




Test Report issued under the responsibility of:




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TEST REPORT IEC 62368-1 Audio/video, information and communication technology equipment Part 1: Safety requirements	
Report Number..... :	REP004392
Date of issue	2023-03-06
Total number of pages	85 pages, see page 4 for attachments
Name of Testing Laboratory preparing the Report	Nemko Shanghai Ltd. Shenzhen Branch
Applicant's name	GlobTek, Inc.
Address	186 Veterans Drive Northvale, NJ 7647 United States of America
Test specification:	
Standard	IEC 62368-1:2018
Test procedure.....	CB Scheme
Non-standard test method.....	N/A
TRF template used	IECEE OD-2020-F1:2021, Ed.1.4
Test Report Form No.....	IEC62368_1E
Test Report Form(s) Originator....	UL(US)
Master TRF	Dated 2022-04-14
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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.	
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Test item description	ITE/ICT Power Supply
Trade Mark(s)	
Manufacturer	Same as applicant
Model/Type reference	GTX41060ZWWVV-X.X (see general product information for model designation)
Ratings	I/P: 0.6A, 100-240Vac, 50-60Hz or 50/60Hz output: 3-30Vdc, max 25W, max 3.00A

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	Nemko Shanghai Ltd. Shenzhen Branch
Testing location/ address		Unit CD, Floor 2 & Floor 10, Tower 2, Kefa Road 8#, Hi-Technology Park, Nanshan District, Shenzhen, Guangdong, China
Tested by (name, function, signature)		Jefferson Li (Project Handler) 
Approved by (name, function, signature) ..		Jane Sun (Verifier) 
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ..		
<input type="checkbox"/>	Testing procedure: CTF Stage 2:	
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature) ..		
<input type="checkbox"/>	Testing procedure: CTF Stage 3:	
<input type="checkbox"/>	Testing procedure: CTF Stage 4:	
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature) ..		
Supervised by (name, function, signature) :		

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

1. Photos (6 pages)
2. PCB layout (2 page)
3. Transformer specification (4 pages)
4. European Deviation (23 pages)
5. Australia & New Zealand differences (8 pages)
6. U.S.A. and Canada national differences (8 pages)
7. Singapore differences (3 pages)
8. China differences (5 pages)
9. Saudi Arabia differences (1 page)
10. Japan differences (4 pages)
11. Nemko test report of EU plug, Ref. No. 175959P (7 pages)

Summary of testing:
Tests performed (name of test and test clause):

Clause	Test(s)
4	General Requirements
5	Electrically-caused injury
6	Electrically-caused fire
9	Thermal burn injury
B	Normal operating condition tests, abnormal operating condition tests and single fault condition tests
F	Equipment markings, instructions, and instructional safeguards
G	Components
L	Disconnect devices
O	Measurement of creepage distances and clearances
Q	Circuits intended for interconnection with building wiring
T	Mechanical strength tests
V	Determination of accessible parts

Testing location:

See page 3.

Summary of compliance with National Differences (List of countries addressed):

European, Australia & New Zealand, USA & Canada, Singapore, China, Saudi Arabia, Japan.

☒ **The product fulfils the requirements of IEC 62368-1: 2018 (Third Edition) and EN IEC 62368-1:2020+A11:2020.**

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Use of uncertainty of measurement for decisions on conformity (decision rule) :

☒ No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method").

☐ Other:... (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

Information on uncertainty of measurement:

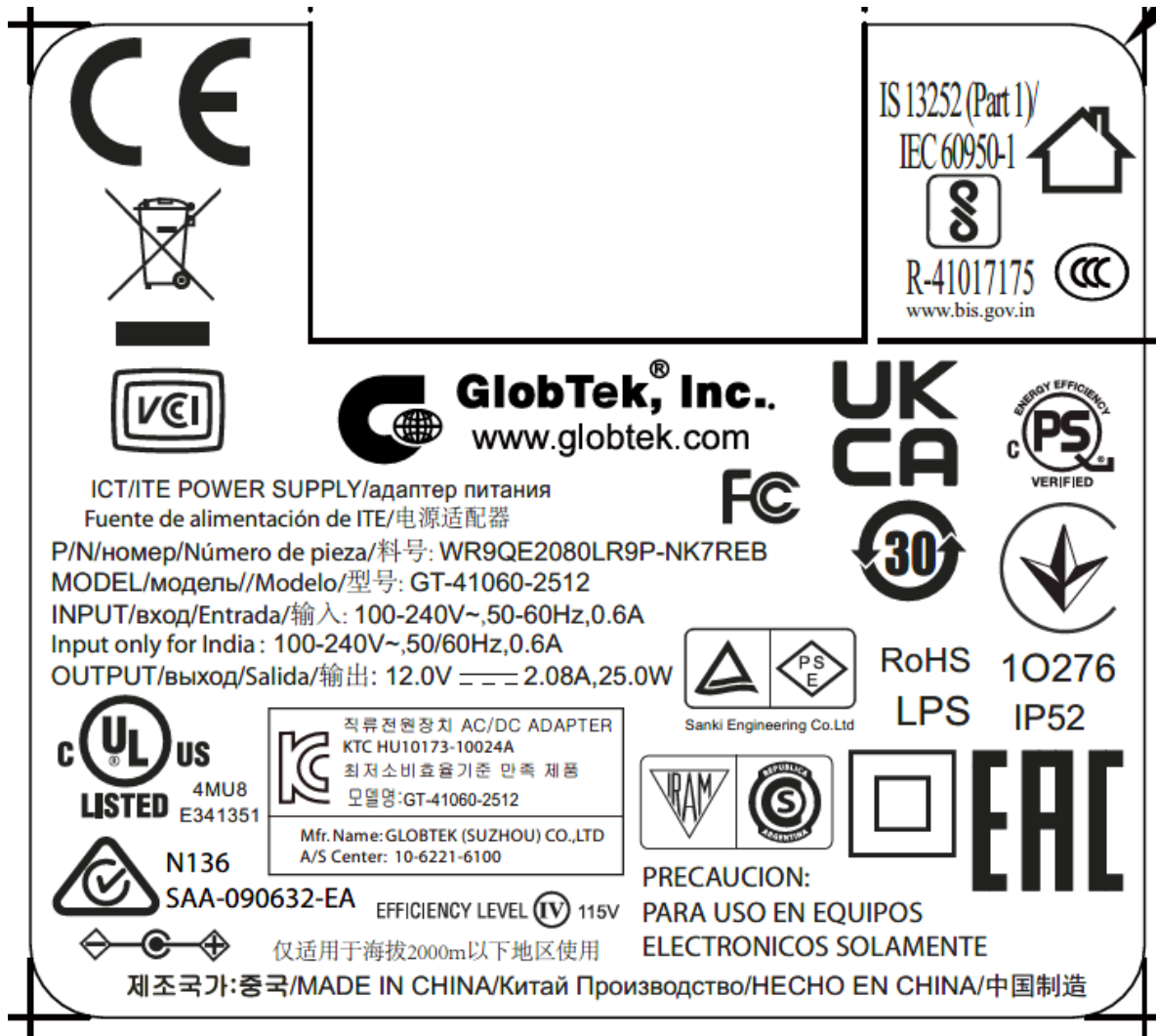
The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.

IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

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.



This is a representative label, others are same except model name.

Test item particulars:			
Product group	<input checked="" type="checkbox"/> end product	<input type="checkbox"/> built-in component	
Classification of use by	<input checked="" type="checkbox"/> Ordinary person	<input checked="" type="checkbox"/> Children likely present	
	<input type="checkbox"/> Instructed person		
	<input type="checkbox"/> Skilled person		
Supply connection.....	<input checked="" type="checkbox"/> AC mains	<input type="checkbox"/> DC mains	
	<input type="checkbox"/> not mains connected:		
	<input type="checkbox"/> ES1	<input type="checkbox"/> ES2	<input type="checkbox"/> ES3
Supply tolerance	<input checked="" type="checkbox"/> +10%/-10%		
	<input type="checkbox"/> +20%/-15%		
	<input type="checkbox"/> + %/ - %		
	<input type="checkbox"/> None		
Supply connection – type	<input checked="" type="checkbox"/> pluggable equipment type A -		
	<input type="checkbox"/> non-detachable supply cord		
	<input type="checkbox"/> appliance coupler		
	<input checked="" type="checkbox"/> direct plug-in		
	<input type="checkbox"/> pluggable equipment type B -		
	<input type="checkbox"/> non-detachable supply cord		
	<input type="checkbox"/> appliance coupler		
	<input type="checkbox"/> permanent connection		
	<input type="checkbox"/> mating connector	<input type="checkbox"/> other:	
	<input checked="" type="checkbox"/> 16A (20A for Canada and US)		
Considered current rating of protective device.....	Location:	<input checked="" type="checkbox"/> building	<input type="checkbox"/> equipment
	<input type="checkbox"/> N/A		
Equipment mobility	<input type="checkbox"/> movable	<input type="checkbox"/> hand-held	<input checked="" type="checkbox"/> transportable
	<input checked="" type="checkbox"/> direct plug-in	<input type="checkbox"/> stationary	<input type="checkbox"/> for building-in
	<input type="checkbox"/> wall/ceiling-mounted	<input type="checkbox"/> SRME/rack-mounted	
	<input type="checkbox"/> other:		
	<input type="checkbox"/> OVC I	<input checked="" type="checkbox"/> OVC II	<input type="checkbox"/> OVC III
Overvoltage category (OVC)	<input type="checkbox"/> OVC IV	<input type="checkbox"/> other:	
	<input type="checkbox"/> Class I	<input checked="" type="checkbox"/> Class II	<input type="checkbox"/> Class III
Class of equipment	<input type="checkbox"/> Not classified		
	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> restricted access area	
Special installation location	<input type="checkbox"/> outdoor location		
	<input type="checkbox"/> PD 1	<input checked="" type="checkbox"/> PD 2	<input type="checkbox"/> PD 3
Pollution degree (PD)			
Manufacturer's specified T _{ma}	40°C		
	<input type="checkbox"/> Outdoor: minimum °C		
IP protection class	<input checked="" type="checkbox"/> IPX0	<input type="checkbox"/> IP__	
Power systems	<input checked="" type="checkbox"/> TN	<input type="checkbox"/> TT	<input checked="" type="checkbox"/> IT - 230 V _{L-L}
	<input type="checkbox"/> not AC mains		
Altitude during operation (m)	<input type="checkbox"/> 2000 m or less	<input checked="" type="checkbox"/> up to 3500 m	
Altitude of test laboratory (m)	<input checked="" type="checkbox"/> 2000 m or less	<input type="checkbox"/> m	

