22 body		55/48	65
LF1 coil		64/47	65
T1 core		62/63	65
T1 coil		56/61	65
HS2 of D7		42/39	45
Top enclosure		34/33	55
Room ambient at		25°C/26°C	--
GT-21097-5020			
L2 coil		33/25	65
LF2 coil		53/37	80
C22 body		54/44	65
LF1 coil		64/41	65
T1 core		52/54	65

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

Temperature rise dT of part/at:	dT (K)		Required dT (K)			
T1 coil	57/57		65			
HS2 of D7	41/39		45			
Top enclosure	33/32		55			
Room ambient at	25°C/26°C		--			

GT-21097-5022						
L2 coil	37/29		65			
LF2 coil	56/41		80			
C22 body	51/47		65			
LF1 coil	65/42		65			
T1 core	59/62		65			
T1 coil	61/64		65			
HS2 of D7	42/41		45			
Top enclosure	36/35		55			
Room ambient at	26°C/26°C		--			

Temperature rise dT of winding	R1	R2 (Ω)	dT (K)	Required dT (K)	Insulation class

Comments:

The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in 1.6.1 at voltages as described in 1.6.5.

With the maximum ambient temperature 40° is specified, the max. temperature rise is calculated as follows:

Winding components:

- class E → $dT_{max} = 90K - 10K - (40-25)K = 65K$

Electrolyte capacitor or components with:

- max. absolute temp. of 85°C → $dT_{max} = (85-40) K = 45K$
- max. absolute temp. of 130°C → $dT_{max} = (130-40) K = 90K$

User touchable surface with:

- max. temp. rise of 70K → $dT_{max} = 70K - (40-25)K = 55K$

IEC 60950-1 / EN 60950-1							
Clause		Requirement - Test			Result - Remark		Verdict
4.5	TABLE: temperature rise measurements					P	
	Test voltage (V).....:			100V-10%/240V + 10%		---	
	t1 (°C).....:					---	
	t2 (°C).....:					---	
Temperature rise dT of part/at:				dT (K)		Required dT (K)	
For model GT-21126-6024:							
LF1 coil				65/41	90		
LF2 coil				54/37	65		
PCB under BD1				58/40	65		
C22 body				60/45	65		
PCB under H.S. of D7				52/46	65		
T1 core				58/54	65		
T1 coil				65/62	65		
Top enclosure				41/33	55		
Room ambient at:				26°C/26°C	--		
For model GT-21126-6012							
LF1 coil				73/52	105		
LF2 coil				67/50	80		
PCB under BD1				71/53	80		
C22 body				68/56	80		
PCB under H.S. of D7				49/44	80		
T1 core				80/78	80		
T1 coil				70/68	80		
Top enclosure				49/43	70		
Room ambient at:				27°C/26°C	--		
Temperature rise dT of winding		R1 (Ω)	R2 (Ω)	dT (K)	Required dT (K)	Insulation class	

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

Comments:

The temperatures were measured under worst case normal mode defined in the 1.2.2.1 and as described in 1.6.1 at voltages as described in 1.6.5.

With the maximum ambient temperature 25°C for model GT-21126-6012 is specified, the max. temperature rise is calculated as follows:

Winding components:

- class E → $dT_{max} = 90K - 10K - (25-25)K = 80K$

Electrolyte capacitor or components with:

- max. absolute temp. of 85°C → $dT_{max} = (85-25) K = 60K$
- max. absolute temp. of 105°C → $dT_{max} = (105-25) K = 80K$
- max. absolute temp. of 130°C → $dT_{max} = (130-25) K = 105K$

User touchable surface with:

- max. temp. rise of 70K → $dT_{max} = 70K - (25-25)K = 70K$

With the maximum ambient temperature 40°C for model GT-21126-6024 is specified, the max. temperature rise is calculated as follows:

Winding components:

- class E → $dT_{max} = 90K - 10K - (40-25)K = 65K$

Electrolyte capacitor or components with:

- max. absolute temp. of 85°C → $dT_{max} = (85-40) K = 45K$
- max. absolute temp. of 105°C → $dT_{max} = (105-40) K = 65K$
- max. absolute temp. of 130°C → $dT_{max} = (130-40) K = 90K$

User touchable surface with:

- max. temp rise of 70K → $dT_{max} = 70K - (40-25)K = 55K$

IEC 60950-1 / EN 60950-1					
Clause	Requirement - Test			Result - Remark	Verdict
4.5	TABLE: Temperature Rise Measurements				P
	Test voltage (V).....:	100V-10%/240V + 10%		---	
	t1 (°C).....:			---	
	t2 (°C).....:			---	
From Test Report E9864982 Z02					
Temperature rise dT of part/at:		dT (K)		Required dT (K)	
LF1 coil		71/50		90	
LF2 coil		64/48		65	
PCB under BD1		70/50		90	
C22 body		60/51		65	
PCB under H.S. of D2		70/62		90	
T1 core		64/61		65	
T1 coil		59/56		65	
Top enclosure		41/38		55	
Room ambient at:		27°C/26°C		--	
Temperature rise dT of winding	R1 (Ω)	R2 (Ω)	dT (K)	Required dT (K)	Insulation class
Comments:					
The temperatures were measured under worst case normal mode defined in the 1.2.2.1 and as described in 1.6.1 at voltages as described in 1.6.5.					
With the maximum ambient temperature 40°C for model GT-21126-6012 is specified, the max. temperature rise is calculated as follows:					
Winding components:					
■ class E → dTmax = 90K – 10K – (40-25)K = 65K					
Electrolyte capacitor or components with:					
■ max. absolute temp. of 105°C → dTmax = (105-40) K = 65K					
■ max. absolute temp of 130°C → dTmax = (130-40) K = 90K					
User touchable surface with:					
■ max. temp. rise of 70k → dTmax = 70K – (40-25)K = 55K					

