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TEST REPORT

EN 60950-1
Information technology equipment – Safety – Part 1: General requirements

Report Number. .....:	103955437LAX-001
Date of issue .....:	2019/06/26
Total number of pages.....	81
Applicant's name.....:	Aleph Objects Inc.
Address .....:	626 W 66th St. Loveland, CO 80538-1210, USA
Test specification:	
Standard.....:	EN 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013
Test procedure .....:	IEC Test report
Non-standard test method.....:	N/A
Test Report Form No.....:	IEC60950_1F
Test Report Form(s) Originator.....:	SGS Fimko Ltd
Master TRF.....:	Dated 2014-02

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description ..... :	3D Printer		
Trade Mark ..... :			
Manufacturer ..... :	Aleph Objects Inc.		
Model/Type reference ..... :	TAZ Workhorse		
Ratings ..... :	100-240Vac, 50-60Hz, 6A		
Testing procedure and testing location:			
☒ **Testing Laboratory:**	Intertek Testing Services, NA Inc		
Testing location/ address ..... :	25800 Commercentre Drive, Lake Forest, CA 92630, USA		
☐ **Associated Testing Laboratory:**	N/A		
Testing location/ address ..... :			
Tested by (name + signature) ..... :	Randy Chau		
Approved by (name + signature) ..... :	Bhavin Parikh		
☐ **Testing procedure: TMP/CTF Stage 1:**	N/A		
Testing location/ address ..... :			
Tested by (name + signature) ..... :			
Approved by (name + signature) ..... :			
☐ **Testing procedure: WMT/CTF Stage 2:**	N/A		
Testing location/ address ..... :			
Tested by (name + signature) ..... :			
Witnessed by (name + signature) ..... :			
Approved by (name + signature) ..... :			
☐ **Testing procedure: SMT/CTF Stage 3 or 4:**	N/A		
Testing location/ address ..... :			
Tested by (name + signature) ..... :			
Witnessed by (name + signature) ..... :			
Approved by (name + signature) ..... :			
Supervised by (name + signature) ..... :			

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

Attachment 1 – (National Group Differences)

Attachment 2 – (Photographs of System)

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
Input Current Test (1.6.2) Durability of Markings Test (1.7.11) Accessibility Test (2.1.1.1) Capacitor Discharge Test (2.1.1.7) Resistance Of Earthing Conductor (2.6.3.4) Humidity Conditioning (2.9.2) Clerance and Creepage Measurement (2.10.3, 2.10.4) Stability (4.1) Mechanical Strength (4.2.4) Impact Test (4.2.5) Temperature Test 4.5.1 Touch Current Test 5.1 Electric Strength Test 5.2 Abnormal Operation Test (5.3)	Intertek Testing Services, NA Inc 25800 Comercentre Drive, Lake Forest, CA 92630, USA

Summary of compliance with National Differences:

List of countries addressed

US, CA, CENELEC

☒ **The product fulfils the requirements of** EN 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013

Copy of marking plate:

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

Test item particulars.....:	
Equipment mobility.....:	[x] movable [] hand-held [] transportable [] stationary [] for building-in [] direct plug-in
Connection to the mains.....:	[x] pluggable equipment [x] type A [] type B [] permanent connection [x] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains
Operating condition.....:	[x] continuous [] rated operating / resting time:
Access location .....:	[x] operator accessible [] restricted access location
Over voltage category (OVC) .....:	[] OVC I [x] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values .....:	±10%
Tested for IT power systems .....:	[] Yes [x] No
IT testing, phase-phase voltage (V) .....:	N/A
Class of equipment .....:	[x] Class I [] Class II [] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) .....:	20A
Pollution degree (PD) .....:	[] PD 1 [x] PD 2 [] PD 3
IP protection class .....:	IPX0
Altitude during operation (m) .....:	2000 m
Altitude of test laboratory (m) .....:	200 m
Mass of equipment (kg) .....:	15.8 kg

Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing.....:	
Date of receipt of test item .....:	2019/05/30
Date (s) of performance of tests.....:	2019/06/11 to 2019/06/26

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) ..... : Aleph Objects Inc.
626 W 66th St.
Loveland, CO 80538-1210, USA

General product information:

The product covered by this report is a 3D printer, intended for indoor use only. Unit is provided with an appliance inlet for AC mains connection.

Abbreviations used in the report:

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

Indicate used abbreviations (if any)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	**GENERAL**		P
1.5	**Components**		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components	All components are within rating and used appropriately	P
1.5.3	Thermal controls	No thermal controls	N/A
1.5.4	Transformers	Part of approved power supply	P
1.5.5	Interconnecting cables	Interconnecting cables are not provided.	N/A
1.5.6	Capacitors bridging insulation	When provided, is part of approved power supply.	N/A
1.5.7	Resistors bridging insulation	When provided, is part of approved power supply.	N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems	Not considered for IT power.	N/A
1.5.9	Surge suppressors	When provided, is part of approved power supply.	N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A
1.6	**Power interface**		P
1.6.1	AC power distribution 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/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6.4	Neutral conductor	Neutral is insulated from earth and body throughtout equipment and components rated accordingly.	P
1.7	**Marking and instructions**		P
1.7.1	Power rating and identification markings		P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:	Single supply	N/A
	Rated voltage(s) or voltage range(s) (V) .....:	100-240 Vac	P
	Symbol for nature of supply, for d.c. only.....:	Not this type	N/A
	Rated frequency or rated frequency range (Hz) ....:	50-60 Hz	P
	Rated current (mA or A) .....:	6A	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark .....:	Trade-mark used.	P
	Model identification or type reference .....:	TAZ Workhorse	P
	Symbol for Class II equipment only .....:	Not Class II	N/A
	Other markings and symbols .....:		N/A
1.7.1.3	Use of graphical symbols	Operating/safety instructions made available to the user.	P
1.7.2	Safety instructions and marking		P
1.7.2.1	General		P
1.7.2.2	Disconnect devices	Appliance coupler	P
1.7.2.3	Overcurrent protective device	Part of approve power supply	P
1.7.2.4	IT power distribution systems	Not intended for IT power distribution systems.	N/A
1.7.2.5	Operator access with a tool	No operator access with a tool.	P
1.7.2.6	Ozone	No such Ozone generator	N/A
1.7.3	Short duty cycles	Intended for continuous operation	N/A
1.7.4	Supply voltage adjustment .....:	No such voltage adjustment is required	N/A
	Methods and means of adjustment; reference to installation instructions .....:		N/A
1.7.5	Power outlets on the equipment .....:	No power outlets present	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....:	Fuses are part of approved power supply.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.7	Wiring terminals		P
1.7.7.1	Protective earthing and bonding terminals ....:	Part of power inlet	P
1.7.7.2	Terminals for a.c. mains supply conductors	Unit is provided with IEC 60320 approved appliance inlet.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators		P
1.7.8.1	Identification, location and marking ....:	Power indicator is obvious.	P
1.7.8.2	Colours ....:	Only functional indicators	N/A
1.7.8.3	Symbols according to IEC 60417.....:	Caution Hot symbol in accordance with IEC 60417	P
1.7.8.4	Markings using figures .....:	Power button uses figures.	P
1.7.9	Isolation of multiple power sources .....:	Single power source.	N/A
1.7.10	Thermostats and other regulating devices .....:	No such thermostat and other regulating devices	N/A
1.7.11	Durability		P
1.7.12	Removable parts	Labels are not placed on removable parts	P
1.7.13	Replaceable batteries .....:	No batteries used	N/A
	Language(s) .....:		—
1.7.14	Equipment for restricted access locations.....:	Unit is not intended for restricted area.	N/A