Mass of equipment (kg) : 0.210kg Dimension: 56.0mm by 86.5mm by 40.5mm(without replaceable plug)	
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 : 2022-11-30 Date (s) of performance of tests : 2022-12-01 to 2023-03-02	
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 <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC62368-1:	
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:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) : 1. GlobTek, Inc. 186 Veterans Dr. Northvale, NJ 07647 USA 2. GlobTek (Suzhou) Co., Ltd Building 4, No. 76, Jinling East Road, Suzhou Industrial Park, Jiangsu 215021, P.R.China	

General product information and other remarks:

The equipment under tests is a Class II ICT/ITE POWER SUPPLY, designed for audio/video, information technology equipment and indoor use only.

External enclosure is made of min. V-0 plastic material. Two pieces of enclosure are enclosed with ultrasonic welding without screw.

The equipment uses replaceable plug part. Only Europe plug has been evaluated and compliance by EN50075. Other plugs should be checked when marketed in country.

Explanation of model designation GTX41060ZWWVV-X.X:

First X: can be "M" or "-" for market identification and not related to safety.

Z: can be - or CC, "-" = Constant Voltage Model, CC = Constant Current Model WW: rated output wattage, maximum 25

VV: rated output voltage, with a range of 3-30

-X.X is optional or blank, denotes the output voltage differentiator, subtracting or adding X.X volts from standard output voltage VV in 0.1V increments. VV-X.X together denotes a voltage range of 3-30Vdc.

Maximum rated output current is 3.00A

All models are identical except minor differences in transformer secondary winding and secondary circuit

The models GT-41060-1505 and GT-41060-2530 represent the worst case because the models have highest V, A and VA

Model designation	Output voltage	Output current	Output power
GT-41060-1505	5Vdc	3.00A	15W
GT-41060-2530	30Vdc	0.833A	25W

Unless otherwise specified, all tests were conducted under worst case.

Max. normal load condition: Output load to rated output.

Circuit characteristics: the equipment contains primary circuit and SELV circuit in secondary.

Maximum recommended ambient (Tma): 40°C.

OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	Possible Hazard			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES3: Primary circuits conductively connected to the mains	Ordinary	N/A	N/A	Enclosure: Annex T, no openings
ES3: Primary circuits conductively connected to the mains	Ordinary	N/A	N/A	Cl. & Cr. Distance comply 5.4.2 & 5.4.3; Dielectric Strength Test 5.4.9; Component comply Annex G
ES3: Primary Circuit (X-cap)	Ordinary	N/A	N/A	Bleeder resistor Voltage: according to 5.5.2.2
ES1: DC output	Ordinary	N/A	N/A	N/A
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
PS3: Internal circuit	Entry of foreign objects	N/A	N/A	No openings
PS3: Internal circuit	Internal combustible material	1)	Min. V-1 PCB, Min. V-0 Enclosure	N/A
PS3: Combustible material	Combustible material -Internal wire	1)	6.5.1 Complied with 60695- 11-21 or equivalent	N/A
PS2: DC output	Combustible material -Output wire	Comply with Annex Q	6.5.1 Complied with 60695- 11-21 or equivalent	N/A

7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Sharp edges and corners (none)	Ordinary	N/A	N/A	N/A
MS1: Less than 7kg (0.210 kg)	Ordinary	N/A	N/A	N/A
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: External plastic enclosure	Ordinary	N/A	N/A	N/A
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
RS1: LED indicating light	N/A	N/A	N/A	N/A
Supplementary Information:				
“B” – Basic Safeguard; “S” – Supplementary Safeguard; “R” – Reinforced Safeguard				
1) No ignition, Components inside of fire enclosure which measured temperature <300°C during test, refer to table 5.4.1.4, 6.3.2, 9.0, B.2.6.				

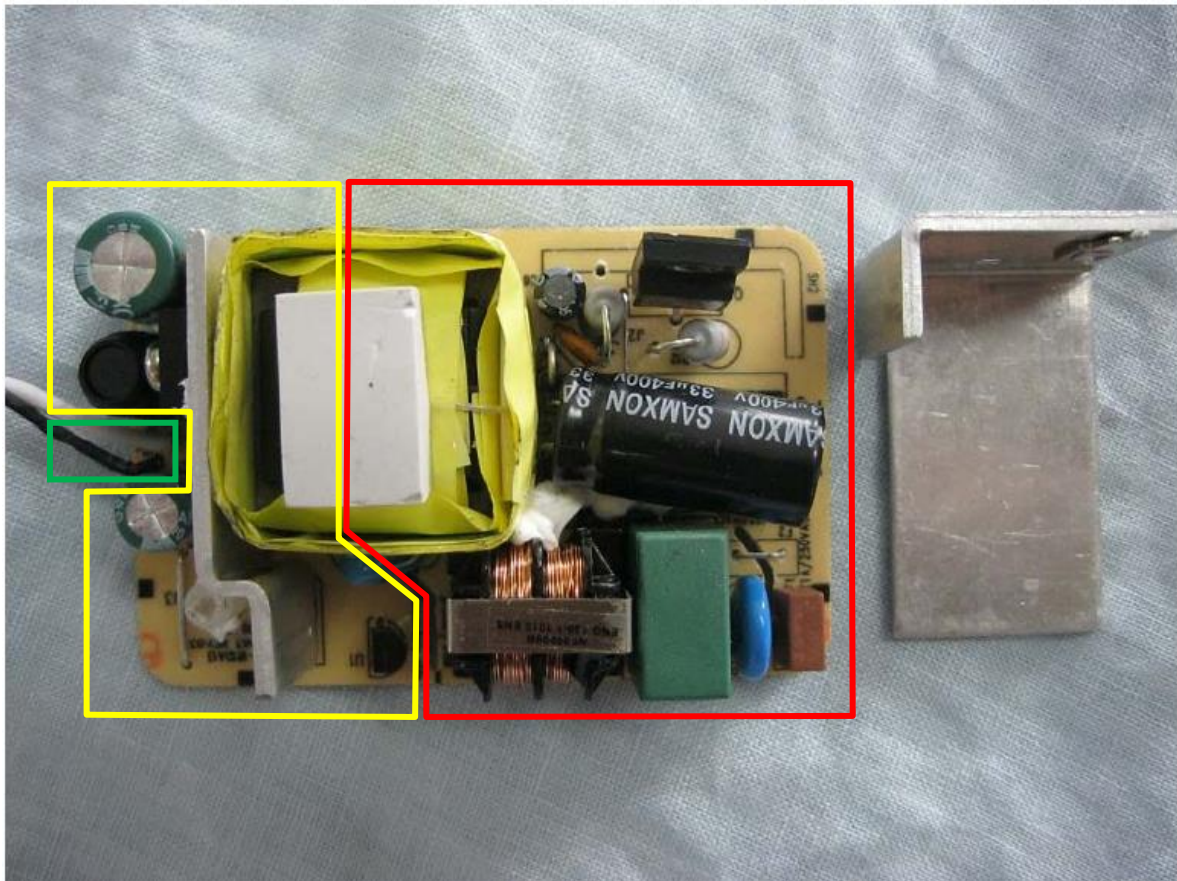
ENERGY SOURCE DIAGRAM

Optional. Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems.

Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings

 Class 1	 Class 2	 Class 3
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PCB component side



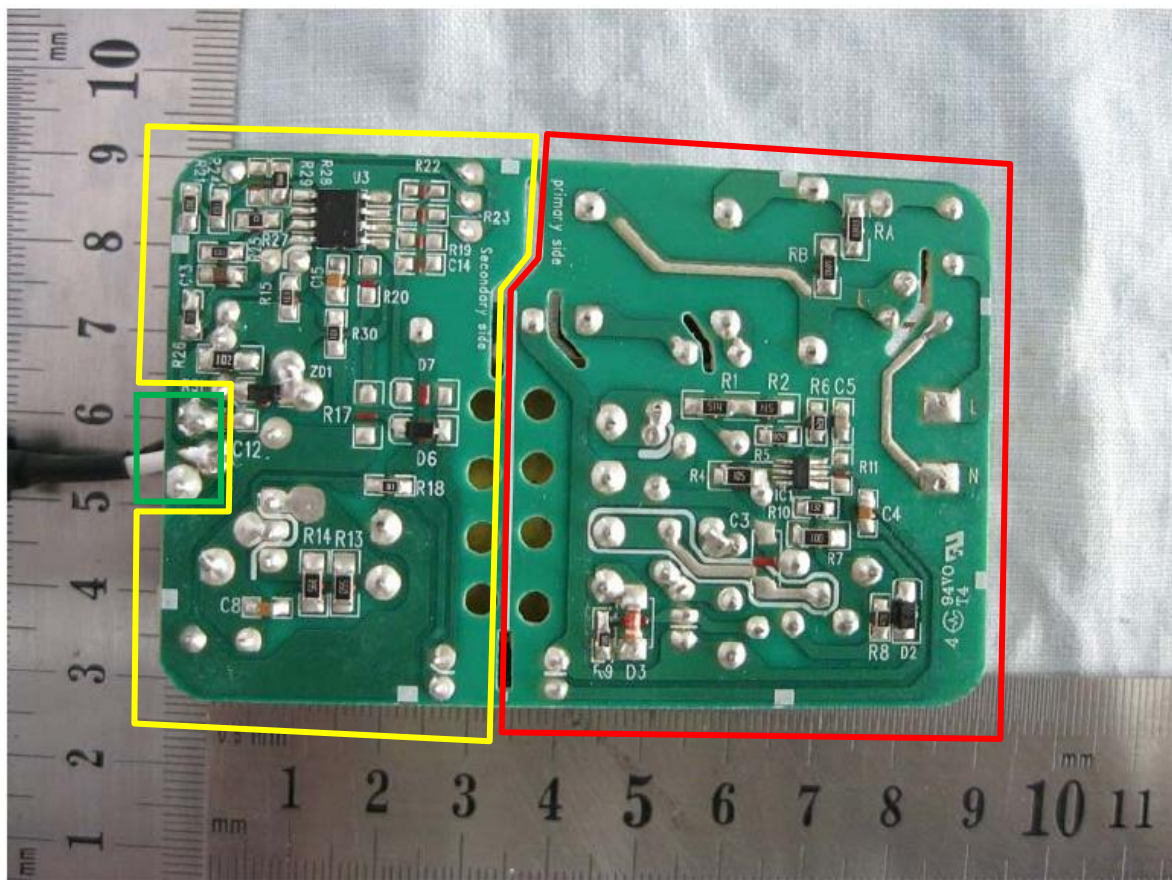
☒ ES ☐ PS ☐ MS ☐ TS ☐ RS

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Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings

■ Class 1	■ Class 2	■ Class 3
--	---	--

PCB solder side



☒ ES ☐ PS ☐ MS ☐ TS ☐ RS

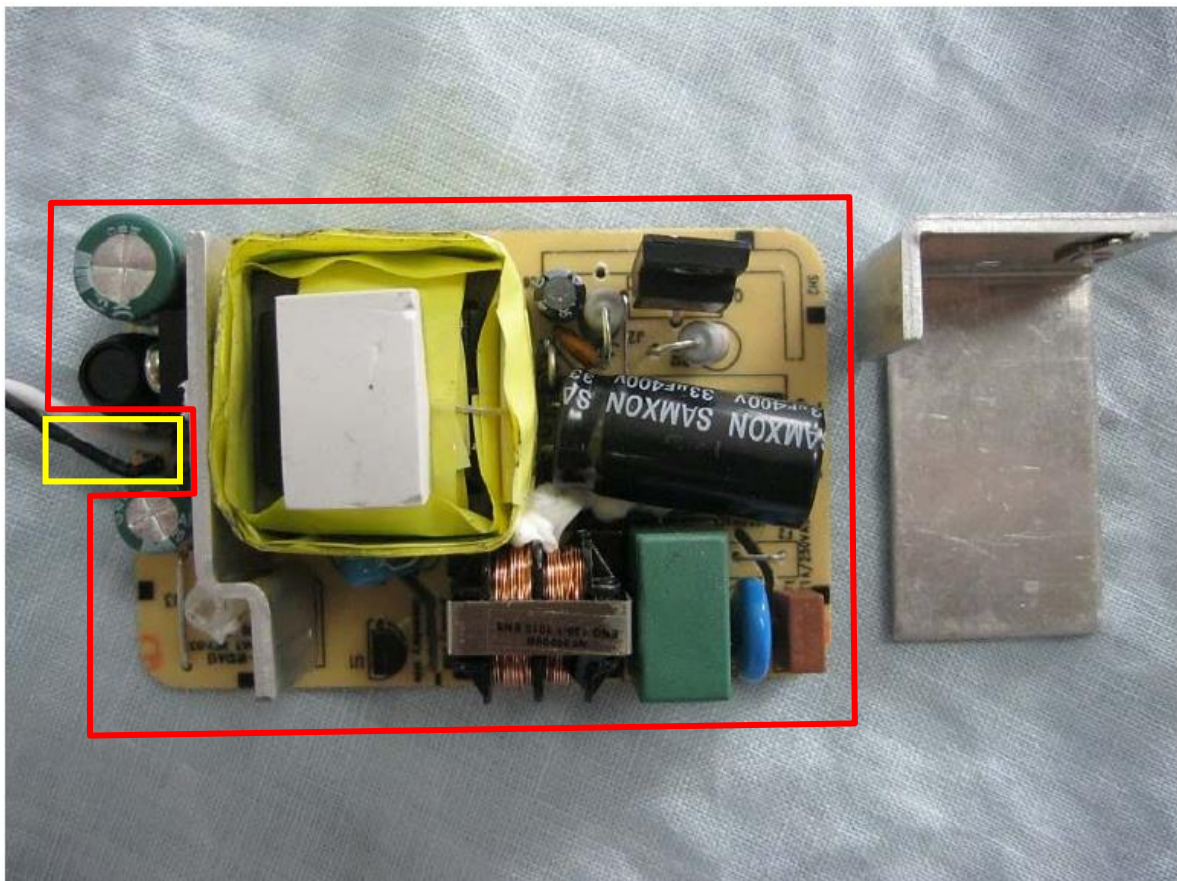
ENERGY SOURCE DIAGRAM

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Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings

	Class 1		Class 2		Class 3
---	---------	---	---------	---	---------

PCB component side



☐ ES ☒ PS ☐ MS ☐ TS ☐ RS

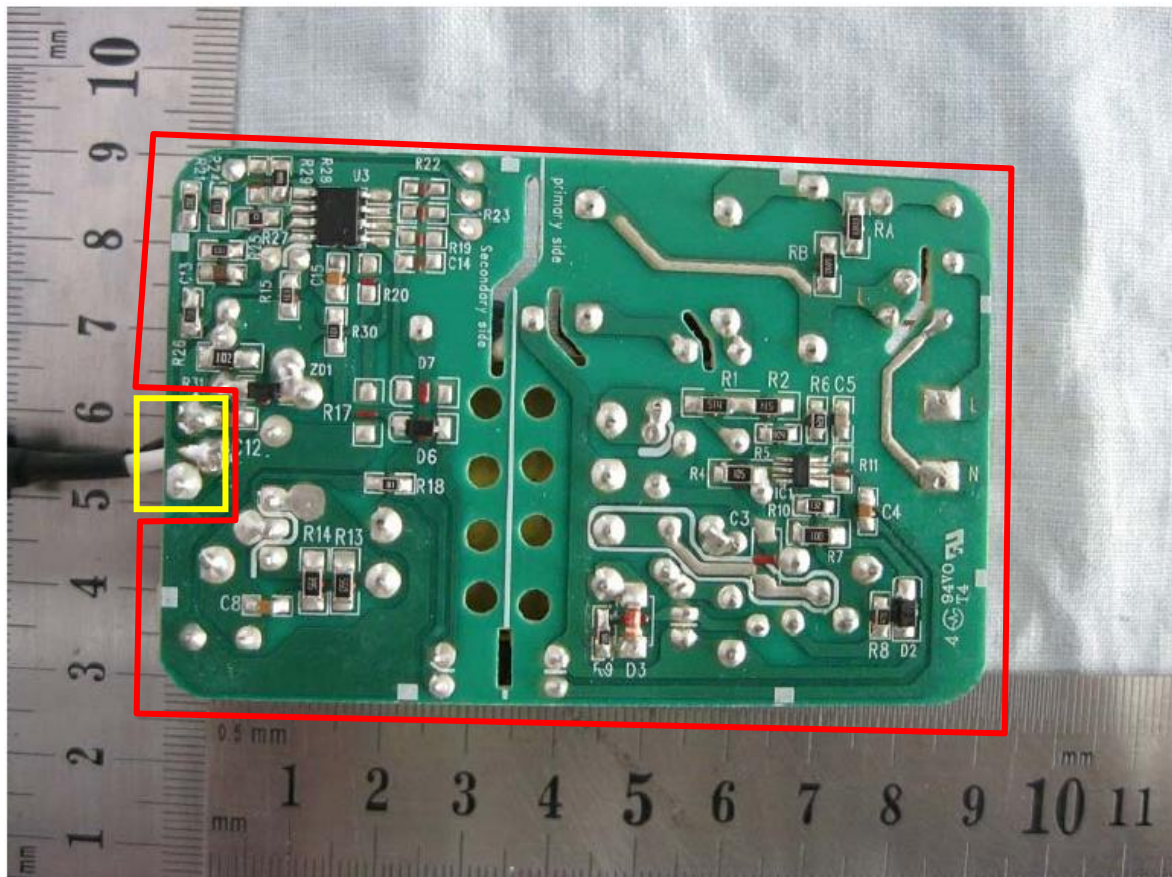
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Optional. Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems.

Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings

Class 1 Class 2 Class 3

PCB solder side



☐ ES ☒ PS ☐ MS ☐ TS ☐ RS

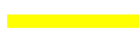
ENERGY SOURCE DIAGRAM

Optional. Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems.

Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings



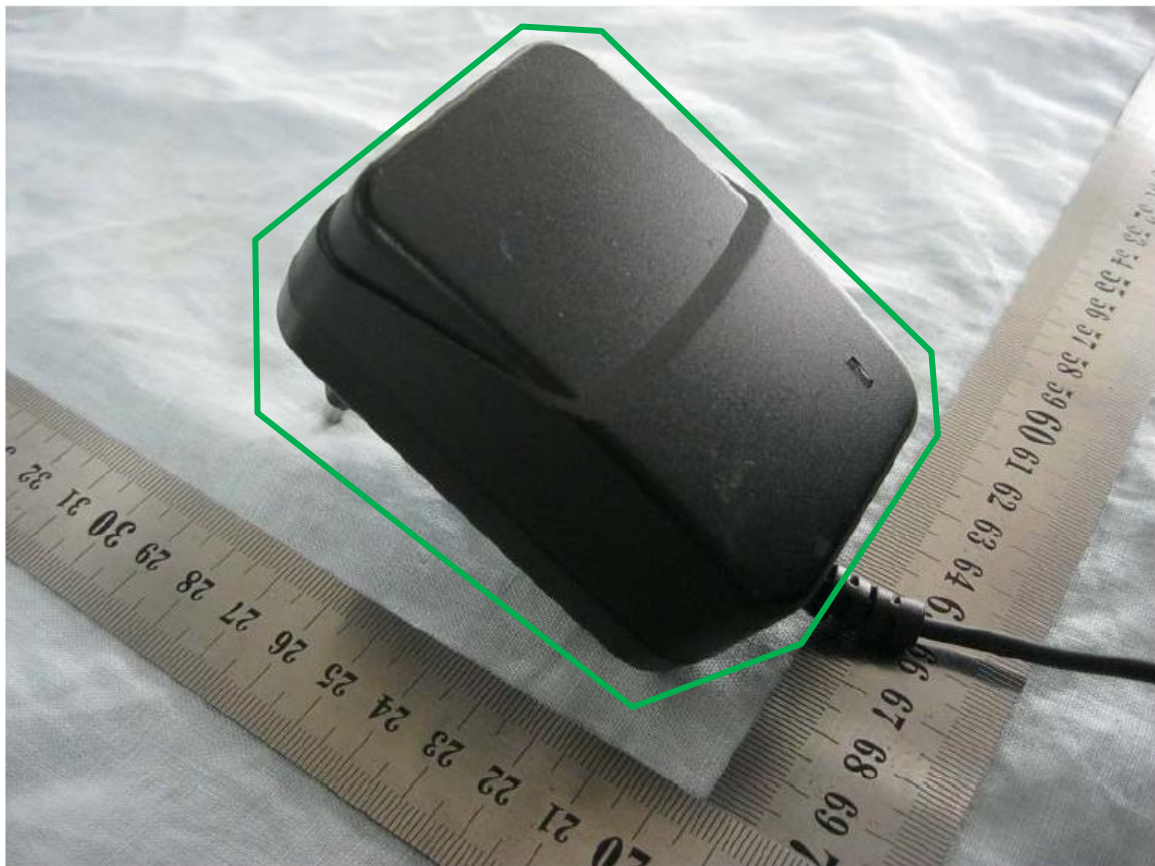
Class 1



Class 2



Class 3


☐ ES

☐ PS

☒ MS

☒ TS

☐ RS

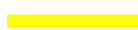
ENERGY SOURCE DIAGRAM

Optional. Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems.

Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings



Class 1



Class 2



Class 3



RS for LED indicating light

☐ ES

☐ PS

☐ MS

☐ TS

☒ RS

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	Refer to summary of testing and appended table 4.1.2.	P
4.1.2	Use of components	<p>Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard.</p> <p>Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 62368-1.</p>	P
4.1.3	Equipment design and construction	Equipment is adequately designed and constructed.	P
4.1.4	Specified ambient temperature for outdoor use (°C) :	Not for outdoor use.	N/A
4.1.5	Constructions and components not specifically covered	No such part.	N/A
4.1.8	Liquids and liquid filled components (LFC)	No LFC.	N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness	See below:	P
4.4.3.1	General	(See below)	P
4.4.3.2	Steady force tests	(See Clause T.5)	P
4.4.3.3	Drop tests	(See Annex T.7)	P
4.4.3.4	Impact tests	Direct plug-in equipment.	N/A
4.4.3.5	Internal accessible safeguard tests	No internal accessible area.	N/A
4.4.3.6	Glass impact tests	No glass.	N/A
4.4.3.7	Glass fixation tests		N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests	(See Annex T.8)	P
4.4.3.9	Air comprising a safeguard	(See Annex T.2)	P
4.4.3.10	Accessibility, glass, safeguard effectiveness	All safeguards remain effective.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.4.4	Displacement of a safeguard by an insulating liquid	No insulating liquid used.	N/A
4.4.5	Safety interlocks	No interlock.	N/A
4.5	Explosion		P
4.5.1	General		P
4.5.2	No explosion during normal/abnormal operating condition	(See Clause B.2, B.3)	P
	No harm by explosion during single fault conditions		N/A
4.6	Fixing of conductors	No conductors requiring safeguard.	N/A
	Fix conductors not to defeat a safeguard		N/A
	Compliance is checked by test..... :		N/A
4.7	Equipment for direct insertion into mains socket-outlets		P
4.7.2	Mains plug part complies with relevant standard .. :	The plug part for EU complies with EN 50075. See general product information.	P
4.7.3	Torque (Nm) :	< 0.25Nm.	P
4.8	Equipment containing coin/button cell batteries		N/A
4.8.1	General	No such battery.	N/A
4.8.2	Instructional safeguard :		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	Likelihood of fire or shock due to entry of conductive object		N/A
4.10	Component requirements		P
4.10.1	Disconnect Device	(See Annex L)	P
4.10.2	Switches and relays	No such component used.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5	ELECTRICALLY-CAUSED INJURY		P
5.2	Classification and limits of electrical energy sources		P
5.2.2	ES1, ES2 and ES3 limits	See below:	P
5.2.2.2	Steady-state voltage and current limits	(See appended table 5.2)	P
5.2.2.3	Capacitance limits	(See appended table 5.2)	P
5.2.2.4	Single pulse limits	No single pulses generated.	N/A
5.2.2.5	Limits for repetitive pulses	No repetitive pulses generated.	N/A
5.2.2.6	Ringing signals	No ringing signals generated.	N/A
5.2.2.7	Audio signals		N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	Sufficient safeguard was provided between energy source and ordinary person.	P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits	Reinforced safeguard was provided between energy source and ordinary person.	P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors	Ordinary person considered only.	N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards	ES3 parts were not accessible to ordinary persons.	P
	Accessibility to outdoor equipment bare parts	Not intend to outdoor used.	N/A
5.3.2.2	Contact requirements	No openings in the enclosure.	N/A
	Test with test probe from Annex V		—
5.3.2.2 a)	Air gap – electric strength test potential (V)		N/A
5.3.2.2 b)	Air gap – distance (mm)		N/A
5.3.2.3	Compliance		N/A
5.3.2.4	Terminals for connecting stripped wire	No such terminal.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	Insulating material complied with cl. 5 and Annex T. No hygroscopic material.	P
5.4.1.3	Material is non-hygroscopic	See clause 5.4.8 and 5.4.9	P
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4) Transformer insulation system is certified by UL.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.5	Pollution degrees	2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling test		N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such part.	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such part.	N/A
5.4.1.8	Determination of working voltage	(See appended table 5.4.1.8)	P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	Plug holder. See 5.4.1.10.3.	P
5.4.1.10.2	Vicat test.....		N/A
5.4.1.10.3	Ball pressure test	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances		P
5.4.2.1	General requirements	See below	P
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance	The highest voltage is temporary overvoltage.	P
	Temporary overvoltage	2000V peak	—
5.4.2.3	Procedure 2 for determining clearance	See below:	P
5.4.2.3.2.2	a.c. mains transient voltage	2500V peak	—
5.4.2.3.2.3	d.c. mains transient voltage		—
5.4.2.3.2.4	External circuit transient voltage.....		—
5.4.2.3.2.5	Transient voltage determined by measurement		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	Not used.	N/A
5.4.2.5	Multiplication factors for clearances and test voltages	Multiplication factor 1.22 for clearance is used. (up to 3500m)	P
5.4.2.6	Clearance measurement	(See appended table 5.4.2)	P
5.4.3	Creepage distances	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material group	IIIb	—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.3.4	Creepage distances measurement	(See appended table 5.4.3)	P
5.4.4	Solid insulation		P
5.4.4.1	General requirements	See below:	P
5.4.4.2	Minimum distance through insulation	(See appended table 5.4.4.2)	P
5.4.4.3	Insulating compound forming solid insulation	Optocoupler is complied with 5.4.4.2 and 5.4.1.5.2.	P
5.4.4.4	Solid insulation in semiconductor devices	Evaluated with cl. 5.4.4.3.	P
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material	(See appended table 5.4.4.2)	P
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material		P
	Number of layers (pcs)	(See appended table 5.4.4.2)	P
5.4.4.6.3	Non-separable thin sheet material	No such part.	N/A
	Number of layers (pcs)		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components	Insulation on winding wire complies with G.6.	P
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P , K_R , d , V_{PW} (V)	See below	P
	Alternative by electric strength test, tested voltage (V), K_R	(See appended Tables 5.4.4.9)	P
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance ($M\Omega$)		N/A
	Electric strength test		N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard	No such part	N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.8	Humidity conditioning	Test was performed on product with each source of transformer listed in table 4.1.2.	P
	Relative humidity (%), temperature (°C), duration (h)	95% r.h., 40°C, 120hr	—
5.4.9	Electric strength test	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for type test of solid insulation.....	Test voltage based on transient voltages. (See appended table 5.4.9)	P
5.4.9.2	Test procedure for routine test		N/A
5.4.10	Safeguards against transient voltages from external circuits		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test		N/A
5.4.10.2.3	Steady-state test.....		N/A
5.4.10.3	Verification for insulation breakdown for impulse test		N/A
5.4.11	Separation between external circuits and earth		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V)		—
	Nominal voltage U_{peak} (V)		—
	Max increase due to variation ΔU_{sp}		—
	Max increase due to ageing ΔU_{sa}		—
5.4.11.3	Test method and compliance		N/A
5.4.12	Insulating liquid		N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid		N/A
5.4.12.3	Compatibility of an insulating liquid		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.12.4	Container for insulating liquid		N/A
5.5	Components as safeguards		P
5.5.1	General		P
5.5.2	Capacitors and RC units		P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector	(See appended table 5.5.2.2)	P
5.5.3	Transformers	T1 (See Annex G.5.3)	P
5.5.4	Optocouplers	Optocoupler comply with the requirements of 5.4 or with Clause G.12.	P
5.5.5	Relays		N/A
5.5.6	Resistors		P
5.5.7	SPDs	(See Annex G.8)	P
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable		N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment	Not outdoor equipment.	N/A
	RCD rated residual operating current (mA)		—
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6	Protective conductor	Class II equipment.	N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm ²)		—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm ²).		—
5.6.4.2	Protective current rating (A).....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)..... :		N/A
	Terminal size for connecting protective bonding conductors (mm) :		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective bonding system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method..... :		N/A
5.6.6.3	Resistance (Ω) or voltage drop..... :		N/A
5.6.7	Reliable connection of a protective earthing conductor		N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm ²)..... :		N/A
	Class II with functional earthing marking :		N/A
	Appliance inlet cl & cr (mm)..... :		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current	(See appended table 5.7.4)	P
5.7.2.2	Measurement of voltage		P
5.7.3	Equipment set-up, supply connections and earth connections		P
5.7.4	Unearthed accessible parts :	(See appended table 5.7.4)	P
5.7.5	Earthed accessible conductive parts :	Class II equipment.	N/A
5.7.6	Requirements when touch current exceeds ES2 limits	Touch current is within ES1.	N/A
	Protective conductor current (mA)..... :		N/A
	Instructional Safeguard..... :		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits	The equipment not intended connect to external circuits.	N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	a) Equipment connected to earthed external circuits, current (mA)		N/A
	b) Equipment connected to unearthed external circuits, current (mA)		N/A
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES		N/A
	Air gap (mm).....		N/A

6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of PS and PIS		P
6.2.2	Power source circuit classifications	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources	See below:	P
6.2.3.1	Arcing PIS	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS	(See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials	(See appended 5.4.1.4, 9.3, B.1.5, B.2.6 and B.3)	P
	Combustible materials outside fire enclosure	No combustible material outside fire enclosure.	N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method	Control fire spread was used.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	Supplementary safeguards		N/A
6.4.3.2	Single Fault Conditions		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		N/A
6.4.5.2	Supplementary safeguards		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.6	Control of fire spread in PS3 circuits	Secondary wire complied with IEC 60695-11-21 or equivalent, PCB is V-1 min. and the enclosure made of V-0 material.	P
6.4.7	Separation of combustible materials from a PIS	Contact points from AC plug pins to PCB and varistor (MOV1) are arcing PIS, and all circuit are resistive PIS. Min. V-0 enclosure is used for fire enclosure. Components complied with requirement, detail refer to table 6.2.3.1 and 6.2.3.2.	P
6.4.7.2	Separation by distance	All components are within PIS fire cone, refer to table 6.2.3.2.	P
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		P
6.4.8.2	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier	No fire barrier.	N/A
6.4.8.2.2	Requirements for a fire enclosure	Available power <4000W. Fire enclosure is made of metal.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	No openings in the fire enclosure.	N/A
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties		N/A
	Openings dimensions (mm)..... :		N/A
6.4.8.3.4	Bottom openings and properties		N/A
	Openings dimensions (mm)..... :		N/A
	Flammability tests for the bottom of a fire enclosure		N/A
	Instructional Safeguard..... :		N/A
6.4.8.3.5	Side openings and properties		N/A
	Openings dimensions (mm)..... :		N/A
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating	Fire enclosure is made of V-0 material.	P
6.4.9	Flammability of insulating liquid.....	No such part.	N/A
6.5	Internal and external wiring		P
6.5.1	General requirements	DC output cord complied with IEC 60695-11-21. The test method described in IEC 60695-11-21 is considered equivalent to that test wiring materials which bearing VW-1 rating (according to UL758).	P
6.5.2	Requirements for interconnection to building wiring	Equipment is not intended to provide power over the wiring system.	N/A
6.5.3	Internal wiring size (mm ²) for socket-outlets.....		N/A
6.6	Safeguards against fire due to the connection to additional equipment		P

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards or personal protective equipment (PPE)		N/A
	Personal safeguards and instructions	No hazardous substances.	—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....	No hazardous substances.	—
7.6	Batteries and their protection circuits		N/A

8	MECHANICALLY-CAUSED INJURY		P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners		P
8.4.1	Safeguards	All edges and corners are rounded and/or smoothed, classified as MS1. 0.210 kg, classified as MS1.	P
	Instructional Safeguard		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.4.2	Sharp edges or corners	All edges and corners are rounded and/or smoothed.	P
8.5	Safeguards against moving parts		N/A
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	No moving parts.	N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard.....:		N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m).....:		N/A
	Space between end point and nearest fixed mechanical part (mm)		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N).....:		N/A
8.5.4.3.5	Compliance		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.5	High pressure lamps		N/A
	Explosion test.....:		N/A
8.5.5.3	Glass particles dimensions (mm)		N/A
8.6	Stability of equipment		N/A
8.6.1	General	MS1.	N/A
	Instructional safeguard.....:		N/A
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm)		—
	Tilt test		N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test		N/A
8.7	Equipment mounted to wall, ceiling or other structure		N/A
8.7.1	Mount means type	Not wall mount or ceiling mount.	N/A
8.7.2	Test methods		N/A
	Test 1, additional downwards force (N).....:		N/A
	Test 2, number of attachment points and test force (N).....:		N/A
	Test 3 Nominal diameter (mm) and applied torque (Nm).....:		N/A
8.8	Handles strength		N/A
8.8.1	General	Equipment is not intended to provide power over the wiring system.	N/A
8.8.2	Handle strength test		N/A
	Number of handles.....:		—
	Force applied (N)		—
8.9	Wheels or casters attachment requirements		N/A
8.9.2	Pull test		N/A
8.10	Carts, stands and similar carriers		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.10.1	General		N/A
8.10.2	Marking and instructions.....:		N/A
8.10.3	Cart, stand or carrier loading test		N/A
	Loading force applied (N)		N/A
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Force applied (N)		—
8.10.6	Thermoplastic temperature stability		N/A
8.11	Mounting means for slide-rail mounted equipment (SRME)		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard.....:		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied.....:		N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	Telescoping or rod antennas		N/A
	Button/ball diameter (mm)		—