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test		Verdict
4.5.2	TABLE: Ball pressure test of thermoplastics		P
	Required impression diameter (mm).....:	≤ 2 mm	-----
Part	Test temperature (C°)	Impression diameter (mm)	
Bobbin material of T1	125	<2	
Bobbin material of LF1	125	<2	

4.5.2	TABLE: ball pressure test of thermoplastic parts		N
	allowed impression diameter (mm)	≤ 2 mm	—
part	test temperature (°C)	impression diameter (mm)	
J1, J2	125	<1.0	

5.2	TABLE: electric strength measurements		P
From Test Report E9864982 E01			
Test voltage applied between:		Test voltage (V)	Breakdown
Primary and secondary		DC 424V	No
Primary and ground		DC 2414V	No
T1 primary and secondary		AC 3000V	No
T1 primary and core		AC 1707V	No
2 layers of insulation tape used in T1		AC3000V	No
T1 secondary and core		AC 1707V	No

5.2	TABLE: electric strength measurements		P
From Test Report E9864982 Z02			
Test voltage applied between:		Test voltage (V)	Breakdown
Primary and secondary		DC 4242V	No
Primary and ground		DC 2636V	No
T1 primary and secondary		AC 3000V	No
T1 secondary and core		AC 1864V	No

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

5.2	TABLE: Electric Strength Measurement		P
Test voltage applied between:		Test voltage (V)	Breakdown
For model GT-21126-6012:			
Primary and secondary		DC 4242V	No
Primary and ground		DC 2461V	No
T1 primary and secondary		AC 3000V	No
T1 primary and core		AC 1674V	No
2 layers of insulation tape used in T1		AC 3000V	No
T1 secondary and core		AC 1674V	No

5.2	TABLE: Electric Strength Measurements		P
From Test Report E9864982 Z04			
Test voltage applied between:		Test voltage (V)	Breakdown
Primary and secondary		DC 4242V	No
Primary and ground		DC 2461V	No
T1 primary and secondary		AC 3000V	No
T1 secondary and core		AC 3000V	No

IEC 60950-1 / EN 60950-1							
Clause		Requirement - Test		Result - Remark			Verdict
5.3		TABLE: Fault Condition Tests			P		
	Ambient temperature (°C).....:		25°C		---		
	Model/type of power supply.....:		See below		---		
	Manufacturer of power supply.....:		SYS		---		
	Rated markings of power supply.....:		See labels at pages 6-10		---		
From test Report E9864982 E01							
No.	Component No.	Fault	Test voltage (V)	Test time	Fuse No.	Fuse current (A)	result
01	GT-21097-5012 T1 (5)-(6,7)	s-c	240	1h	F1	0.03-0.07	Unit cycling protection, no hazards; T1: 54°C
02	GT-21097-5016 Ti (5)-(6,7)	s-c	240	1h	F1	0.04-0.07	Unit cycling protection, no hazards, T1: 56°C
03	GT-21097-5022 T1 (5)-(6,7)	s-c	240	1h	F1	0.07-0.15	Unit cycling protection, no hazards, T1: 64°C
04	GT-21097-5024 T1 (5)-(6-7)	s-c	240	1h	F1	0.06-0.12	Unit cycling protection, no hazards, T1: 75°C
GT-21097-5012							
05	U2 (primary)	s-c	240	10 min	F1	0.023	Unit shut down, T1: 30°C, no hazards
06	U2 (secondary)	s-c	240	25 min	F1	0.05-0.24	Unit cycling protection, no hazards; T1: 60°C
07	BD1 (AC-)	s-c	240	1 sec	F1	0	Fuse opened immediately, no hazard
08	C22	s-c	240	1 sec	F1	0	Fuse opened immediately, no hazard
09	Q3 (D-S)	s-c	240	1 sec	F1	0	Q1, Q3 damaged, Fuse opened immediately, no hazard

IEC 60950-1 / EN 60950-1							
Clause	Requirement - Test			Result - Remark			Verdict
No.	Component No.	Fault	Test voltage (V)	Test time	Fuse No.	Fuse current (A)	result
10	Q3 (D-S)	s-c	240	1 sec	F1	0	Q1, Q3, U1, D5 damaged, Fuse opened immediately, no hazard
11	T1 (1) – (3)	s-c	240	20 min	F1	0.02-0.07	Unit shut down, T1=45°C, no hazards
Transformer abnormal:							
12	GT-21097-5012 T1 (5)-(6,7)	s-c	240	2h	F1	0.538	Max. output load: 4.55A, T1: 87°C, was stable, no hazards
13	GT-21097-5016 T1 (5)-(6,7)	s-c	240	2h	F1	0.70	Max. output load: 4.75A, T1: 96°C, was stable, no hazards
14	GT-21097-5020 T1 (5)-(6,7)	s-c	240	2h	F1	0.714	Max. output load: 3.3A, T1: 92°C, was stable, no hazards
15	GT-21097-5022 T1 (5)-(6,7)	s-c	240	2h	F1	0.712	Max. output load: 3.26A, T1: 99°C, was stable, no hazards
Output shorted:							
16	GT-21097-5012	--	240	45 min	F1	0.04-0.08	Output shorted, I = 0 – 6.0A, unit cycle protection, T1: 39°C, no hazards
17	GT-21097-5016	--	254	1h	F1	0.08-0.16	Output shorted, I = 0 – 10A, unit cycle protection, T1: 55°C, no hazards
18	GT-21097-5020	--	240	50 min	F1	0.08-0.18	Output shorted, I = 0 – 11A, unit cycle protection, T1: 39°C, no hazards