2	**PROTECTION FROM HAZARDS**		P
2.1	**Protection from electric shock and energy hazards**		P
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts	Only SELV circuit and dead metal are accessible	P
	Test by inspection .....:	All live parts are enclosed.	P
	Test with test finger (Figure 2A) .....:	See above	P
	Test with test pin (Figure 2B) .....:	See above	P
	Test with test probe (Figure 2C) .....:	Not TNV circuit.	N/A
2.1.1.2	Battery compartments	No such battery compartment	N/A
2.1.1.3	Access to ELV wiring	No ELV voltage	N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)	(see appended tables 2.10.2 and 2.10.5)	—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wires are accessible	N/A
2.1.1.5	Energy hazards .....:	(see appended tables 2.1.1.5)	P
2.1.1.6	Manual controls	No such manual controller	N/A
2.1.1.7	Discharge of capacitors in equipment		P
	Measured voltage (V); time-constant (s) .....:	43Vrms (61Vpeak), after 1 sec.	—
2.1.1.8	Energy hazards – d.c. mains supply	No d.c mains supply.	N/A
	a) Capacitor connected to the d.c. mains supply ..:		N/A
	b) Internal battery connected to the d.c. mains supply :		N/A
2.1.1.9	Audio amplifiers .....:	No audio amplifier.	N/A
2.1.2	Protection in service access areas	Unit passed discharge of capacitor test, in addition Bare parts operating at Hazardous voltages are located/guarded that unintentional contact with such parts is unlikely during servicing operations involving other equipment. Any guard for compliance within this sub clause is easy to remove for servicing.	P
2.1.3	Protection in restricted access locations	Not intended for restricted access location.	N/A
2.2	**SELV circuits**		P
2.2.1	General requirements	(see appended table 2.2)	P
2.2.2	Voltages under normal conditions (V) ..... :	All accessible voltages are less than 42.4Vpk or 60Vdc and are classified as SELV. Evaluated as part of the power supply approval.	P
2.2.3	Voltages under fault conditions (V) ..... :	Evaluated as part of the power supply approval.	P
2.2.4	Connection of SELV circuits to other circuits .....:	SELV circuits only connected to other SELV circuits	P
2.3	**TNV circuits**		N/A
2.3.1	Limits	No such TNV circuits.	N/A
	Type of TNV circuits ..... :		—
2.3.2	Separation from other circuits and from accessible parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions ..... :		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed..... :		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed..... :		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	**Limited current circuits**		N/A
2.4.1	General requirements	No such limited current circuit.	N/A
2.4.2	Limit values		N/A
	Frequency (Hz).....:		—
	Measured current (mA).....:		—
	Measured voltage (V) .....:		—
	Measured circuit capacitance (nF or µF).....:		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	**Limited power sources**		N/A
	a) Inherently limited output	(see appended table 2.5) Power supply is rated 24Vdc, 21A.	N/A
	b) Impedance limited output	(see appended table 2.5)	N/A
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition	(see appended table 2.5)	N/A
	Use of integrated circuit (IC) current limiters	(See Annex CC)	N/A
	d) Overcurrent protective device limited output	(see appended table 2.5)	N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)..... :		—
	Current rating of overcurrent protective device (A) .:		—
2.6	**Provisions for earthing and bonding**		P
2.6.1	Protective earthing	All accessible metals are connected to the main protective earthing terminal	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.2	Functional earthing	Not provided	N/A
	Use of symbol for functional earthing .....:		N/A
2.6.3	Protective earthing and protective bonding conductors	The product protective earthing conductor has sufficient current carrying capacity	P
2.6.3.1	General		P
2.6.3.2	Size of protective earthing conductors		P
	Rated current (A), cross-sectional area (mm^2), AWG ..... :	20A, 16AWG	—
2.6.3.3	Size of protective bonding conductors		P
	Rated current (A), cross-sectional area (mm^2), AWG ..... :	20A, 1.0mm^2, 16AWG	—
	Protective current rating (A), cross-sectional area (mm^2), AWG ..... :		
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min) ..... :	9.5mΩ, 3.8V, 40A, 2 min.	P
2.6.3.5	Colour of insulation..... :	Green with yellow strips color is used for the grounding conductors	P
2.6.4	Terminals		P
2.6.4.1	General		P
2.6.4.2	Protective earthing and bonding terminals	Power inlet and stud is provided	
	Rated current (A), type, nominal thread diameter (mm) ..... :	10A, 3.0mm	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		P
2.6.5	Integrity of protective earthing		P
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switches or fuses in the grounding or bonding path.	P
2.6.5.3	Disconnection of protective earth		P
2.6.5.4	Parts that can be removed by an operator		P
2.6.5.5	Parts removed during servicing	Connections to protective earthing cannot be removed unless hazardous voltage is removed from the part simultaneously.	
2.6.5.6	Corrosion resistance	No risk of corrosion	P
2.6.5.7	Screws for protective bonding		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A
2.7	**Overcurrent and earth fault protection in primary circuits**		P
2.7.1	Basic requirements	Appliance inlet is protected with internal fuse of 6A @ 250V.	P
	Instructions when protection relies on building installation	EUT relies on fuse for overcurrent protection.	N/A
2.7.2	Faults not simulated in 5.3.7	Fuse is not shorted.	P
2.7.3	Short-circuit backup protection	It relies on building installation.	P
2.7.4	Number and location of protective devices ..... :	Where fuse provided is part of approved component for appliance inlet and power supply	P
2.7.5	Protection by several devices	Where fuse provided is part of approved component for appliance inlet and power supply	N/A
2.7.6	Warning to service personnel..... :	None required.	N/A
2.8	**Safety interlocks**		N/A
2.8.1	General principles	No such interlock.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) .....:		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test	(see appended table 5.2)	N/A
2.8.8	Mechanical actuators		N/A
2.9	**Electrical insulation**		P

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Clause	Requirement + Test	Result - Remark	Verdict
2.9.1	Properties of insulating materials	Natural rubber, hygroscopic materials and asbestos are not used as insulating materials.	P
2.9.2	Humidity conditioning		P
	Relative humidity (%), temperature (°C) ..... :	93% RH, 25°C	—
2.9.3	Grade of insulation	Basic and reinforced insulation	P
2.9.4	Separation from hazardous voltages	Part of approved power supply	P
	Method(s) used ..... :	b. Method 1	—
2.10	**Clearances, creepage distances and distances through insulation**		P
2.10.1	General		P
2.10.1.1	Frequency .....:	50-60 Hz	P
2.10.1.2	Pollution degrees .....:	PD 2	P
2.10.1.3	Reduced values for functional insulation	Refer to 5.3.4 (a)	P
2.10.1.4	Intervening unconnected conductive parts	No intervening conductive parts	N/A
2.10.1.5	Insulation with varying dimensions	Transformer is part of approved power supply.	N/A
2.10.1.6	Special separation requirements	No such separation used.	N/A
2.10.1.7	Insulation in circuits generating starting pulses	No ignition lamp present	N/A
2.10.2	Determination of working voltage	(See appended table 2.10.2)	P
2.10.2.1	General		P
2.10.2.2	RMS working voltage	Highes is 240Vrms	P
2.10.2.3	Peak working voltage	340 is highest Vpeak	P
2.10.3	Clearances	(see appended table 2.10.3)	P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages		P
	a) AC mains supply .....:	240Vac	P
	b) Earthed d.c. mains supplies .....:	Not connected to d.c. MAINS	N/A
	c) Unearthed d.c. mains supplies .....:	Not connected to d.c. MAINS	N/A
	d) Battery operation .....:	No batteries present.	N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	Refer to 5.3.4.	P
2.10.3.5	Clearances in circuits having starting pulses	No starting pulse circuit.	N/A
2.10.3.6	Transients from a.c. mains supply .....:	2500 Vpeak assumed	P
2.10.3.7	Transients from d.c. mains supply .....:	Not connected to d.c. Mains	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....:	Not a telecommunication network or cable distribution systems present.	N/A
2.10.3.9	Measurement of transient voltage levels	Assumed from 2.10.3.6	N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply .....:		N/A
	For a d.c. mains supply .....:		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances	(see appended table 2.10.3)	P
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests .....:	Material group IIIb is assumed to be used	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation	Part of certified power supply	N/A
2.10.5.1	General		N/A
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	N/A
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5.	Cemented joints	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.5.6	Thin sheet material – General		N/A
2.10.5.7	Separable thin sheet material		N/A
	Number of layers (pcs) .....:		—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.10	Thin sheet material – alternative test procedure		N/A
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.11	Insulation in wound components		N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage .....:		N/A
	a) Basic insulation not under stress .....:		N/A
	b) Basic, supplementary, reinforced insulation .....:		N/A
	c) Compliance with Annex U .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Two wires in contact inside wound component; angle between 45° and 90° .....:		N/A
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test	(see appended table 2.10.5)	—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage .....:		N/A
	- Basic insulation not under stress .....:		N/A
	- Supplementary, reinforced insulation .....:		N/A
2.10.6	Construction of printed boards		P
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	P
2.10.6.2	Coated printed boards	No coated boards present.	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	Not a multilayer printed board.	N/A
2.10.6.4	Insulation between conductors on different layers of a printed board	No double sided printed board present.	N/A
	Distance through insulation	(see appended table 2.10.5)	N/A
	Number of insulation layers (pcs).....:	See above	N/A
2.10.7	Component external terminations	No coating over external terminations.	N/A
2.10.8	Tests on coated printed boards and coated components	No coating printed boards.	N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling	No coating printed boards.	N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound	Where provided, is part of approved component.	N/A
2.10.11	Tests for semiconductor devices and cemented joints	Where provided, is part of approved component.	N/A
2.10.12	Enclosed and sealed parts	Where provided, is part of approved component.	N/A
3	**WIRING, CONNECTIONS AND SUPPLY**		P
3.1	**General**		P