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications		P
9.3	Touch temperature limits		P
9.3.1	Touch temperatures of accessible parts.....:	(See appended table 9.3)	P
9.3.2	Test method and compliance		P
9.4	Safeguards against thermal energy sources		P
9.5	Requirements for safeguards		P
9.5.1	Equipment safeguard	Enclosure provided to limit the transfer of thermal energy of internal parts under normal operating conditions and abnormal operating conditions.	P
9.5.2	Instructional safeguard.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General		N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance		N/A

10	RADIATION		P
10.2	Radiation energy source classification		P
10.2.1	General classification		P
	Lasers		—
	Lamps and lamp systems	LED indicating light is diffusive.	—
	Image projectors		—
	X-Ray		—
	Personal music player		—
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s) comply		N/A
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		N/A
10.4.1	General requirements		N/A
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and location		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure		N/A
10.4.3	Instructional safeguard		N/A
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements		N/A
	Instructional safeguard for skilled persons		—
10.5.3	Maximum radiation (pA/kg)		—
10.6	Safeguards against acoustic energy sources		N/A
10.6.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, dB(A).....:		N/A
	Unweighted RMS output voltage (mV).....:		N/A
	Digital output signal (dBFS)		N/A
10.6.3	Requirements for dose-based systems		N/A
10.6.3.1	General requirements		N/A
10.6.3.2	Dose-based warning and automatic decrease		N/A
10.6.3.3	Exposure-based warning and requirements		N/A
	30 s integrated exposure level (MEL30)		N/A
	Warning for MEL ≥ 100 dB(A)		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV).....:		N/A
10.6.6.2	Corded listening devices with digital input		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A)		N/A
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A)		N/A

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.1	General		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.2	Normal operating conditions		P
B.2.1	General requirements.....:	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers	No audio amplifier.	N/A
B.2.3	Supply voltage and tolerances	+10% / -10% (264V / 90V)	P
B.2.5	Input test.....:	(See appended table B.2.5)	P

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Clause	Requirement + Test	Result - Remark	Verdict
B.3	Simulated abnormal operating conditions		P
B.3.1	General	(See appended table B.3)	P
B.3.2	Covering of ventilation openings	No openings in enclosure.	N/A
	Instructional safeguard :		N/A
B.3.3	DC mains polarity test	Not connected to D.C. mains.	N/A
B.3.4	Setting of voltage selector	No voltage selector.	N/A
B.3.5	Maximum load at output terminals	(See appended table B.3)	P
B.3.6	Reverse battery polarity		N/A
B.3.7	Audio amplifier abnormal operating conditions	No audio amplifier.	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions :	All safeguards remain effective. (See appended table B.3)	P
B.4	Simulated single fault conditions		P
B.4.1	General		P
B.4.2	Temperature controlling device	No such device.	N/A
B.4.3	Blocked motor test	No motor.	N/A
B.4.4	Functional insulation	(See appended table B.4)	P
B.4.4.1	Short circuit of clearances for functional insulation	Clearance complied with 5.4.2.	P
B.4.4.2	Short circuit of creepage distances for functional insulation	Creepage complied with 5.4.3.	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated PCB used.	N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.4)	P
B.4.6	Short circuit or disconnection of passive components	(See appended table B.4)	P
B.4.7	Continuous operation of components	No component intended for short-time operation or intermittent operation.	N/A
B.4.8	Compliance during and after single fault conditions :	Plastic enclosure limited to TS1 during and after single fault conditions. Accessible output terminal limited to ES1 and TS1 during and after single fault conditions. No flame during and after single fault condition.	P

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.9	Battery charging and discharging under single fault conditions	No battery.	N/A
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements	The equipment does not produce UV radiation.	N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus..... :		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure test		N/A
C.2.4	Xenon-arc light-exposure test		N/A
D	TEST GENERATORS		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Electrical energy source classification for audio signals		N/A
	Maximum non-clipped output power (W)..... :		—
	Rated load impedance (Ω) :		—
	Open-circuit output voltage (V)..... :		—
	Instructional safeguard :		—
E.2	Audio amplifier normal operating conditions		N/A
	Audio signal source type :		—
	Audio output power (W) :		—
	Audio output voltage (V) :		—
	Rated load impedance (Ω) :		—
	Requirements for temperature measurement		N/A
E.3	Audio amplifier abnormal operating conditions		N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Language	English verified.	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1	A, V, Hz	P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific	AC symbol (IEC 60417-5032), DC symbol (IEC 60417-5031).	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	The required marking is located on the external enclosure of the equipment.	P
F.3.2	Equipment identification markings	Refer below.	P
F.3.2.1	Manufacturer identification	See page 2.	P
F.3.2.2	Model identification	See page 2.	P
F.3.3	Equipment rating markings	Refer below.	P
F.3.3.1	Equipment with direct connection to mains	Refer F.3.3.3 – F.3.3.6	P
F.3.3.2	Equipment without direct connection to mains	Direct connection to mains.	N/A
F.3.3.3	Nature of the supply voltage.....	~ (IEC 60417-5032)	—
F.3.3.4	Rated voltage	See page 2.	—
F.3.3.5	Rated frequency	See page 2.	—
F.3.3.6	Rated current or rated power.....	See page 2.	—
F.3.3.7	Equipment with multiple supply connections	Single supply connection.	N/A
F.3.4	Voltage setting device	No voltage selector. Auto ranging used.	N/A
F.3.5	Terminals and operating devices	Refer below.	N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings	No mains outlet.	N/A
F.3.5.2	Switch position identification marking.....	No switch.	N/A
F.3.5.3	Replacement fuse identification and rating markings	The primary fuse is located in Live and Neutral phase. It is marked: F1 and F2: T1AL or T2AL 250VAC	P
	Instructional safeguards for neutral fuse		P
F.3.5.4	Replacement battery identification marking	No battery.	N/A
F.3.5.5	Neutral conductor terminal	No such terminals.	N/A
F.3.5.6	Terminal marking location	Refer below.	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I equipment	Class II equipment.	N/A
F.3.6.1.1	Protective earthing conductor terminal..... :		N/A
F.3.6.1.2	Protective bonding conductor terminals :		N/A
F.3.6.2	Equipment class marking :	Class II equipment without functional earth. Symbol IEC 60417-5172 used.	P
F.3.6.3	Functional earthing terminal marking :	No functional earthing.	N/A
F.3.7	Equipment IP rating marking :	No IP rating.	N/A
F.3.8	External power supply output marking :		P
F.3.9	Durability, legibility and permanence of marking	Marking complies with the requirements.	P
F.3.10	Test for permanence of markings	Markings withstand the required test.	P
F.4	Instructions		P
	a) Information prior to installation and initial use		N/A
	b) Equipment for use in locations where children not likely to be present		N/A
	c) Instructions for installation and interconnection		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Equipment intended to be fastened in place		N/A
	f) Instructions for audio equipment terminals		N/A
	g) Protective earthing used as a safeguard		N/A
	h) Protective conductor current exceeding ES2 limits		N/A
	i) Graphic symbols used on equipment		P
	j) Permanently connected equipment not provided with all-pole mains switch		N/A
	k) Replaceable components or modules providing safeguard function		N/A
	l) Equipment containing insulating liquid		N/A
	m) Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General	No mains switch.	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance		N/A
G.2	Relays		N/A
G.2.1	Requirements	No relay.	N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supplying power to other equipment		N/A
G.2.4	Test method and compliance		N/A
G.3	Protective devices		P
G.3.1	Thermal cut-offs		N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links		N/A
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N/A
	b) Thermal links tested as part of the equipment		N/A
G.3.2.2	Test method and compliance		N/A
G.3.3	PTC thermistors		N/A
G.3.4	Overcurrent protection devices	F1 and F2 complied with IEC 60127.	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions :		N/A
G.4	Connectors		P
G.4.1	Spacings	Refer to G.4.2.	P
G.4.2	Mains connector configuration :	Direct plug-in equipment.	P