IEC 60950-1 / EN 60950-1							
Clause	Requirement - Test			Result - Remark			Verdict
No.	Component No.	Fault	Test voltage (V)	Test time	Fuse No.	Fuse current (A)	result
19	GT-21097-5022	--	240	20 min	F1	0.04-0.08	Output shorted, I = 0 – 5A, unit cycle protection, T1: 39°C, no hazards
Output overloaded:							
20	GT-21097-5012	--	240	1.5h	F1	0.543	Output overloaded to 4.5A, T1: 86°C stable, no hazard
21	GT-21097-5016	--	240	1.5h	F1	0.73	Output overloaded to 4.8A, T1: 98°C stable, no hazard
22	GT-21097-5020	--	240	1.5h	F1	0.69	Output overloaded to 3.2A, T1: 89°C stable, no hazard
23	GT-21097-5022	--	240	1h	F1	0.673	Output overloaded to 3.17A, T1: 82°C stable, no hazard
SELV reliability:							
24	GT-21097-5013: D7	s-c	240	--	--	--	Output voltage dropped to 0V immediately
25	GT-21097-5016: D7	s-c	240	--	--	--	Output voltage dropped to 0V immediately
26	GT-21097-5020: D7	s-c	240	--	--	--	Output voltage dropped to 0V immediately
27	GT-21097-5024: D7	s-c	240	--	--	--	Output voltage dropped to 0V immediately
Note: For fuse opened conditions, same result came out for each source of fuse							

IEC 60950-1 / EN 60950-1							
Clause		Requirement - Test		Result - Remark			Verdict
5.3		TABLE: fault condition tests					P
		Ambient temperature (°C).....:		25°C			—
		Model/type of power supply.....:		GT-21126-5012			—
		Manufacturer of power supply.....:		GlobTek			—
							—
From test Report E9864982 Z02							
No.	Component No.	Fault	Test voltage (V)	Test time	Fuse No.	Fuse current (A)	Result
01	T1 pin8-10	s-c	240	3hr	F1	0.62	Unit shut down, T1 = 93°C, no hazards
02	Output + 12V	s-c	240	30min	F1	0.022	Unit shut down, unit operated normally after removed short, T1: 28°C, no hazards
03	Output + 12V overload	--	240	2h	F1	0.633	Overload to 11.56V/5.1A, I = 0 – 10A, unit shut down, T1: 96°C, ambient = 24°C, no hazards
Note: For fuse opened conditions, same result came out for each source of fuse.							

IEC 60950-1 / EN 60950-1							
Clause		Requirement - Test		Result - Remark			Verdict
5.3	TABLE: fault condition tests						P
	Ambient temperature (°C).....:	25°C					—
	Model/type of power supply.....:	GT-21126-5012					—
	Manufacturer of power supply.....:	GlobTek					—
							—
From test Report E9864982 Z03							
No.	Component No.	Fault	Test voltage (V)	Test time	Fuse No.	Fuse current (A)	Result
01	BD1	s-c	240	1 sec	F1	0	Fuse opened, no hazard
02	C22	s-c	240	1 sec	F1	0	Fuse opened, no hazard
03	Q3 (D-G)	s-c	240	1 sec	F1	0	Fuse opened, Q3, R48 R12 & U1 damaged, no hazard
4	Q3 (D-S)	s-c	240	1 sec	F1	0	Fuse opened, Q3, R9 R10 & U1 damaged, no hazard
5	T1 (4-2)	s-c	240	10 min	F1	0.03	Unit shut down, T1=30 °C, after short removed, the unit is in normal operation, no hazard
6	T1 (8-10)	s-c	240	1 sec	F1	0	Fuse opened, Q3, R47, R48, R12, U1 and R10 damaged, no hazard
7	T1 (8-10)	Overload	240	2 hrs	F1	0.95	Temp is stable at load 4.1A, T1 coil=125°, unit shut down at load 4.5 A, no hazard

IEC 60950-1 / EN 60950-1							
Clause	Requirement - Test			Result - Remark			Verdict
No.	Component No.	Fault	Test voltage (V)	Test time	Fuse No.	Fuse current (A)	Result
8	+24 V output	s-c	240	10 min	F1	0.03	Unit shut down, T1=30 °C, after short removed, the unit is in normal operation, no hazard
9	+24 V output	Overload	240	2 hrs	F1	0.94	Temp is stable at load 4.1A, T1 coil=123°, unit shut down at load 4.5 A, no hazard
For model GT-21126-6012:							
10	T1 (4-2)	s-c	240	10min	F1	0.03	Unit shuts down, T1 = 30°C; after short removed, the unit is in normal operation, no hazards.
11	T1 (8-10)	s-c	240	10min	F1	0.03	Unit shuts down, T1 = 31°C; after short removed, the unit is in normal operation, no hazards.
12	T1 (8-10)	Overload	240	2hr	F1	0.77	Temp. is stable at load 6A, T1 coil = 120°C; unit shuts down at load 6.5A, no hazards.
13	+12V Output	s-c	240	10min	F1	0.03	Unit shuts down, T1 = 30°C; after short removed, the unit is in normal operation, no hazards.
14	+12V Output	Overload	240	2hr	F1	0.77	Temp. is stable, T1 = 119°C, unit shuts down at load 6.5A, no hazards.

Note: For fuse opened conditions, same result came out for each source of fuse.