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Clause	Requirement + Test	Result - Remark	Verdict
3.1.1	Current rating and overcurrent protection	All internal wires are UL recognized, PVC insulated, 300V. Flammability Rating: VW-1, 80°C. Primary wires are rated 16AWG intended for max current 10A. Product is rated 6A.	P
3.1.2	Protection against mechanical damage	Wires are routed and secured to prevent contact with any sharp edges or moving parts.	P
3.1.3	Securing of internal wiring	Wiring is secured in order to protect it from any excessive strain or loosening of connections or damage of insulation.	P
3.1.4	Insulation of conductors	(see appended table 5.2)	P
3.1.5	Beads and ceramic insulators	None present.	N/A
3.1.6	Screws for electrical contact pressure	No such screws	N/A
3.1.7	Insulating materials in electrical connections	Connections are metal to metal	P
3.1.8	Self-tapping and spaced thread screws	No self-tapping or spaced thread screws used.	N/A
3.1.9	Termination of conductors	All conductors are reliably secured.	P
	10 N pull test	All relevant conductors. No new hazard caused.	P
3.1.10	Sleeving on wiring	Sleeving not used as supplementary insulation.	N/A

3.2	**Connection to a mains supply**		P
3.2.1	Means of connection	Appliance coupler	P
3.2.1.1	Connection to an a.c. mains supply		P
3.2.1.2	Connection to a d.c. mains supply	A.C. mains only.	N/A
3.2.2	Multiple supply connections	Single supply only.	N/A
3.2.3	Permanently connected equipment	Not considered permanently connected.	N/A
	Number of conductors, diameter of cable and conduits (mm) ..... :		—
3.2.4	Appliance inlets	Approved-type IEC 60320 inlet.	P
3.2.5	Power supply cords	Not part of the unit	N/A
3.2.5.1	AC power supply cords	Power supply cord are suitable for the application and subject to destination country's nation	

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Clause	Requirement + Test	Result - Remark	Verdict
	Type ..... :		—
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief	Appliance coupler is used.	N/A
	Mass of equipment (kg), pull (N) ..... :		—
	Longitudinal displacement (mm) ..... :		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g) ..... :		—
	Radius of curvature of cord (mm)..... :		—
3.2.9	Supply wiring space		N/A
3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals	Not permanently connected.	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2)..... :		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm) ..... :		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	**Disconnection from the mains supply**		P
3.4.1	General requirement		P
3.4.2	Disconnect devices	Appliance coupler used.	P
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized	No parts remains energized.	N/A
3.4.5	Switches in flexible cords	No switches present	P
3.4.6	Number of poles - single-phase and d.c. equipment	Inlet disconnects LIVE and Neutral at once.	P
3.4.7	Number of poles - three-phase equipment	Single phase power.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.4.8	Switches as disconnect devices	Disconnect device is appliance coupler.	N/A
3.4.9	Plugs as disconnect devices	Appliance coupler is used.	N/A
3.4.10	Interconnected equipment	None	N/A
3.4.11	Multiple power sources	Single power supply connection.	N/A
3.5	**Interconnection of equipment**		N/A
3.5.1	General requirements	No interconnections	N/A
3.5.2	Types of interconnection circuits ..... :	See above.	N/A
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment		N/A
4	**PHYSICAL REQUIREMENTS**		P
4.1	**Stability**		P
	Angle of 10°	No sliding or tip over.	P
	Test force (N) .....:	EUT is not more than 25kg	N/A
4.2	**Mechanical strength**		P
4.2.1	General		P
	Rack-mounted equipment.	Not rack-mounted.	N/A
4.2.2	Steady force test, 10 N	No displacement	P
4.2.3	Steady force test, 30 N	No displacement	P
4.2.4	Steady force test, 250 N	No deformity on enclosure	P
4.2.5	Impact test		P
	Fall test	On Top enclosure	P
	Swing test	On Side enclosure	P
4.2.6	Drop test; height (mm) .....:	Not handheld or transportable type	N/A
4.2.7	Stress relief test	No polymeric enclosure	N/A
4.2.8	Cathode ray tubes	No CRT present.	N/A
	Picture tube separately certified .....:	No CRT present.	N/A
4.2.9	High pressure lamps	No pressure lamps present.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) .....:	Product is counter-top mounted	N/A
4.3	**Design and construction**		P

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.1	Edges and corners	Edges and corners are smooth and rounded.	P
4.3.2	Handles and manual controls; force (N)..... :	No handles or manual controls provided.	N/A
4.3.3	Adjustable controls	None provided	N/A
4.3.4	Securing of parts	Screws and nuts are secured enough to withstand the stresses in normal use.	P
4.3.5	Connection by plugs and sockets		P
4.3.6	Direct plug-in equipment	Not a direct plug-in.	N/A
	Torque .....:		—
	Compliance with the relevant mains plug standard .....:		N/A
4.3.7	Heating elements in earthed equipment	Heating element is powered by SELV power supply and is not connected to earth.	N/A
4.3.8	Batteries	No batteries present.	N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	Not exposed to oil or grease	N/A
4.3.10	Dust, powders, liquids and gases	The equipment does not generate dust or use powders, liquids, or gases.	N/A
4.3.11	Containers for liquids or gases	No containers for liquids or gases.	N/A
4.3.12	Flammable liquids .....:	No flammable liquids	N/A
	Quantity of liquid (l) .....:		N/A
	Flash point (°C) .....:		N/A
4.3.13	Radiation	No such raditaion emission.	N/A
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg) .....:		—
	Measured high-voltage (kV) .....:		—
	Measured focus voltage (kV) .....:		—
	CRT markings .....:		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Part, property, retention after test, flammability classification .....:		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....:		N/A
4.3.13.5	Lasers (including laser diodes) and LEDs		N/A
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class .....:		—
4.3.13.5.2	Light emitting diodes (LEDs)		
4.3.13.6	Other types .....:		N/A
4.4	**Protection against hazardous moving parts**		P
4.4.1	General		P
4.4.2	Protection in operator access areas ..... :	Fan blades are adequately enclosued or guarded.	P
	Household and home/office document/media shredders	Not household and home/office document/media shredders.	N/A
4.4.3	Protection in restricted access locations ..... :	EUT is not for restricted location.	N/A
4.4.4	Protection in service access areas	Unintentional contact with hazardous moving parts by service personnel is unlikely	P
4.4.5	Protection against moving fan blades	Fan are guarded.	P
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a)……:		N/A
	Is considered to cause pain, not injury. b) ……..:		N/A
	Considered to cause injury. c) ……:		N/A
4.4.5.2	Protection for users	Not considered to cause injury	P
	Use of symbol or warning ……..:		N/A
4.4.5.3	Protection for service persons	Not considered to cause injury	P
	Use of symbol or warning ……..:		N/A
4.5	**Thermal requirements**		P
4.5.1	General		P
4.5.2	Temperature tests		P
	Normal load condition per Annex L ..... :		—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat ..... :	(see appended table 4.5.5)	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.6	**Openings in enclosures**		P
4.6.1	Top and side openings	Corner opening on top enclosure has a width slighty above 5 mm. The opening 5° projection does not project above bare conductive parts of hazardous voltage. Hazardous voltage are insulated. Bare conductive parts are SELV circuit.	P
	Dimensions (mm) ..... :	5.08 mm in width.	—
4.6.2	Bottoms of fire enclosures	No bottom openings.	P
	Construction of the bottomm, dimensions (mm) .. :		—
4.6.3	Doors or covers in fire enclosures	No doors or covers	N/A
4.6.4	Openings in transportable equipment	Not a transportable equipment	N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm) ..... :		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes	No adhesives for constructional purposes.	N/A
	Conditioning temperature (°C), time (weeks) ..... :		—

4.7	**Resistance to fire**		P
4.7.1	Reducing the risk of ignition and spread of flame	Method 1 is used. Part of power supply evaluation.	P
	Method 1, selection and application of components wiring and materials		P
	Method 2, application of all of simulated fault condition tests	(see appended table 5.3)	N/A
4.7.2	Conditions for a fire enclosure		P
4.7.2.1	Parts requiring a fire enclosure	Fire enclosure enclosed all parts	P
4.7.2.2	Parts not requiring a fire enclosure		P
4.7.3	Materials		P
4.7.3.1	General		P
4.7.3.2	Materials for fire enclosures	Fire enclosures are metal Some of the material is polymeric	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.3	Materials for components and other parts outside fire enclosures	Connectors are made of material of Class V-2 min.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal components are rated V-2 or better, or are mounted on a PWB rated V-1 minimum. Internal wires are UL recognized types, secured by individual cables ties.	P
4.7.3.5	Materials for air filter assemblies	No air filter present.	N/A
4.7.3.6	Materials used in high-voltage components	No high voltage exceeding 4kV.	N/A
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		**P**
5.1	**Touch current and protective conductor current**		P
5.1.1	General	(see appended Table 5.1)	P
5.1.2	Configuration of equipment under test (EUT)		P
5.1.2.1	Single connection to an a.c. mains supply		P
5.1.2.2	Redundant multiple connections to an a.c. mains supply	Single supply connection.	N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	Single supply connection.	N/A
5.1.3	Test circuit	Figure 5A is used.	P
5.1.4	Application of measuring instrument		P
5.1.5	Test procedure		P
5.1.6	Test measurements		P
	Supply voltage (V) .....:	264, 60Hz.	—
	Measured touch current (mA) .....:	3.5 mA	—
	Max. allowed touch current (mA) .....:	See table 5.1	—
	Measured protective conductor current (mA) .....:	See table 5.1	—
	Max. allowed protective conductor current (mA)...:	3.5 mA	—
5.1.7	Equipment with touch current exceeding 3,5 mA	Does not exceed 3.5 mA.	N/A
5.1.7.1	General .....:		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	Not telecommunication network.	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Measured touch current (mA) .....:		—
	Max. allowed touch current (mA) .....:		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports .....:		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A
5.2	**Electric strength**		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure		P
5.3	**Abnormal operating and fault conditions**		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	SELV fans are approved type. Stepper motors are used.	P
5.3.3	Transformers	Part of certified power supply	P
5.3.4	Functional insulation.....:	Functional insulation per methods b) and c), part or power supply approval. The suject equipment, other than the approved power supply employs functional insulation per method c).	P
5.3.5	Electromechanical components	No electromechanical components in secondary circuits.	N/A
5.3.6	Audio amplifiers in ITE .....:	No audio amplifiers	N/A
5.3.7	Simulation of faults		P
5.3.8	Unattended equipment	Considered attended.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests	No fire, emission of molten metal or deformation was noted during the fault tests.	P
5.3.9.2	After the tests	No fire, emission of molten metal or deformation was noted during the fault tests. Electric strength tests performed after fault tests with satisfactory results.	P