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Clause	Requirement + Test	Result - Remark	Verdict
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	The output terminal is unlikely insertion into mains socket-outlets or appliance coupler.	P
G.5	Wound components		P
G.5.1	Wire insulation in wound components	(See Annex J)	P
G.5.1.2	Protection against mechanical stress	Protection against mechanical stress is provided by insulation tape.	P
G.5.2	Endurance test		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Test time (days per cycle)		—
	Test temperature (°C).....		—
G.5.2.3	Wound components supplied from the mains		N/A
G.5.2.4	No insulation breakdown		N/A
G.5.3	Transformers		P
G.5.3.1	Compliance method.....	IEC 62368-1 cl.G.5.3.2 & G.5.3.3.	P
	Position	ES3 to ES2.	—
	Method of protection.....	Inherent.	—
G.5.3.2	Insulation	Reinforced.	P
	Protection from displacement of windings.....	Refer to transformer specification.	—
G.5.3.3	Transformer overload tests	(See appended table B.3)	P
G.5.3.3.1	Test conditions	Switch mode transformer tested in the complete equipment. Load applied to the output of the power supply unit.	P
G.5.3.3.2	Winding temperatures	Current limiting transformer, Class 130. Temperature limit: 175°C	P
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW		N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter.....		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation..... :		N/A
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A
G.5.3.4.7	Routine test		N/A
G.5.4	Motors	No motor.	N/A
G.5.4.1	General requirements		N/A
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4.2	Locked-rotor overload test		N/A
	Test duration (days) :		—
G.5.4.5	Running overload test for DC motors		N/A
G.5.4.5.2	Tested in the unit		N/A
G.5.4.5.3	Alternative method		N/A
G.5.4.6	Locked-rotor overload test for DC motors		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature :		N/A
G.5.4.6.3	Alternative method		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage :		—
G.6	Wire Insulation		N/A
G.6.1	General		N/A
G.6.2	Enamelled winding wire insulation		N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements	Direct plug-in equipment.	N/A
	Type..... :		—
G.7.2	Cross sectional area (mm ² or AWG) :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N)..... :		N/A
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm) :		N/A
G.7.3.2.4	Strain relief and cord anchorage material		N/A
G.7.4	Cord Entry		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Test method and compliance		N/A
	Overall diameter or minor overall dimension, D (mm) :		—
	Radius of curvature after test (mm) :		—
G.7.6	Supply wiring space		N/A
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	Varistors		P
G.8.1	General requirements	Complies, see appended table 4.1.2.	P
G.8.2	Safeguards against fire		P
G.8.2.1	General		P
G.8.2.2	Varistor overload test	Tested and passed. During and following the test, there was no risk of fire and equipment safeguards remain effective.	P
G.8.2.3	Temporary overvoltage test	No varistor between mains conductors and earth.	N/A
G.9	Integrated circuit (IC) current limiters		N/A
G.9.1	Requirements	No such component used.	N/A
	IC limiter output current (max. 5A) :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Manufacturers' defined drift		—
G.9.2	Test Program		N/A
G.9.3	Compliance		N/A
G.10	Resistors		N/A
G.10.1	General	No such resistor used.	N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
G.11	Capacitors and RC units		P
G.11.1	General requirements	X1 or X2 and Y1 capacitors according to IEC 60384-14.	P
G.11.2	Conditioning of capacitors and RC units	Capacitors complied with IEC 60384-14.	P
G.11.3	Rules for selecting capacitors	X1 or X2 and Y1 capacitors according to IEC 60384-14.	P
G.12	Optocouplers		P
	Optocouplers comply with IEC 60747-5-5 with specifics	Optocouplers complied with cl.5.4.4.3 and 5.4.4.4. (refer to appended table 4.1.2)	P
	Type test voltage $V_{ini,a}$		—
	Routine test voltage, $V_{ini,b}$		—
G.13	Printed boards		P
G.13.1	General requirements	Basic considered (ES3 side), primary and secondary circuits are not insulated by PCB layers.	P
G.13.2	Uncoated printed boards	Safeguard complied cl.5.4.2 & 5.4.3.	P
G.13.3	Coated printed boards	Not used.	N/A
G.13.4	Insulation between conductors on the same inner surface	Inner surface not used with cemented joint requirements.	N/A
G.13.5	Insulation between conductors on different surfaces	Basic insulation. No thickness requirement.	N/A
	Distance through insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Number of insulation layers (pcs) :		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements :		N/A
G.15	Pressurized liquid filled components		N/A
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
G.16.1	Condition for fault tested is not required	No ICX.	N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test..... :		—
	Mains voltage that impulses to be superimposed on :		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test :		—
G.16.3	Capacitor discharge test..... :		N/A
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling signal		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
H.3.1.1	Frequency (Hz)		—
H.3.1.2	Voltage (V)		—
H.3.1.3	Cadence; time (s) and voltage (V)		—
H.3.1.4	Single fault current (mA):.....		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)		N/A
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		N/A
J.1	General		N/A
	Winding wire insulation.....		—
	Solid round winding wire, diameter (mm)		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm ²).....		N/A
J.2/J.3	Tests and Manufacturing		—
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard		N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
K.5.1	Under single fault condition		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm).....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	In circuit isolated from mains, separation distance for contact gaps (mm)..... :		N/A
	Electric strength test before and after the test of K.7.2 :	(See appended table 5.4.9)	N/A
K.7.2	Overload test, Current (A) :		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	DISCONNECT DEVICES		P
L.1	General requirements	Both phase conductors were interrupted by plug on equipment.	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized	No parts remain energized, refer to cl.5.5.2.2.	N/A
L.4	Single-phase equipment	Both poles were disconnected simultaneously.	P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices	Not used.	N/A
L.7	Plugs as disconnect devices	Direct plug in equipment, no power cord used.	P
L.8	Multiple power sources	Single power source.	N/A
	Instructional safeguard :		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Batteries and their cells comply with relevant IEC standards :	No battery.	N/A
M.3	Protection circuits for batteries provided within the equipment		N/A
M.3.1	Requirements		N/A
M.3.2	Test method		N/A
	Overcharging of a rechargeable battery		N/A
	Excessive discharging		N/A
	Unintentional charging of a non-rechargeable battery		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Reverse charging of a rechargeable battery		N/A
M.3.3	Compliance		N/A
M.4	Additional safeguards for equipment containing a portable secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance..... :		N/A
M.4.3	Fire enclosure :		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation and procedure for the drop test		N/A
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): :		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
M.5	Risk of burn due to short-circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
M.6	Safeguards against short-circuits		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
	Calculated hydrogen generation rate :		N/A
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m ³ /h)..... :		N/A
M.7.3	Ventilation tests		N/A
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%) :		N/A
M.7.3.3	Ventilation test – alternative 2		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Obtained hydrogen generation rate..... :		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%)..... :		N/A
M.7.4	Marking		N/A
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s)		—
M.8.2.3	Correction factors		—
M.8.2.4	Calculation of distance d (mm)		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse		N/A
	Instructional safeguard		N/A
N	ELECTROCHEMICAL POTENTIALS		N/A
	Material(s) used		—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Value of X (mm)..... :	Considered.	—
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECTS		N/A
P.1	General		N/A
P.2	Safeguards against entry or consequences of entry of a foreign object		N/A
P.2.1	General	No openings.	N/A
P.2.2	Safeguards against entry of a foreign object		N/A
	Location and Dimensions (mm)		—
P.2.3	Safeguards against the consequences of entry of a foreign object		N/A
P.2.3.1	Safeguard requirements		N/A
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Transportable equipment with metalized plastic parts..... :		N/A
P.2.3.2	Consequence of entry test..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General	No such liquid.	N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesives securing parts		N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T _c (°C)		—
	Duration (weeks)		—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources		P
Q.1.1	Requirements		P
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output	(See appended table Annex Q.1)	P
	d) Overcurrent protective device limited output		N/A
	e) IC current limiter complying with G.9		N/A
Q.1.2	Test method and compliance	(See appended table Annex Q.1)	P
	Current rating of overcurrent protective device (A)		N/A
Q.2	Test for external circuits – paired conductor cable	Not connect to external circuits.	N/A
	Maximum output current (A)		N/A
	Current limiting method		—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General		N/A
R.2	Test setup		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Overcurrent protective device for test		—
R.3	Test method		N/A
	Cord/cable used for test		—
R.4	Compliance		N/A
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material	Fire enclosure is made of V-0 material. No testing required.	—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
S.3	Flammability test for the bottom of a fire enclosure		N/A
S.3.1	Mounting of samples	N/A	
S.3.2	Test method and compliance	N/A	
	Mounting of samples		—
	Wall thickness (mm)		—
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosure materials of equipment with a steady state power exceeding 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—

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Clause	Requirement + Test	Result - Remark	Verdict
T	MECHANICAL STRENGTH TESTS		P
T.1	General		P
T.2	Steady force test, 10 N	(See appended table T.2)	P
T.3	Steady force test, 30 N		N/A
T.4	Steady force test, 100 N	(See appended table T.4)	P
T.5	Steady force test, 250 N		N/A
T.6	Enclosure impact test	Direct plug-in equipment.	N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test	(See appended table T.7)	P
T.8	Stress relief test	(See appended table T.8)	P
T.9	Glass Impact Test		N/A
T.10	Glass fragmentation test		N/A
	Number of particles counted.....		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)		N/A
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General		N/A
	Instructional safeguard :		N/A
U.2	Test method and compliance for non-intrinsically protected CRTs		N/A
U.3	Protective screen		N/A
V	DETERMINATION OF ACCESSIBLE PARTS		P
V.1	Accessible parts of equipment		P
V.1.1	General	No opening.	P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes		N/A
V.1.4	Plugs, jacks, connectors tested with blunt probe		N/A
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		N/A
V.2	Accessible part criterion		P