IEC 60950-1 / EN 60950-1								
Clause		Requirement - Test				Result - Remark		Verdict
5.3	TABLE: Fault Condition Tests						P	
	ambient temperature (°C)				26°C		-	
	model/type of power supply				GT-1126-6012		-	
	manufacturer of power supply				GLOBTEK		-	
	rated markings of power supply				See labels at page 3		-	
From test Report E9864982 Z04								
No.	component No.	fault	test vol- tage (V)	test time	fuse No.	fuse current (A)	result	
01	T1 (4-2)	s-c	240	20 min	F1	0.03	Unit shuts down, T1= 33°C; after short removed, the unit is in normal operation, no hazards.	
02	T1 (8-10)	s-c	240	10 min	F1	0.03	Unit shuts down, T1= 33°C; after short removed, the unit is in normal operation, no hazards.	

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

A.6.5	TABLE: flammability test for classifying materials V-0, V-1 or V-2		P
sample No. / ref.	afterflame time (s) t_1 or t_2	afterflame + afterglow (s) after 2nd flame application $t_2 + t_3$	
1/A	Rated V-1 or better		
2/A			
3/A			
4/A			
5/A			
6/B			
7/B			
8/B			
9/B			
10/B			
supplementary information:			
Total afterflame time (s) for any condition set $t_1 + t_2$ for five (5) specimens:			
Conditioning "A" designates 7 days at $70\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ followed by 4 h minimum in calcium chloride desiccator.			
Conditioning "B" designates 48 h at $23\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ and relative humidity between 45 % and 55 %.			

A.6.6	TABLE: flammability re-test for classifying materials V-0, V-1 or V-2		N
sample No.	afterflame time (s) t_1 or t_2	afterflame + afterglow (s) after 2nd flame application $t_2 + t_3$	
11			
12			
13			
14			
15			
supplementary information:			
Total afterflame time (s) for any condition set $t_1 + t_2$ for five (5) specimens:			

IEC 60950-1 / EN 60950-1				
Clause	Requirement - Test		Result - Remark	Verdict
A.7.4, A.7.5, A.7.6 and A.7.7	TABLE: flammability test for classifying foam materials HF-1, HF-2 or HBF			N
sample No. / ref.	flame time (s)	glow time (s)	flaming/glowing distance from the end (mm)	comment (for A.7.7 burning rate mm/min)
1/A				
2/A				
3/A				
4/A				
5/A				
6/B				
7/B				
8/B				
9/B				
10/B				
supplementary information:				
Conditioning "A" designates 7 days at 70 °C ± 1 °C followed by 4 h minimum in calcium chloride desiccator.				
Conditioning "B" designates 48 h at 23 °C ± 2 °C and relative humidity between 45 % and 55 %.				

A.7.8	TABLE: flammability re-test for classifying foam materials HF-1 or HF-2			N
sample No.	flame time (s)	glow time (s)	flaming/glowing distance from the end (mm)	comment
11				
12				
13				
14				
15				
supplementary information:				

IEC 60950-1 / EN 60950-1				
Clause	Requirement - Test		Result - Remark	Verdict
A.7.9	TABLE: flammability re-test for classifying foam materials HBF			N
sample No.	flame time (s)	glow time (s)	flaming/glowing distance from the end (mm)	comment (for A.7.7 burning rate mm/min)
11				
12				
13				
14				
15				
supplementary information:				

A.8.5	TABLE: flammability test for classifying materials HB		N
sample No.	flaming/glowing rate mm/min	flaming/glowing distance from reference mark (mm)	
1			
2			
3			
supplementary information:			

A.8.6	TABLE: flammability re-test for classifying materials HB		N
sample No.	flaming/glowing rate mm/min	flaming/glowing distance from reference mark (mm)	
4			
5			
6			
supplementary information:			

IEC 60950-1 / EN 60950-1					
Clause	Requirement - Test		Result - Remark		Verdict
A.9.6	TABLE: flammability test for classifying materials 5V				N
sample No./ref.	test bars		test plaques		
	flaming + glowing time (s)	burning distance (mm)	position	flaming + glowing time (s)	burning distance (mm)
1/A			A		
2/A			B		
3/A			C		
4/A			D		
5/A			—	—	—
6/B			A		
7/B			B		
8/B			C		
9/B			D		
10/B			—	—	—
supplementary information:					
Conditioning "A" designates 7 days at 70 °C ± 1 °C followed by 4 h minimum in calcium chloride desiccator.					
Conditioning "B" designates 48 h at 23 °C ± 2 °C and relative humidity between 45 % and 55 %.					

A.9.7	TABLE: flammability re-test for classifying materials 5V				N
sample No.	test bars		test plaques		
	flaming + glowing time (s)	burning distance (mm)	position	flaming + glowing time (s)	burning distance (mm)
11			A		
12			B		
13			C		
14			D		
15			—	—	—
supplementary information:					

IEC 60950-1 / EN 60950-1							
Clause	Requirement - Test				Result - Remark		Verdict
CENELEC COMMON MODIFICATIONS: (EN 60950-1:2001)							
General	Delete all the "country" notes in the reference document according to the following list: 1.1.5 Note 2 1.5.8 Note 2 1.6.1 Note 1.7.2 Note 4 1.7.12 Note 2 2.6 Note 2.2.3 Note 2.2.4 Note 2.3.2 Note 2, 7, 8 2.3.3 Note 1, 2 2.3.4 Note 2,3 2.7.1 Note 2.10.3.1 Note 4 3.2.1.1 Note 3.2.3 Note 1, 2 3.2.5.1 Note 2 4.3.6 Note 1,2 4.7.2.2 Note 4.7.3.1 Note 2 6.1.2.1 Note 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7 Note 4 7.1 Note G2.1 Note 1, 2 Annex H Note 2						P
2.7.1	Replace the sub-clause as follows: <i>Basic requirements</i> 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; 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.				Replaces		P
2.7.2	Void.				Considered		P
2.10.2	Replace in the first line "(see also 1.4.7)" by "(see also 1.4.8)".				Replaced		P