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Clause	Requirement + Test	Result - Remark	Verdict
6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		N/A
6.1	**Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment**		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements	Not connected to telecommunication network	N/A
	Supply voltage (V) .....:		—
	Current in the test circuit (mA) .....:		—
6.1.2.2	Exclusions .....:		N/A
6.2	**Protection of equipment users from overvoltages on telecommunication networks**		N/A
6.2.1	Separation requirements	Not connected to telecommunication network	N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test	(see appended table 5.2)	N/A
6.2.2.2	Steady-state test	(see appended table 5.2)	N/A
6.2.2.3	Compliance criteria		N/A
6.3	**Protection of the telecommunication wiring system from overheating**		N/A
	Max. output current (A) .....:	Not telecommunication network	—
	Current limiting method .....:		—
7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		N/A
7.1	**General**	No connection to Cable distribution system.	N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
A.1	**Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)**	The unit weight is 15.8kg	N/A
A.1.1	Samples.....:		—
	Wall thickness (mm) .....:		—
A.1.2	Conditioning of samples; temperature (°C) .....:		N/A
A.1.3	Mounting of samples .....:		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D .....:		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s) .....:		—
	Sample 2 burning time (s) .....:		—
	Sample 3 burning time (s) .....:		—
A.2	**Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)**		N/A
A.2.1	Samples, material.....:		—
	Wall thickness (mm) .....:		—
A.2.2	Conditioning of samples; temperature (°C) .....:		N/A
A.2.3	Mounting of samples .....:		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C .....:		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s) .....:		—
	Sample 2 burning time (s) .....:		—
	Sample 3 burning time (s) .....:		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s) .....:		—
	Sample 2 burning time (s) .....:		—
	Sample 3 burning time (s) .....:		—
A.3	**Hot flaming oil test (see 4.6.2)**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A
B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		P
B.1	**General requirements**	The SELV DC operated fans are UL recognized components. They comply with requirements of B.7	P
	Position .....:	Part of fan tray assembly. See appended table 1.5.1	—
	Manufacturer .....:	See appended table 1.5.1	—
	Type .....:	See appended table 1.5.1	—
	Rated values .....:	See appended table 1.5.1	—
B.2	**Test conditions**		N/A
B.3	**Maximum temperatures**	(see appended table 5.3)	N/A
B.4	**Running overload test**	(see appended table 5.3)	N/A
B.5	**Locked-rotor overload test**		N/A
	Test duration (days) .....:		—
	Electric strength test: test voltage (V) .....:		—
B.6	**Running overload test for d.c. motors in secondary circuits**		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) .....:		N/A
B.7	**Locked-rotor overload test for d.c. motors in secondary circuits**	Part of fan approval.	N/A
B.7.1	General	Part of fan approval.	N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V) .....:		N/A
B.8	**Test for motors with capacitors**	(see appended table 5.3)	N/A
B.9	**Test for three-phase motors**	(see appended table 5.3)	N/A
B.10	**Test for series motors**		N/A
	Operating voltage (V) .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict

C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		N/A
	Position .....:	Part of certified power supply.	—
	Manufacturer .....:		—
	Type .....:		—
	Rated values .....:		—
	Method of protection..... :		—
C.1	**Overload test**		N/A
C.2	**Insulation**		N/A
	Protection from displacement of windings..... :		N/A

D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		P
D.1	**Measuring instrument**		P
D.2	**Alternative measuring instrument**		N/A

E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**		N/A

F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)**		P

G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		N/A
G.1	**Clearances**	Alternative method is not used.	N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	**Determination of mains transient voltage (V)**		N/A
G.2.1	AC mains supply .....:		N/A
G.2.2	Earthed d.c. mains supplies .....:		N/A
G.2.3	Unearthed d.c. mains supplies .....:		N/A
G.2.4	Battery operation .....:		N/A
G.3	**Determination of telecommunication network transient voltage (V) ..... :**		N/A
G.4	**Determination of required withstand voltage (V)**		N/A
G.4.1	Mains transients and internal repetitive peaks .....:		N/A
G.4.2	Transients from telecommunication networks .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	**Measurement of transient voltages (V)**		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	**Determination of minimum clearances ..... :**		N/A
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		N/A
J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		N/A
	Metal(s) used .....:	No electrochemical present	—
K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)**		N/A
K.1	Making and breaking capacity	No thermal controls	N/A
K.2	Thermostat reliability; operating voltage (V) .....:		N/A
K.3	Thermostat endurance test; operating voltage (V) .....:		N/A
K.4	Temperature limiter endurance; operating voltage (V) .....:		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation	(see appended table 5.3)	N/A
L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)**		N/A
L.1	Typewriters	Not a typewriter	N/A
L.2	Adding machines and cash registers	Not this type.	N/A
L.3	Erasers	Not erasers	N/A
L.4	Pencil sharpeners	Not pencil sharpeners	N/A
L.5	Duplicators and copy machines	Not copying machines	N/A
L.6	Motor-operated files	No motors present.	N/A
L.7	Other business equipment	3D printer	P
M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.1	Introduction	Not a telephone	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) .....:		—
M.3.1.2	Voltage (V) .....:		—
M.3.1.3	Cadence; time (s), voltage (V) .....:		—
M.3.1.4	Single fault current (mA) .....:		—
M.3.2	Tripping device and monitoring voltage .....:		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V) .....:		N/A
N	**ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)**		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	**ANNEX P, NORMATIVE REFERENCES**		—
Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		N/A
	- Preferred climatic categories .....:	When provided, it is part of approved power supply or appliance inlet.	N/A
	- Maximum continuous voltage .....:		N/A
	- Combination pulse current .....:		N/A
	Body of the VDR Test according to IEC60695-11-5.....:		N/A
	Body of the VDR. Flammability class of material (min V-1).....:		N/A
R	**ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)	No coated printed board.	N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
S.1	Test equipment	Not connected to telecommunication	N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		N/A
		EUT is rated IPx0	—
U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		N/A
			—
V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)**		N/A
V.1	Introduction		N/A
V.2	TN power distribution systems		N/A
W	**ANNEX W, SUMMATION OF TOUCH CURRENTS**		P
W.1	Touch current from electronic circuits		P
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		P
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	**ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)**		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A
Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**		N/A
Y.1	Test apparatus ..... :	Enclosure is made of metal.	N/A
Y.2	Mounting of test samples ..... :		N/A
Y.3	Carbon-arc light-exposure apparatus ..... :		N/A
Y.4	Xenon-arc light exposure apparatus ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

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

AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**	N/A

BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**	—

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

DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment**		N/A
DD.1	General	Not rack-mounted.	N/A
DD.2	Mechanical strength test, variable N……..:		N/A
DD.3	Mechanical strength test, 250N, including end stops……:		N/A
DD.4	Compliance……:		N/A

EE	**ANNEX EE, Household and home/office document/media shredders**		N/A
EE.1	General	Not shredder	N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols……:		N/A
	Information of user instructions, maintenance and/or servicing instructions……..:		N/A
EE.3	Inadvertent reactivation test……:		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols……:		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A) ……:		N/A
	Test with wedge probe (Figure EE1 and EE2) ……:		N/A

1.5.1	**TABLE: List of critical components**				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])

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Clause	Requirement + Test	Result - Remark	Verdict

Enclosure	Interchangeable	Interchangeable	Powder coated steel. Overall approximate dimensions are (102mm W x 489mm H x 184mm D), min thick is 1 mm.	EN60950-1	Evaluated as a part of this evaluation
ON/OFF Switch	E-Switch	R5BBLKREDFF2	10A@250V, 15A @125V	UL 1054 UL 61058-1 CSA C22.2# 61058-1 CSA C22.2#55 EN 61058-1	VDE, UL, CSA
Appliance Inlet	Schaffner	FN 9260	10A, 250V	EN 60320-1 UL 60320-1 CSA C22.2 # 60320-1	VDE, UL, CSA
Power Supply	Mean Well	RSP-500-24	Input: 100-240Vac, 50/60Hz, 5.9A Output: 24Vdc, 21A	EN 60950-1 IEC 60950-1 UL 60950-1 CSA C22.2 # 60950-1	TUV, UL, CSA
PCB	Interchangeable	Interchangeable	Flammability rating is V-0. Min. thick 1 mm	UL 94, EN 60950-1	UL, Evaluated as part of this evaluation
Internal Wires	Interchangeable	Interchangeable	Min 22 AWG, rated 80°C, 300V	UL 758, EN 60950-1	UL, Evaluated as part of this evaluation
Cooling Fans	PTI Pelonis	C8015L24BPLP1b-7	24Vdc, 0.049A, 1.17W, 2400 RPM, 24.45 CFM	UL 94, EN 60950-1	UL, Evaluated as part of this evaluation
Extruder DC Fan	PTI Pelonis	C4010L05BPLP1b-7	5Vdc, 0.078A, 0.39W, 4400 RPM, 3.87 CFM. Located in the center to cool down the print	UL 94, EN 60950-1	UL, Evaluated as part of this evaluation
Extruder DC Fan	PTI Pelonis	RBH5015B2	24Vdc, 0.12A, 5000 rpm.	UL 94, EN 60950-1	UL, Evaluated as part of this evaluation
LCD PWB	Interchangeable	Interchangeable	Flammability rating is V-0. Min thick 1 mm	UL 94, EN 60950-1	UL, Evaluated as part of this evaluation

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

Thermistor	Honeywell	135-104LAG-J01	Operating temperature -60°C to 300°C. Resistance 100kΩ	EN 60950-1	Evaluated as part of this evaluation
Extruder Heater	E3D	PR-A0-HEATER-24V-40W	24 Vdc, 44W max	EN 60950-1	Evaluated as part of this evaluation
Bed Heater	Tempco Electric Heater Corp	AS-HB0006	24Vdc, 360W	UL 499, EN60950-1, CSA C22.2#64	UL, CSA, Evaluated as part of this evaluation
Axis Motor	Shanghai Moons' Electric Co., Ltd.	MS17HD6P4150-01	Used for X & Y axis motor. 3.3 Vdc, 1.5A, Class B (130°C).	EN 60950-1	Evaluated as part of this evaluation
Extruder Motor	Shanghai Moons' Electric Co., Ltd.	MS17HD4P4150-07	2.55Vdc, 1.5A, Class B (130°C)	EN 60950-1	Evaluated as part of this evaluation
Z-Axis Motor	Lin Engineering	4118S-08P-07RO	5Vdc max, 1.00A	EN 60950-1	Evaluated as part of this evaluation
Connectors	Interchangeable	Interchangeable	Min. Flammability rating of V-1	UL 94, EN 60950-1	UL, Evaluated as part of this evaluation
Marking Label	MyAssetTag	AT-3347P-N	Adhered to painted steel.	EN 60950-1	Evaluated as part of this evaluation
Supplementary information: **[1] Provided evidence ensures the agreed level of compliance. See OD-CB2039**.					

1.5.1	TABLE: Opto Electronic Devices	N/A

Manufacturer ..... : N/A

Type..... : N/A

Separately tested ..... : N/A

Bridging insulation ..... : N/A

External creepage distance..... : N/A

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Clause	Requirement + Test	Result - Remark	Verdict

Internal creepage distance	:	N/A
Distance through insulation	:	N/A
Tested under the following conditions	:	N/A
Input	:	N/A
Output	:	N/A
supplementary information		
Part of approved power supply.		

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90 (60Hz)	4.32	6	385	--	--	Normal operating mode
100 (60Hz)	4.22	6	416	--	--	Normal operating mode
120 (60Hz)	3.39	6	400	--	--	Normal operating mode
220 (60Hz)	2.01	6	422	--	--	Normal operating mode
230 (60Hz)	1.71	6	370	--	--	Normal operating mode
240 (60Hz)	1.77	6	398	--	--	Normal operating mode
264 (60Hz)	1.61	6	390	--	--	Normal operating mode
90 (50Hz)	4.15	6	368	--	--	Normal operating mode
100 (50Hz)	4.02	6	393	--	--	Normal operating mode
120 (50Hz)	4.10	6	467	--	--	Normal operating mode
220 (50Hz)	1.79	6	375	--	--	Normal operating mode
230 (50Hz)	1.85	6	403	--	--	Normal operating mode
240 (50Hz)	1.75	6	394	--	--	Normal operating mode
264 (50Hz)	1.74	6	415	--	--	Normal operating mode
Supplementary information:						

2.1.1.5 c) 1)	TABLE: max. V, A, VA test	N/A

Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
--	--	--	--	--

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

--	--	--	--	--
supplementary information:				
Approved power supply is used.				

2.1.1.5 c) 2)	**TABLE: stored energy**	N/A

Capacitance C (µF)	Voltage U (V)	Energy E (J)
--	--	--
--	--	--
supplementary information:		
Approved power supply is used.		

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

2.2	TABLE: evaluation of voltage limiting components in SELV circuits	N/A

Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V peak	V d.c.	
--	--	--	--

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
--	--
supplementary information:	
Approved power supply is used.	

2.5	TABLE: Limited power sources	N/A

Circuit output tested:

Note: Measured Uoc (V) with all load circuits disconnected:

Components	Test condition (Single fault)	Uoc (V)	I_{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--
--	--	--	--	--	--	--

supplementary information: Power supply is not LPS power supply.

Sc=Short circuit, Oc=Open circuit

2.10.2	Table: working voltage measurement	N/A

Location	RMS voltage (V)	Peak voltage (V)	Comments
--	--	--	--
--	--	--	--

supplementary information:

Approved power supply is used.

IEC 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 (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Basic/supplementary:						
Between Live parts and enclosure (appliance inlet to enclosure) primary circuit	339	240	2.0	5.0	2.5	5.0
Between Live parts and dead metal	339	240	2.0	5.0	2.5	5.0
Supplementary information:						

2.10.5	TABLE: Distance through insulation measurements				N/A
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
--	--	--	--	--	--
--	--	--	--	--	--
Supplementary information: Approved components were used.					

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Clause	Requirement + Test	Result - Remark	Verdict

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

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

Test results:		Verdict
- Chemical leaks		N/A
- Explosion of the battery		N/A
- Emission of flame or expulsion of molten metal		N/A
- Electric strength tests of equipment after completion of tests		N/A
Supplementary information: No batteries presents.		

4.3.8	TABLE: Batteries	N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict

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

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

4.5	TABLE: Thermal requirements						P
	Supply voltage (V) .....:	90V, 60Hz	264V, 50Hz	--	--	--	—
	Ambient T_{min} (°C) .....:	25.2	25.2	--	--	--	—
	Ambient T_{max} (°C) .....:	25.2	25.2	--	--	--	—
Maximum measured temperature T of part/at.....:		T (°C)					Allowed T_{max} (°C)
Power Supply		33.2	31.1	--	--	--	80
Fan		32.4	29.7	--	--	--	75
Appliance inlet		28.6	25.9	--	--	--	85
Main Switch		31.5	30.6	--	--	--	75
Terminal block		34.6	32.3	--	--	--	85
Line Black wire		27.9	25.7	--	--	--	90
Main PCB		49.2	48.2	--	--	--	105
Motor X		66.2	62.3	--	--	--	120
Motor Y		67.2	63.9	--	--	--	120
Motor Z1		52.3	48.2	--	--	--	120
Motor Z2		48.0	44.0	--	--	--	120
Extruder motor1		34.4	32.8	--	--	--	120
Extruder motor2		30.2	27.7	--	--	--	120
Extruder heater fan1		46.9	47.1	--	--	--	75
Extruder heater fan2		34.4	30.9	--	--	--	75
15A Fuse		30.1	27.3	--	--	--	75
Touch screen PCB		57.8	57.8	--	--	--	105
Enclosure		33.2	31.1	--	--	--	60
Printing Surface		32.4	29.7	--	--	--	60
Supplementary information: Tested while printing on normal conditions with both heaters are on.							

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
Supplementary information: Resistance method was not used.							

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Clause	Requirement + Test	Result - Remark	Verdict

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

Part	Test temperature (°C)	Impression diameter (mm)
--	--	--
--	--	--
Supplementary information: Approved components are used.		

4.7	TABLE: Resistance to fire				N/A
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
--	--	--	--	--	--
--	--	--	--	--	--
Supplementary information: Enclosure is metal.					