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
3.2.3	Delete Note 1 and in Table 3A, delete the conduit sizes in parentheses.	Deleted	P
3.2.5.1	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". In Table 3B, replace the first four lines by the following: Up to and including 6		

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
Annex Q	Replace the title of IEC 61032 by "Protection of persons and equipment by enclosures – Probes for verification". Add the following notes for the standards indicated: IEC 60127 NOTE Harmonized as EN 60127 (Series) (not modified) IEC 60269-2-1 NOTE Harmonized as HD 630.2.1 S4:2000 (modified) IEC 60529 NOTE Harmonized as EN 60529:1991 (not modified) IEC 61032 NOTE Harmonized as EN 61032:1998 (not modified) IEC 61140 NOTE Harmonized as EN 61140:2001 (not modified) ITU-T Recommendation K.31 NOTE in Europe, the suggested document is EN 50083-1.		P

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
Annex ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR RELEVANT EUROPEAN PUBLICATIONS This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments). NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.		P
	— IEC 60050-151 — IEC 60050-195 EN 60065:1998 + corr. June 1999 IEC 60065 (mod):1998 EN 60073:1996 IEC 60073:1996 HD 566 S1:1990 IEC 60085:1984 HD 214 S2:1980 IEC 60112:1979 HD 611.4.1.S1:1992 IEC 60216-4-1:1990 HD 21 1) Series IEC 60227 (mod) Series HD 22 2) Series IEC 60245 (mod) Series EN 60309 Series IEC 60309 Series EN 60317-43:1997 IEC 60317-43:1997 EN 60320 Series IEC 60320 (mod) Series HD 384.3 S2:1995 IEC 60364-3 (mod):1993 HD 384.4.41 S2:1996 IEC 60364-4-41 (mod):1992 ³⁾ EN 132400:1994 ⁴⁾ IEC 60384-14:1993 + A2:1998 + A3:1998 + A4:2001 EN 60417-1 IEC 60417-1 HD 625.1 S1:1996 + corr. Nov. 1996 IEC 60664-1 (mod):1992 EN 60695-2-2:1994 IEC 60695-2-2:1991 EN 60695-2-11:2001 IEC 60695-2-11:2000 — IEC 60695-2-20:1995 — IEC 60695-10-2:1995 — IEC 60695-11-3:2000 — IEC 60695-11-4:2000 EN 60695-11-10:1999 IEC 60695-11-10:1999 EN 60695-11-20:1999 IEC 60695-11-20:1999 EN 60730-1:2000 IEC 60730-1:1999 (mod) EN 60825-1:1994 + corr. Febr. 1995 + A11:1996 + corr. July 1997 IEC 60825-1:1993 EN 60825-2:2000 IEC 60825-2:2000		

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test		Verdict
	—	IEC 60825-9:1999	
	EN 60851-3:1996	IEC 60851-3:1996	
	EN 60851-5:1996	IEC 60825-5:1996	
	EN 60851-6:1996	IEC 60851-6:1996	
	—	IEC 60885-1:1987	
	EN 60990:1999	IEC 60990:1999	
	—	IEC 61058-1:2000	
	EN 61965:2001	IEC 61965:2000	
	EN ISO 178:1996	ISO 178:1993	
	EN ISO 179 Series	ISO 179 Series	
	EN ISO 180:2000	ISO 180:1993	
	—	ISO 261:1998	
	—	ISO 262:1998	
	EN ISO 527 Series	ISO 527 Series	
	—	ISO 386:1984	
	EN ISO 4892 Series	ISO 4892 Series	
	—	ISO 7000:1989	
	EN ISO 8256:1996	ISO 8256:1990	
	—	ISO 9772:1994	
	EN ISO 9773:1998	ISO 9773:1998	
	—	ITU-T:1988 Recommendation K.17	
	—	ITU-T:2000 Recommendation K.21	
	1) The HD 21 series is related to, but not directly equivalent with the IEC 60227 series		
	2) The HD 22 series is related to, but not directly equivalent with the IEC 60245 series		
	3) IEC 60364-4-41:1992 is superseded by IEC 60364-4-41:2001		
	4) EN 132400, Sectional Specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains (Assessment level D), and its amendments are related to, but not directly equivalent to IEC 60384-14		

IEC 60950-1 / EN 60950-1

Clause	Requirement - Test	Result - Remark	Verdict
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National Differences CB Bulletin 107A and A,S Deviations EN 60950-1:2001

National Differences for Australia and New Zealand (AU)			
1.2	Between the definitions for 'Person, service' and 'Range, rated frequency' insert the following: I ignition source 1.2.12.201	Noted	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.		P
1.5.1	Add the following to the end of first paragraph: 'or the relevant Australian/New Zealand Standard'.	All components comply with IEC or relevant Australian Standards.	P
1.5.2	Add the following to the end of first and third dash items: 'or the relevant Australian/New Zealand Standard'.		P
2.1	Delete the Note.	Noted	P
3.2.3	Delete Note 2.	Noted	P
3.2.5.1	Modify Table 3B as follows: Delete the first four rows and replace with	Noted. Equipment for building-in. No inlet, or power cord provided	P
Rated Current of the Equipment A		Minimum Conductor Sizes	
		Nominal cross-sectional area mm ²	AWG or kcmil [cross-sectional area in mm ²] see note 2
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⁾	16 [1,3]
Over 10 up to and including 16		(1,0) ³⁾	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			

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
4.3.6	Replace paragraph three with: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112, shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.	Replaced Not a direct Plug In Equipment	N
4.3.13.5	Add the following to the end of the first paragraph: ‘, or AS/NZS 2211.1’.	Added. No Laser rated LED's	N
4.7	Add the following paragraph: For alternative tests refer to Clause 4.7.201.	Added	P

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
4.7.201	<p>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 mm³, integrated circuits, 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. 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. For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5. 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. 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 5.2.11 which shall be carried out at 750°C.</p>	<p>Noted</p> <p>Components are either certified. Or tested with the equipment. Material used are rated V-1 or better.</p>	P

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test		Verdict
	<p>The test shall be also carried out on other parts of insulating material which are within a distance of 3mm of the connection. NOTE Contacts in components such as switch contacts are considered to be connections. 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. The needle-flame test shall be made in accordance with AS/NZS 4695.2.2 with the following modifications:</p>		
	Clause of AS/NZS 4695.2.2	Change	N
	5 Severities	Replace with: The duration of application of the test flame shall be 30 s \pm 1 s.	N
	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.	N
	8.4	The first paragraph does not apply. Addition: If possible, the flame shall be applied at least 10 mm from a corner.	N
	8.5	Replace with: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall then withstand the test.	N
	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.	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
	<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. 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. 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. 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. 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. 4.7.201.5 Testing of printed boards 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. 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. 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>		N
6.2.2	<p>Add the symbol NZ in the right hand margin beside the first paragraph. 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. Delete the note.</p>	No TNV Circuits	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
6.2.2.1	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.	No TNV Circuits	N
6.2.2.2	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.	No TNV Circuits	N
Annex 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	Noted. No reference to IEC 60065	N
Index	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	Noted	P

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
National Differences for Canada (CA) ; UL 60950-1/CSA C22.2 No. 60950-1			P
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.	End user is to ensure that all installation in accordance with the National Electrical Code (NEC) and the Canadian Electrical Code (CEC) part 1 CAN/CSA C22.1, ANSI/NFPA 70, and unless marked or otherwise identified, the Standard for Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75	P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	No power supply cords with attachment plug caps provided	N
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g. DP, CL2) specified in the NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings.	No power supply cords with attachment plug caps provided	N
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. 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."	Single phase	N
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.	No-Operator accessible fuse	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets, receptacles and medium-base or smaller lampholder 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 transformer overcurrent protection.	No Outlets	N
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.	No power supply cords with attachment plug caps provided According to codes	N
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.	No power supply cords with attachment plug caps provided	N
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.	Equipment not intended for permanent connection	N
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 Article 400 of the NEC, and Tables 11 and 12 of the CEC.	No power supply cords with attachment plug caps provided	N
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	Equipment not intended for permanent connection	N
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.	Not for field wiring	N
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).	Equipment not intended for permanent connection	N
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).	No Motors	N
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.	No such switch is incorporated in the equipment	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
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.	No Back up batteries	N
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.	No Liquids	N
4.3.13	Equipment with lasers is required to meet the Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No laser provided	N
4.7	For computer room applications, automated information storage systems with combustible media greater than 27 cubic feet are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	No combustible media	N
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m ² or a single dimension greater than 1.8 m 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.	No combustible area	N
Annex H	Equipment that produces ionizing radiation is required to comply with the Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No Ionizing radiation	N
Other Differences - The following key national differences are based on requirements other than national regulatory requirements. The bi-national standard (CAN/CSA C22.2 No. 60950-1/UL 60950-1, First Edition) referenced above should be consulted for further details on the national differences summarized below.			

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
1.5.1	<p>Components of equipment must be suitable for the application, and must comply with the requirements of the equipment standard and the applicable national (Canadian and/or U.S.) component or material standards, as far as they may apply.</p> <p>The acceptance will be based on the following:</p> <p>I) A component Certified by a Canadian or U.S. National Certification Body (NCB) to a Canadian or U.S. component standard will be checked for correct application and use in accordance with its specified rating. Where necessary, it will also be subject to the applicable tests of the equipment standard.</p> <p>J) A component, which has a CB Test Certificate for compliance with a relevant IEC component standard, will be checked for correct application and use in accordance with its specified ratings. Where necessary, it will also be subject to the applicable tests of the equipment standard, and to the applicable tests of the Canadian and/or U.S. component or material standard, under the conditions occurring in the equipment.</p> <p>K) A component, which has no approval as in A) or B) above or which is used not in accordance with its specified ratings, will be subject to the applicable tests of the equipment standard, and to the applicable tests of the Canadian and/or U.S. component or material standard, under the conditions occurring in the equipment.</p> <p>L) Some components may require annual re-testing, which may be carried out by the manufacturer, CSA International or another laboratory</p>	Approved components or tested with the equipment	P
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.	No TNV Circuits	N
2.3.2	In the event of a single fault, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.	Component	N
2.6.3.3	When subject to impedance testing, protective earthing and bonding are required to be subjected to the additional test conditions specified.		N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
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.	No DC	N
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.	No CRT's	N
4.3.2	Equipment with handles is required to comply with special loading tests.		N
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	No TNV Circuits	N
6.2.1	Enamel coating on winding wire not considered electrical separation unless subjected to special investigation.		N
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
6.5	Equipment connected to a telecommunications network and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure tests.	No TNV circuitry	N
Annex M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV Circuits	N