5.1	TABLE: touch current measurement			P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
Neutral and enclosure	0.97	3.5	Close Earth, Normal Polarity, S1 close	
Neutral and enclosure	1.87	3.5	Close Earth, Normal Polarity, S1 open	
Neutral and enclosure	0.97	3.5	Close Earth, Reverse Polarity, S1 open	
Neutral and enclosure	1.87	3.5	Close Earth, Reverse Polarity, S1 close	
Neutral and enclosure	0.02	3.5	Open Earth, Reverse Polarity, S1 close	
Neutral and enclosure	0.02	3.5	Open Earth, Reverse Polarity, S1 open	
Neutral and enclosure	0.01	3.5	Open Earth, Normal Polarity, S1 open.	
Neutral and enclosure	0.02	3.5	Open Earth, Normal Polarity, S1 close	
supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Basic/supplementary:				
L/N and Accessible metal		DC	2121	No
L/N and USB		DC	2121	No
Reinforced:				
L/N and output connectors		AC	3000	No
Supplementary information:				

5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C) .....:	See below	—
	Power source for EUT: Manufacturer, model/type, output rating .....:	90V	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Vents	Blocked	90	3Hr	N/A	N/A	Unit run until temp stabalized.No excessive temperature rise, no hazard, no fire, no breakdown. See Chart below for temp details
Fan	Locked	90	3Hr	N/A	N/A	Unit run until temp stabalized.No excessive temperature rise, no hazard, no fire, no breakdown. See Chart below for temp details
Extruder Heat Sink Fan	Locked	90	3Hr	N/A	N/A	Unit run until temp stabalized.No excessive temperature rise, no hazard, no fire, no breakdown. See Chart below for temp details
Extruder Motor Fan	Locked	90	3Hr	N/A	N/A	Unit run until temp stabalized.No excessive temperature rise, no hazard, no fire, no breakdown. See Chart below for temp details
Printing Surface Theremosister	Bypass	90	1min	N/A	N/A	After exactly 1 min Display shows fault condidtion and does not function until re-set. No Hazard
Extruder Thermosister	Bypass	90	1min	N/A	N/A	After exactly 1 min Display shows fault condidtion and does not function until re-set. No Hazard
Supplementary information: 90 V, 60Hz						

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Clause	Requirement + Test	Result - Remark	Verdict

4.5	**TABLE: Thermal requirements**						P
	Supply voltage (V) .....:	90V, 60Hz	--	--	--	--	—
	Ambient T_{min} (°C) .....:	23.6	--	--	--	--	—
	Ambient T_{max} (°C) .....:	25.0	--	--	--	--	—
Maximum measured temperature T of part/at.....:		T (°C)					Allowed T_{max} (°C)
Power Supply		42.3	--	--	--	--	80
Fan		39.3	--	--	--	--	75
Appliance inlet		37.0	--	--	--	--	85
Main Switch		40.3	--	--	--	--	75
Terminal block		43.9	--	--	--	--	85
Line Black wire		38.6	--	--	--	--	90
Main PCB		51.5	--	--	--	--	105
Motor X		62.6	--	--	--	--	120
Motor Y		63.1	--	--	--	--	120
Motor Z1		51.9	--	--	--	--	120
Motor Z2		44.2	--	--	--	--	120
Extruder motor1		34.3	--	--	--	--	120
Extruder motor2		29.1	--	--	--	--	120
Extruder heater fan1		54.4	--	--	--	--	75
Extruder heater fan2		43.3	--	--	--	--	75
15A Fuse		36.9	--	--	--	--	75
Touch screen PCB		56.4	--	--	--	--	105
Enclosure		42.3	--	--	--	--	60
Printing Surface		39.3	--	--	--	--	60
Supplementary information: Block Vent. Tested while printing on normal conditions with both heaters are on.							

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

4.5	TABLE: Thermal requirements						P
	Supply voltage (V) .....:	90V, 60Hz	--	--	--	--	—
	Ambient T_{min} (°C) .....:	23.6	--	--	--	--	—
	Ambient T_{max} (°C) .....:	25.0	--	--	--	--	—
Maximum measured temperature T of part/at.....:		T (°C)					Allowed T_{max} (°C)
Power Supply		37.6	--	--	--	--	80
Fan		36.5	--	--	--	--	75
Appliance inlet		33.3	--	--	--	--	85
Main Switch		37.8	--	--	--	--	75
Terminal block		40.5	--	--	--	--	85
Line Black wire		32.5	--	--	--	--	90
Main PCB		47.8	--	--	--	--	105
Motor X		63.1	--	--	--	--	120
Motor Y		63.6	--	--	--	--	120
Motor Z1		51.6	--	--	--	--	120
Motor Z2		44.4	--	--	--	--	120
Extruder motor1		32.8	--	--	--	--	120
Extruder motor2		28.7	--	--	--	--	120
Extruder heater fan1		53.3	--	--	--	--	75
Extruder heater fan2		40.3	--	--	--	--	75
15A Fuse		34.3	--	--	--	--	75
Touch screen PCB		56.9	--	--	--	--	105
Enclosure		37.6	--	--	--	--	60
Printing Surface		36.5	--	--	--	--	60
Supplementary information: Block Fan. Tested while printing on normal conditions with both heaters are on.							

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

4.5	TABLE: Thermal requirements						P
	Supply voltage (V) .....:	90V, 60Hz	--	--	--	--	—
	Ambient T_{min} (°C) .....:	23.6	--	--	--	--	—
	Ambient T_{max} (°C) .....:	25.0	--	--	--	--	—
Maximum measured temperature T of part/at.....:		T (°C)					Allowed T_{max} (°C)
Power Supply		31.9	--	--	--	--	80
Fan		30.7	--	--	--	--	75
Appliance inlet		27.3	--	--	--	--	85
Main Switch		30.1	--	--	--	--	75
Terminal block		33.5	--	--	--	--	85
Line Black wire		27.2	--	--	--	--	90
Main PCB		48.0	--	--	--	--	105
Motor X		63.1	--	--	--	--	120
Motor Y		62.7	--	--	--	--	120
Motor Z1		49.8	--	--	--	--	120
Motor Z2		44.2	--	--	--	--	120
Extruder motor1		49.1	--	--	--	--	120
Extruder motor2		29.5	--	--	--	--	120
Extruder heater fan1		47.6	--	--	--	--	75
Extruder heater fan2		32.8	--	--	--	--	75
15A Fuse		28.4	--	--	--	--	75
Touch screen PCB		56.2	--	--	--	--	105
Enclosure		31.9	--	--	--	--	60
Printing Surface		30.7	--	--	--	--	60
Supplementary information: Locked Extruder Heatsink Fan. Tested while printing on normal conditions with both heaters are on.							

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

4.5	TABLE: Thermal requirements						P
	Supply voltage (V) .....:	90V, 60Hz	--	--	--	--	—
	Ambient T_{min} (°C) .....:	23.6	--	--	--	--	—
	Ambient T_{max} (°C) .....:	25.0	--	--	--	--	—
Maximum measured temperature T of part/at.....:		T (°C)					Allowed T_{max} (°C)
Power Supply		32.9	--	--	--	--	80
Fan		30.9	--	--	--	--	75
Appliance inlet		27.5	--	--	--	--	85
Main Switch		29.8	--	--	--	--	75
Terminal block		33.3	--	--	--	--	85
Line Black wire		27.4	--	--	--	--	90
Main PCB		49.7	--	--	--	--	105
Motor X		66.7	--	--	--	--	120
Motor Y		65.4	--	--	--	--	120
Motor Z1		51.1	--	--	--	--	120
Motor Z2		46.9	--	--	--	--	120
Extruder motor1		35.0	--	--	--	--	120
Extruder motor2		38.4	--	--	--	--	120
Extruder heater fan1		47.1	--	--	--	--	75
Extruder heater fan2		32.5	--	--	--	--	75
15A Fuse		28.5	--	--	--	--	75
Touch screen PCB		55.8	--	--	--	--	105
Enclosure		32.9	--	--	--	--	60
Printing Surface		30.9	--	--	--	--	60
Supplementary information: Locked Extruder Motor Fan. Tested while printing on normal conditions with both heaters are on.							

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

C.2	TABLE: transformers	N/A

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

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

supplementary information:

Transformer is part of approved power supply.

C.2	TABLE: transformers	N/A

Transformer

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Information technology equipment – Safety –

Part 1: General requirements

Differences according to ..... : EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013

Attachment Form No. ..... : EU_GD_IEC60950_1F
Attachment Originator..... : SGS Fimko Ltd
Master Attachment..... : Date 2014-02

EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 – CENELEC COMMON MODIFICATIONS

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Clauses, subclauses, notes, tables and figures which are additional to those in IEC60950-1 and it´s amendmets are prefixed “Z”		P
Contents (A2:2013)	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZD (informative) IEC and CENELEC code designations for flexible cords		P
General	Delete all the “country” notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1 Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2		P
General (A1:2010)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note		P

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
General (A2:2013)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list: 2.7.1 Note * 2.10.3.1 Note 2 6.2.2. Note * Note of secretary: Text of Common Modification remains unchanged.		P
1.1.1 (A1:2010)	**Replace** the text of NOTE 3 by the following. NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		P
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.	The unit is not supplied with any speaker devices or components.	P
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010	Noted	P
1.5.1 (Added info*)	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC. New Directive 2011/65/11 *	Noted	P
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.	Not a portable sound system	N/A
1.7.2.1 (A12.2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.		N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx Protection against excessive sound pressure from personal music players		N/A
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment for personal use, that: – is designed to allow the user to listen to recorded or broadcast sound or video; and – primarily uses headphones or earphones that can be worn in or on or around the ears; and – allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: – while the personal music player is connected to an external amplifier; or – while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. The requirements do not apply to: – hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.	Not a personal music player	N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	□□analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.		N/A
	Zx.2 Equipment requirements No safety provision is required for equipment that complies with the following: □□equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and □□a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" as described in EN 50332-1. NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx. All other equipment shall: a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and		N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off. d) have a warning as specified in Zx.3; and e) not exceed the following: 1) equipment provided as a package (player with Its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1. For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.		N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: □□□the symbol of Figure 1 with a minimum height of 5 mm; and □□□the following wording, or similar: "To prevent possible hearing damage, do not listen at high volume levels for long periods."  **Figure 1 – Warning label (IEC 60417-6044)** Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.	Not supplied with any speakers.	N/A
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed "programme simulation noise" described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.	Not supplied with listening devices.	N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.		N/A
	Zx.4.3 Wireless listening devices In wireless mode: □□with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and □□respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and □□with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		N/A
	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;	Protective devices are provided as integral part of the equipment.	P
	c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.	Not pluggable equipment type B or permanently connected. Product is not reliant on protection in the building installation.	N/A
2.7.2	This subclause has been declared 'void'.	Noted.	N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	Noted	N/A
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 | 0,75 [a)] | Over 6 up to and including 10| (0,75) [b)] 1,0 | Over 10 up to and including 16| (1,0) [c)] 1,5 | In the conditions applicable to Table 3B delete the words "in some countries" in condition [a)]. In NOTE 1, applicable to Table 3B, delete the second sentence.	No cord provided. Appliance inlet provided.	N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD	Noted.	N/A
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 | Delete the fifth line: conductor sizes for 13 to 16 A	Noted.	N/A
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artifical optical radiation).	No harmful radiation emission present.	N/A
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.	Noted.	N/A
Bibliography	Additional EN standards.		—

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

ZB ANNEX (normative) *SPECIAL NATIONAL CONDITIONS (EN)*			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In **Denmark**, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	Appliance inlet is provided.	N/A
1.2.13.14 (A11:2009)	In **Norway** and **Sweden**, for requirements see 1.7.2.1 and 7.3 of this annex.		P

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) ***SPECIAL NATIONAL CONDITIONS (EN)***			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.7.1 (A11:2009)	In **Finland, Norway** and **Sweden**, resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		N/A
1.5.8	In **Norway**, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		N/A
1.5.9.4	In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative)
SPECIAL NATIONAL CONDITIONS (EN)

Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	In **Finland**, **Norway** and **Sweden**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In **Finland**: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In **Norway**: “Apparatet må tilkoples jordet stikkontakt” In **Sweden**: “Apparaten skall anslutas till jordat uttag”		N/A
1.7.2.1 (A11:2009)	In **Norway** and **Sweden**, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11).”		

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) ***SPECIAL NATIONAL CONDITIONS (EN)***			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.” Translation to Swedish: ”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”		N/A
1.7.2.1 (A2:2013)	In **Denmark**, 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 **Denmark** shall be as follows: In **Denmark**: “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.”		N/A
1.7.5 1.7.5 (A11:2009)	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a. For **CLASS II EQUIPMENT** the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.		N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative)
SPECIAL NATIONAL CONDITIONS (EN)

Clause	Requirement + Test	Result - Remark	Verdict
1.7.5 (A2:2013)	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011. For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c, DK 1-1d or DK 1-5a. Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b. Justification the Heavy Current Regulations, 6c		N/A
2.2.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	Noted.	P
2.3.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	Noted.	P
2.3.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	Noted.	P
2.6.3.3	In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A.	Noted.	P
2.7.1	In the **United Kingdom**, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	Tested as a part of the power supply	P
2.10.5.13	In **Finland**, **Norway** and **Sweden**, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	Noted	P
3.2.1.1	In **Switzerland**, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A	Appliance inlet is used.	N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) ***SPECIAL NATIONAL CONDITIONS (EN)***			
Clause	Requirement + Test	Result - Remark	Verdict
	SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998:Plug Type 21, L+N, 250 V, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A		N/A
3.2.1.1	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding13 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 contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.		N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) ***SPECIAL NATIONAL CONDITIONS (EN)***			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1 (A2:2013)	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Justification the Heavy Current Regulations, 6c		N/A
3.2.1.1	In **Spain**, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. 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. 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. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.		N/A
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.		N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative)
SPECIAL NATIONAL CONDITIONS (EN)

Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In **Ireland**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.		N/A
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.	Noted.	P
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.		N/A
3.3.4	In the **United Kingdom**, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.		N/A
4.3.6	In the **United Kingdom**, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
4.3.6	In **Ireland**, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) ***SPECIAL NATIONAL CONDITIONS (EN)***			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	In **Finland**, **Norway** and **Sweden** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.		N/A
6.1.2.1 (A1:2010)	In **Finland**, **Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause: 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. Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.		N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) ***SPECIAL NATIONAL CONDITIONS (EN)***			
Clause	Requirement + Test	Result - Remark	Verdict
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14: - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		N/A
6.1.2.2	In **Finland**, **Norway** and **Sweden**, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	In **Finland**, **Norway** and **Sweden**, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
7.3 (A11:2009)	In **Norway** and **Sweden**, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

Annex ZD
(informative)

IEC and CENELEC code designations for flexible cords

Type of flexible cord	Code designations	
	IEC	CENELEC
PVC insulated cords		
Flat twin tinsel cord	60227 IEC 41	H03VH-Y
Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F
Ordinary polyvinyl chloride sheathed flexible cord	60277 IEC 53	H05VV-F H05VVH2-F
Rubber insulated cords		
Braided cord	60245 IEC 51	H03RT-F
Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F
Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F
Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F
Cords having high flexibility		
Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H
Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H
Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

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

Differences according to ..... :	UL 60950-1-07(Second Edition) + A1: 2011 + A2: 2014
Attachment Form No. ..... :	US_ND_IEC60950_1F
Attachment Originator ..... :	UL
Master Attachment ..... :	Date 2014-07

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

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

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are		N/A
	- rated 125 per cent of the equipment rating, and		N/A
	- are specially marked when specified (1.7.7)		N/A
3.3.5	Revise first column of Table 3E to “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration”		N/A
3.4.2	Motor control devices are provided for cord-connected equipment with a motor if the equipment is rated more than 12 A,	Not rated more than 12A.	N/A
	- or if the motor has a nominal voltage rating greater than 120 V		N/A
	- or is rated more than 1/3 hp (locked rotor current over 43 A)		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position		P
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the computer room remote power-off circuit	Not for computer room applications.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30	No flammable liquid storage.	N/A
4.3.13.5.1	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No lasers present.	N/A
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m^3 (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge		N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9m^2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less		N/A
	For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less		N/A
4.7.3.1	Non-metallic enclosures of equipment for use in spaces used for environmental air (plenums) are required to comply with UL 2043	Not for plenum	N/A
Annex H	Equipment that produces ionizing radiation complies with U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370)	No ionizing radiation emission.	N/A
	Other National Differences		P

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery backup systems, battery packs, cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cut-offs, thermostats, (multi-layer) transformer winding wire, surge protective devices, tubing, vehicle battery adapters, wire connectors, and wire and cables		P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply	Not connected to DC Mains.	N/A
	This maximum operating voltage includes consideration of the battery charging “float voltage” associated with the intended supply system, regardless of the marked power rating of the equipment		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V_{peak} or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions	Not telecommunication	N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts	No TNV circuit	N/A
2.6.2	Equipment with functional earthing marked with the functional earthing symbol (IEC 60417-6092)	No functional earthing	N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified		N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more reduce the risk of injury due to the implosion of the CRT	No CRT present.	N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.2	Equipment with handles complies with special loading tests	No handles present.	N/A
4.3.8	Battery packs for both portable and stationary applications comply with special component requirements	No battery pack presents.	N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals comply with a special touch current measurement tests	Not telecommunication.	N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are overloaded		N/A
	During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test is repeated twice (three tests total) using new components as necessary		N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC	Not telecommunication.	N/A
Annex EE	Articulated accessibility probe (Fig EE.3) is used for assessing accessibility to document/media shredders instead of the Figure 2A test finger	Not a shredder.	N/A
Annex M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions	No ringing signals.	N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear comply with special acoustic pressure requirements	Not telecommunication.	N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1 with A1:2009 and A2:2013
CANADA NATIONAL DIFFERENCES

Information technology equipment – Safety – Part 1: General requirements

Differences according to ..... : CAN/CSA-C22.2 No. 60950-1-07, Amd 1:2011, Amd 2:2014

Attachment Form No. ..... : CA_ND_IEC60950_1F
Attachment Originator..... : CSA
Master Attachment..... : Date (2015-05)