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

National Differences for China (CN)			P
1	<p>Supply tolerance</p> <p>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%</p>	Considered	P
2	<p>Power rating marking</p> <p>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:</p> <ul style="list-style-type: none"> - 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 	220V included in range 100-240V	P
3	<p>Plate and warning marking in Chinese</p> <p>Item 1.7.12 of GB4943-2001 stipulates: instructions and equipment markings related to safety shall be in standardized Chinese.</p>	Will be provided at the time of shipments	P
4	<p>Power supply plug</p> <p>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</p>	No power cord evaluated with this report. Will be supplied at destination	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
National Differences for Switzerland (CH)			
1.7.15	(Ordinance on environmentally hazardous substances SR 814.013): Annex 4.10 of SR 814.013 applies for batteries.	No power supply cords with attachment plug caps provided	N
3.2.1.1	<p>S (CH): 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> <p>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</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10A. 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> <p>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</p>	No Supply cord evaluated nor provided with the unit.	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
National Differences for Germany (DE) ; EN 60950-1:2001			N
1.7.12	<p>Germany (Gesetz über technische Arbeitsmittel (Gerätesicherheitsgesetz) [Law on technical labour equipment {Equipment safety law}], of 23 rd October 1992, Article 3, 3 rd paragraph, 2 nd sentence, together with the "Allgemeine Verwaltungsvorschrift zur Durchführung des Zweiten Abschnitts des Gerätesicherheitsgesetzes" [General administrative regulation on the execution of the Second Section of the Equipment safety law], of 10 th January 1996, article 2, th paragraph, item 2). Directions for use with rules to prevent certain hazards for (among others) maintenance of the technical labour equipment, also for imported technical labour equipment shall be written in the German language.</p> <p>NOTE Of this requirement, rules for use even only by service personnel are not exempted.</p>	No Warning provided nor required	N
Annex H (a)	a) A license is required by those who operate an X-ray emission source	No X-ray emission source	N
Annex H (b)	<p>b) A license in accordance with Clause 1 is not required by those who operate an X-ray emission source on which the electron acceleration voltage does not exceed 20 kV if:</p> <p>1) The local dose rate at a distance of 0.1 m from the surface does not exceed 1 µSv/h and</p> <p>2) it is adequately indicated on the X-ray emission source that</p> <p>i) X-rays are generated and</p> <p>ii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer</p>	No X-ray emission source	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
Annex H (c)	<p>c) A license in accordance with Clause 1 is also not required by persons who operate an X-ray emission source on which the electron acceleration voltage exceeds 20 kV if:</p> <p>1) The X-ray emission source has been granted a type approval and</p> <p>2) it is adequately indicated on the X-ray emission source that</p> <p>i) X-rays are generated,</p> <p>ii) the device stipulated by the manufacturer or importer guarantees that the maximum permissible local dose rate in accordance with the type approval is not exceeded and</p> <p>iii) the electron acceleration voltage does not exceed the maximum value stipulated by the manufacturer or importer</p>	No X-ray emission source	N
Annex H (d)	<p>d) Furthermore, a license in accordance with Clause 1 is also not required by persons who operate X-ray emission source on which the electron acceleration voltage does not exceed 30 kV if:</p> <p>1) the X-rays are generated only intrinsically safety CRTs complying with Enclosure III, No. 6</p> <p>2) the values stipulated in accordance with Enclosure III, No. 6.2 are limited by technical measured and specified in the device and</p> <p>3) it is adequately indicated on the X-ray emission source that the X-rays generated are adequately screened by the intrinsically safe CRT</p>	No X-ray emission source	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
National Differences for Denmark (DK) ; EN 60950-1:2001			N
1.2.4.1	Certain types of Class I appliances (see sub-clause 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets	No power supply cords with attachment plug caps provided	N
1.7.2 (Heavy Current Reg.)	Supply cords of CLASS I EQUIPMENT, which is delivered without a plug, must be provided with a visible tag with the following text: 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
1.7.5	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.	None provided	N
1.7.5 (Heavy Current Reg.)	Class II equipment shall not be fitted with socket-outlets for providing power to other equipment	Class I	N
3.2.1.1	Supply cord 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. Class I equipment provided with socket-outlets with earth contact or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If 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 107-1-D1 or EN 60309-2		N

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

National Differences for Spain (ES)			N
3.2.1.1	<p>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>	No power supply cords with attachment plug caps provided	N

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

National Differences for Finland (FI) ; EN 60950-1:2001			N
1.7.2	<p>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.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>"Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan "</p>	No power supply cords with attachment plug caps provided	N
6.1.2.1	<p>Add the following text between the first and second paragraph:</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 2.10.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.7 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 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 60950:2000, 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. 	No TNV	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
6.1.2.2	The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and 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
7.1	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
National Differences for the United Kingdom (GB) ; BS EN 60950-1:2001			N
2.6.3.3	The current rating of the circuit shall be taken as 13 A, not 16 A.		N
2.7.1	To protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT.	Not direct plug in	N
3.2.1.1	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. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	No power supply cords with attachment plug caps provided	N
3.2.5.1	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.	Noted	N
3.3.4	The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current of over 10A up to and including 13A is: 1.25 mm ² to 1.5 mm ² nominal cross-sectional area	Noted	N
4.3.6	The torque test is performed using a socket outlet complying with BS 1363 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, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125°C.		N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
National Differences for Ireland (IE)			N
3.2.1.1	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.	No power supply cords with attachment plug caps provided	N
4.3.6	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.	Not direct plug in equipment	N