1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.		P
1.1.2	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		P
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A:	Equipment acceptable for connection to 20 A	P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the CEC/NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC/NEC are required to have special construction features and identification markings.		N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict
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."	See main TRF cl 1.7.1	N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC shall be marked with the voltage rating and “Class 2” or equivalent. Marking shall be located adjacent to the terminals and shall be visible during wiring.	No wiring terminals present.	N/A
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.		N/A
2.6	Equipment with isolated ground (earthing) receptacles are required to comply with NEC 250.146(D) and CEC 10-112 and 10-906(8).	No receptacles present.	N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	Not a power distribution unit.	N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.	Approved appliance inlet provided.	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.		N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.	Not intended for d.c. power or mains.	N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	Not permanently connected.	N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.5	Power supply cords are required to be no longer than 4.5 m in length. Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	Not permanently connected.	N/A
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0	No wiring terminals present.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm2).		N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for US/Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).		N/A
3.3.5	First column of Table 3E revised to require “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration.”		N/A
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).	Not rated more than 12A.	N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.		P
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.	Not for computer room application.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquid storage.	N/A
4.3.13.5.1	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No lasers present.	N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m3 (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.		N/A
	Non-metallic enclosures of equipment for use in spaces used for environmental air (plenums) are required to comply with UL 2043.		N/A
Annex H	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No ionizing radiation emission.	N/A
OTHER DIFFERENCES The following key national differences are based on requirements other than national regulatory requirements.			
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.	See safety component list	P

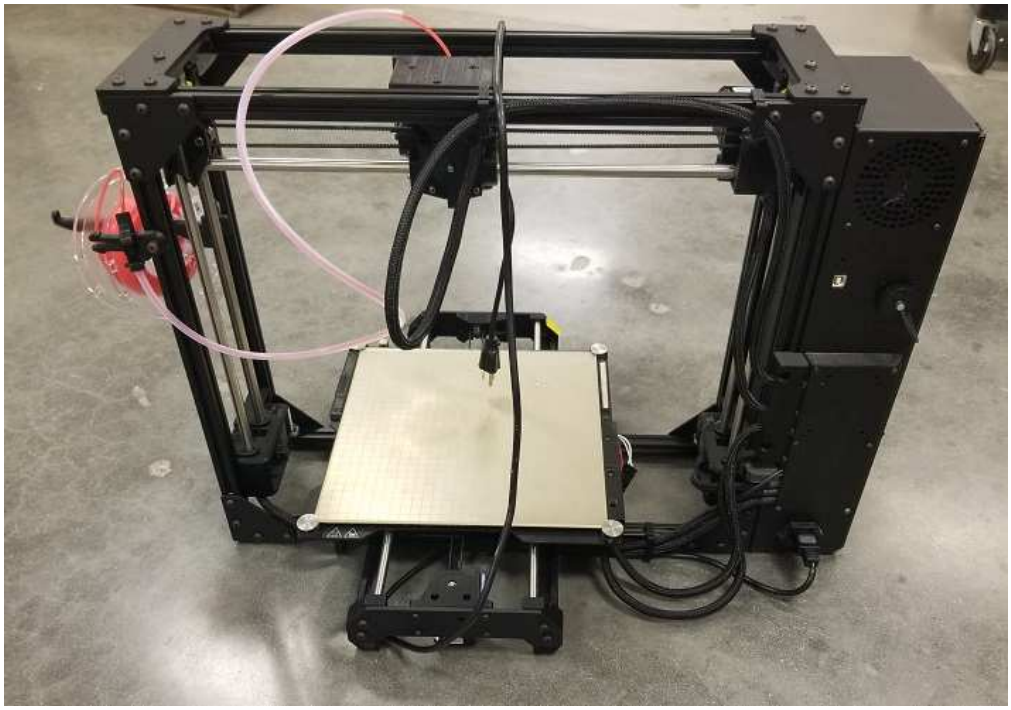
Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as either a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply. This maximum operating voltage shall include consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	Not for TNV circuits.	N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.		N/A
2.6.2	Equipment with functional earthing is required to be marked with the functional earthing symbol (IEC 60417-6092).	No such marking.	N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.		N/A
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 present.	N/A
4.3.2	Equipment with handles is required to comply with special loading tests.		N/A
4.3.8	Battery packs for both portable and stationary applications are required to comply with special component requirements.	No battery packs present.	N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded. During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.		N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.		N/A

Attachment #1 – National Group Differences			
Clause	Requirement + Test	Result - Remark	Verdict
Annex EE	UL articulated accessibility probe (Fig EE.3) required for assessing accessibility to document/media shredders instead of the Figure 2A test finger.	Not a shredder.	N/A
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No ringing signals.	N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.	Not telecommunication.	N/A

Attachment #2 – Photos			
Clause	Requirement + Test	Result - Remark	Verdict

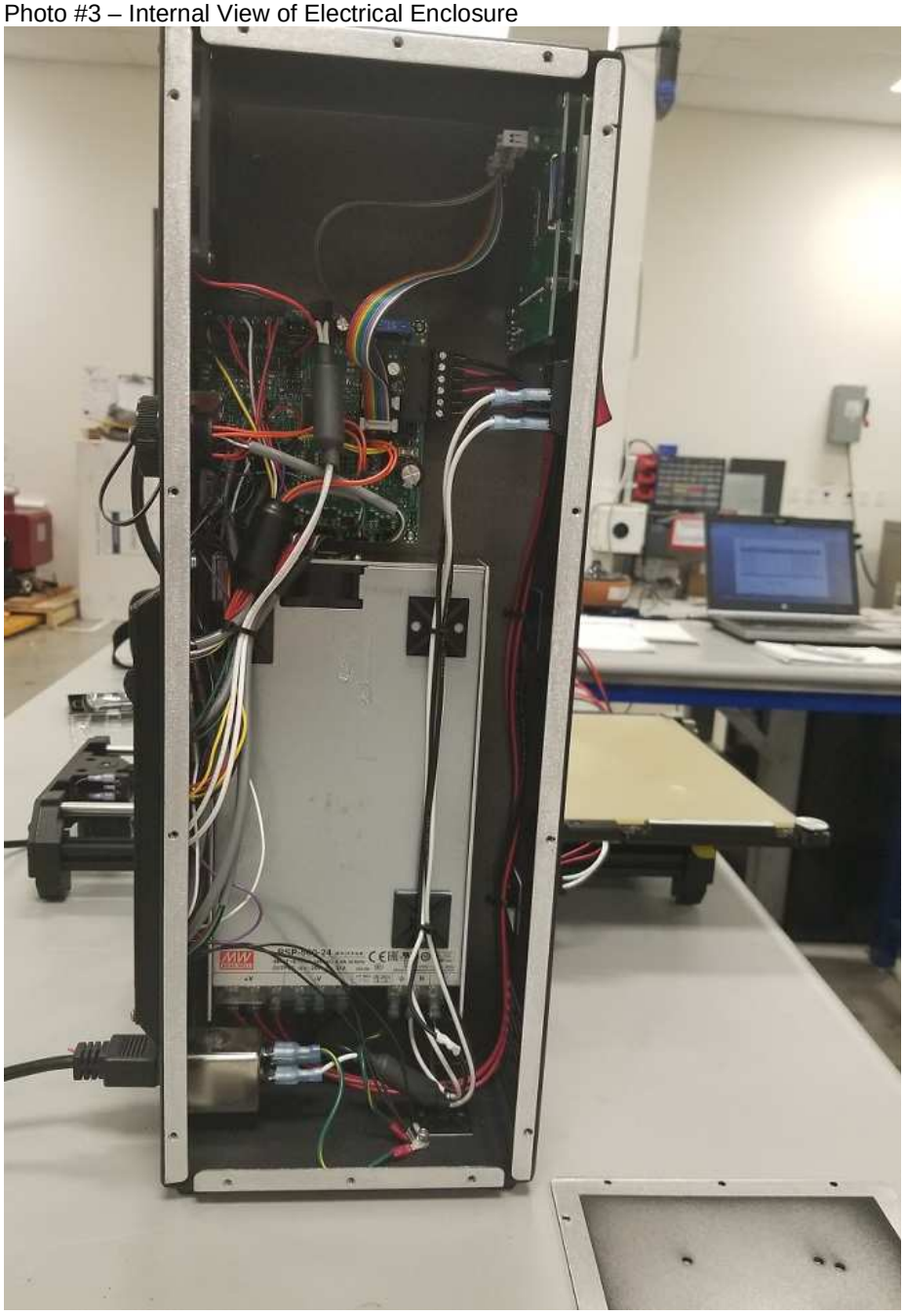
Photo #1 – Front View

Photo #2- Back View



Attachment #2 – Photos			
Clause	Requirement + Test	Result - Remark	Verdict

Photo #3 – Internal View of Electrical Enclosure



Attachment #2 – Photos			
Clause	Requirement + Test	Result - Remark	Verdict

Photo #4 – Internal View of Display PCB