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

National Differences for Korea (KR); K60950			P
General	When an appliance is supplied in Korea, it shall be set to and marked with 220V.	Power supplies are approved over 100-240 Volts Range	P
General	When an appliance is supplied in Korea, it shall be set to and marked with 60Hz.	Marked	P
1.5.101	Addition – Plugs for the connection of the apparatus to the supply shall comply with the Korean requirement (KSC 8305 and 8305)	No power supply cords with attachment plug caps provided	N
7	Addition – EMC, The apparatus shall comply with the relevant CISPR standards	Not evaluated as part of this investigation	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
National Differences for Norway (NO) ; EN 60950-1:2001			P
1.5.8	Due to the IT power system used (see annex V, figure V.7), capacitors are required to be rated for the applicable phase-to-phase voltage (230 V)	Not for IT power system	N
1.7.2	CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: "Apparatet må tilkoples jordet stikkontakt"	No power supply cords with attachment plug caps provided	N
2.2.4	Requirements according to this annex, 1.7.2 and 6.1.2.1 apply	Noted	P
2.3.2	Requirements according to this annex, 6.1.2.1 apply	Noted	P
2.3.3	Requirements according to this annex, 1.7.2 and 6.1.2.1 apply	Noted	P
2.3.4	Requirements according to this annex, 1.7.2 and 6.1.2.1 apply	Noted	P
2.10.3.1	Due to the IT power distribution system used (see annex V, figure V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault	Noted	P
6.1.2.1	Add the following text between the first and second paragraph: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.	No TNV	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
	<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 2.10.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.7 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. 	No TNV	N
	<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 60950:2000, 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. 	No TNV	N
6.1.2.2	<p>The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and 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
7.1	<p>Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>	No TNV	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
G.2.1	Due to the IT power distribution system used (see annex V, figure V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault		N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
National Differences for Sweden (SE) ; SS EN 60950-1			P
1.5.1	<p>The following is added:</p> <p>Sweden (Ordinance (1990:944)</p> <p>NOTE - In Sweden, switches containing mercury such as thermostats, relays and level controllers are not allowed.</p>	No Such Material/Components	N
1.7.2	<p>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.</p> <p>The marking text shall be in Swedish and as follows:</p> <p>"Apparaten skall anslutas till jordat uttag."</p>	<p>Not evaluated as part of this investigation</p> <p>No power supply cords with attachment plug caps provided</p>	P
6.1.2.1	<p>The following text is added:</p> <p>NOTE - In Sweden the following text is added between the first and second paragraph:</p> <p>In Sweden, 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. 	No TNV	N
	<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 the accordance with the compliance clause below and in addition:</p> <ul style="list-style-type: none"> - passes the test and inspection criteria of IEC 60950-1, 2.10.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of IEC 60950-1, 2.10.7 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

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
	<p>It is permitted to bridge this insulation with a capacitor complying with IEC 60384-14:1993, subclass Y2.</p> <p>A capacitor classified Y3 according to IEC 60384-14:1993, may bridge this insulation under the following conditions:</p> <p>The insulation requirements are satisfied by having a capacitor classified Y3 as defined by IEC 60384-14, which in addition to the Y3 testing, is tested with an Impulse test of 2.5kV defined in IEC 60950-1, subclause 6.2.2.1.</p> <p>The additional testing shall be performed on all the test specimens as described in IEC 60384 - 14.</p> <p>The Impulse test of 2.5kV is to be performed before the Endurance Test in IEC 60384 -14 in the sequence of tests as described in IEC 60384-14.</p>		N
6.1.2.2	<p>The exclusions are applicable only 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 SERVICE PERSON.</p>	Not Permanently Connected	N
7.1	<p>Requirements according to the Swedish deviations to 6.1.2.1 and 6.1.2.2 apply. The term "TELECOMMUNICATION NETWORK" in 6.1.2 is replaced by "CABLE DISTRIBUTION SYSTEM".</p>	No TNV	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
National Differences for USA (US) ; UL 60950-1/CSA C22.2 No. 60950-1			P
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.	End user is to ensure that all installation in accordance with the National Electrical Code (NEC) and the Canadian Electrical Code (CEC) part 1 CAN/CSA C22.1, ANSI/NFPA 70, and unless marked or otherwise identified, the Standard for Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75	P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	No power supply cords with attachment plug caps provided	N
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g. DP, CL2) specified in the NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings.	No power supply cords with attachment plug caps provided	N
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. 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."	No power supply cords with attachment plug caps provided	N
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.	No TNV	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets, receptacles and medium-base or smaller lamp holders if the supply branch circuit protection are not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require transformer overcurrent protection.		N
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.	Per NEC codes	P
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.	No power supply cords with attachment plug caps provided	N
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.	Not a permanently connected equipment	N
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 Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.	No Field Wiring	N
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).	Tested with unit	P
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).	No Motors	N
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.	No Switches	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
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
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.	No Liquids	N
4.3.13	Equipment with lasers is required to meet the Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No Laser	N
4.7	For computer room applications, automated information storage systems with combustible media greater than 27 cubic feet are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m ² or a single dimension greater than 1.8 m 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
Annex H	Equipment that produces ionizing radiation is required to comply with the Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No ionizing radiation	N
Other Differences - The following key national differences are based on requirements other than national regulatory requirements.			

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
1.5.1	<p>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 (U.S. and Canadian) component or material requirements.</p> <p>These components include:</p> <p>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, surge suppressors, switches (including interlock switches), thermal cutoffs, thermostats, multi-layer transformer winding wire, tubing, wire connectors, and wire and cables.</p>	Approved components and or tested with equipment. Flame ratings V-1 or better	P
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV	N
2.3.2	In the event of a single fault, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.	See fault testing	P
2.6.3.4	When subject to impedance testing, protective earthing and bonding are required to be subjected to the additional test conditions specified.	Earth wire is soldered to appliance in-let and PCB	P
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
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.	No CRT	N
4.3.2	Equipment with handles is required to comply with special loading tests.	No Handles	N

IEC 60950-1 / EN 60950-1			
Clause	Requirement - Test	Result - Remark	Verdict
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	No TNV	N
6.2.1	Enamel coating on winding wire not considered electrical separation unless subjected to special investigation.	No TNV	N
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.	No TNV	N
6.5	Equipment connected to a telecommunications network and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure tests.	No TNV	N
Annex M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV	N

End of Test Report