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Clause	Requirement + Test	Result - Remark	Verdict
X	ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)		N/A
	Clearance :	(See appended table X)	N/A
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		N/A
Y.1	General		N/A
Y.2	Resistance to UV radiation		N/A
Y.3	Resistance to corrosion		N/A
Y.3	Resistance to corrosion		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by :		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure :		N/A
Y.3.5	Compliance		N/A
Y.4	Gaskets		N/A
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests		N/A
	Alternative test methods :		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means	(See Annex P.4)	N/A
Y.5	Protection of equipment within an outdoor enclosure		N/A
Y.5.1	General		N/A
Y.5.2	Protection from moisture		N/A
	Relevant tests of IEC 60529 or Y.5.3 :		N/A
Y.5.3	Water spray test		N/A
Y.5.4	Protection from plants and vermin		N/A
Y.5.5	Protection from excessive dust		N/A
Y.5.5.1	General		N/A
Y.5.5.2	IP5X equipment		N/A
Y.5.5.3	IP6X equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Y.6	Mechanical strength of enclosures		N/A
Y.6.1	General		N/A
Y.6.2	Impact test :	(See Table T.6)	N/A

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Clause	Requirement + Test			Result - Remark			Verdict
5.2	TABLE: Classification of electrical energy sources						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾	
264Vac	Primary Circuit	Normal	N/A	N/A	N/A	N/A	ES3
		Abnormal	N/A	N/A	N/A	N/A	
		Single fault – SC/OC	N/A	N/A	N/A	N/A	
264Vac	Model GT-41060-2530: T1 Pin 5- pin 6	Normal	191Vpk	N/A	SS	68.5kHz	ES2
		Abnormal	191Vpk	N/A	SS	68.5kHz	ES2
264Vac	Model GT-41060-2530: DC output after D4	Normal	34Vdc	N/A	SS	dc	ES1
		Abnormal	34Vdc	N/A	SS	dc	ES1
		Single fault –D4, SC	0	N/A	SS	N/A	ES1
264Vac	Model GT-41060-1505: T1 Pin 5- pin 6	Normal	30.8 Vpk	N/A	SS	68.5kHz	ES1
		Abnormal	30.8 Vpk	N/A	SS	68.5kHz	ES1
264Vac	Line to Neutral	Normal	374Vpk	N/A	CP	CX1= Max.0.47μF.	ES3
Supplementary information:							
1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc.							
2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.							

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.8	TABLE: Working voltage measurement				P
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
Model GT-41060-1505:					
T1 pin 1-5	202	374	68.5k	--	
T1 pin 1-6	201	342	68.5k	--	
T1 pin 2-5	201	350	68.5k	--	
T1 pin 2-6	201	344	68.5k	--	
T1 pin 3-5	234	488	68.5k	--	
T1 pin 3-6	240	500	68.5k	Max Vpeak & Vrms	
T1 pin 4-5	201	404	68.5k	--	
T1 pin 4-6	203	440	68.5k	--	
PC1 pin 1-3	200	342	60	--	
PC1 pin 1-4	202	374	60	--	
PC1 pin 2-3	201	342	60	--	
PC1 pin 2-4	201	350	60	--	
CY1	201	344	60	--	
Model GT-41060-2530:					
T1 pin 1-5	219	548	68.5k	Max Vpeak	
T1 pin 1-6	211	346	68.5k	--	
T1 pin 2-5	222	374	68.5k	--	
T1 pin 2-6	209	340	68.5k	--	
T1 pin 3-5	228	450	68.5k	--	
T1 pin 3-6	258	450	68.5k	Max Vrms	
T1 pin 4-5	215	356	68.5k	--	
T1 pin 4-6	217	472	68.5k	--	
PC1 pin 1-3	233	370	60	--	
PC1 pin 1-4	231	370	60	--	
PC1 pin 2-3	232	370	60	--	
PC1 pin 2-4	230	368	60	--	
CY1	209	340	60	--	

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Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information:			
Vin=240V, 60Hz.			

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics				N/A
Method.....:			ISO 306 / B50		—
Object/ Part No./Material		Manufacturer/trademark	Thickness (mm)	T softening (°C)	
Supplementary information:					

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics				P
Allowed impression diameter (mm)			≤ 2 mm		—
Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)	
Plug holder, material type LN-1250G	Teijin Chemicals	2.5	125	1.2	
Plug holder, material type SE100	Sabic	2.5	125	1.4	
Plug holder, material type SE1	Sabic	2.5	125	1.6	
Plug holder, material type SE1X	Sabic	2.5	125	1.6	
Plug holder, material type HF500R	Sabic	2.5	125	1.0	
Plug holder, material type 945	Sabic	2.5	125	1.1	
Supplementary information:					

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.2, 5.4.3 TABLE: Minimum Clearances/Creepage distance								P
Clearance (cl) and creepage distance (cr) at/of/between:	U _p (V)	U _{rms} (V)	Freq ¹⁾ (Hz)	Required cl (mm) [*]	cl (mm)	E.S. ²⁾ (V)	Required cr (mm)	cr (mm)
Basic/Supplementary:								
For PCB type 1 and type 2:								
L - N before fuse 2)	340	240	N/A	1.9	2.6	**)	2.5	3.0
Fuse pin1-2	340	240	N/A	1.9	2.8	**)	2.5	2.8
Primary NF1 - T1 core (component side) 2)	548	258	68.5k	1.9	6.0	**)	3.2	6.4
T1 core - Secondary D4 (component side) 2)	548	258	68.5k	1.9	6.0	**)	3.2	6.4
Reinforced:								
For PCB type 1 and type 2:								
NF1 – U1	340	240	N/A	3.8	7.0	**)	5.0	7.0
T1 pin2 – D6	548	258	68.5k	3.8	9.5	**)	5.2 1)	9.5
PC1 pri-sec	370	240	N/A	3.8	8.0	**)	5.0	8.0
NF1 – U1 (component side)	340	240	N/A	3.8	5.1	**)	5.0	5.1
Primary – Accessible parts of enclosure 2)	548	258	68.5k	3.8	5.4	**)	5.2 1)	6.6
Metal contact of removable plug – Accessible parts of enclosure 3)	340	240	N/A	3.8	5.4	**)	5.0	5.4
For PCB type 1:								
Primary to Secondary: CY1 pin1-2	344	240	N/A	3.8	7.8	**)	5.0	7.8
For PCB type 2:								
Primary to Secondary: CY1 pin1-CY1 pin2(CY2 pin1)-CY2 pin2	344	240	N/A	3.8	6.1	**)	5.0	>6.1
For transformer T1:								

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Clause	Requirement + Test				Result - Remark			Verdict
Basic: Primary windings - Core	548	258	68.5k	1.9	4.0	**)	2.6 1)	4.0
Supplementary: Core - Secondary windings	548	258	68.5k	1.9	3.5	**)	2.6 1)	3.5
Reinforced: Primary windings - Secondary windings	548	258	68.5k	3.8	7.0	**)	5.2 1)	7.0
Supplementary information:								
<p>1) Only for frequency above 30 kHz</p> <p>2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied)</p> <p>All models have the same PCB layout.</p> <p>Two layers of insulation tape wrapped around T1 core.</p> <p>10N applied to secondary components U1, C7 and C9.</p> <p>1) Linear interpolation method used.</p> <p>2) The gap > 1mm width.</p> <p>3) The distance is measured after test probe B, test probe 13 and test probe 19 of EN61032 applied.</p> <p>*) A multiplier factor (1.22) was used to consider the additional altitude requirement for clearance as described under General product information.</p> <p>**) Limit considered by cl.5.4.2.3.4 with required withstand voltage (2500V). Procedure 2 is used.</p>								

5.4.4.2	TABLE: Minimum distance through insulation				P
Distance through insulation (DTI) at/of	Peak voltage (V)	Insulation	Required DTI (mm)	Measured DTI (mm)	
Enclosure	548	Reinforced	0.4	2.0	
Bobbin of transformer T1	548	Reinforced	0.4	0.45	
Tape in transformer T1	548	Reinforced	--	3 layers	
Supplementary information:					

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz						P
Insulation material	E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)	
Phenolic, Bobbin of T1 (PM-9820) 1)	14	68.5	0.71	0.45	Reinforced	548	
Phenolic, Bobbin of T1 (PM-9823) 2)	15	68.5	0.71	0.45	Reinforced	548	
Phenolic, Bobbin of T1 (T375J) 3)	17	68.5	0.71	0.45	Reinforced	548	
Phenolic, Bobbin of T1 (T375HF) 4)	10	68.5	0.71	0.45	Reinforced	548	
Insulation tape of T1: all sources 5)	52	68.5	0.46	0.025*3	Reinforced	548	
Supplementary information:							
<p>1) Calculated actual electric strength (Vw) for reinforced insulation=$E_P \times K_R \times d = 14 \times 0.71 \times 0.45 = 4.473\text{kV}$ 2.4 times of peak working voltage V_{pw} for reinforced insulation=$2.4 \times 548\text{V} / 1.41 = 0.933\text{kV}$, $4.473\text{kV} > 0.933\text{kV}$.</p> <p>2) Calculated actual electric strength (Vw) for reinforced insulation=$E_P \times K_R \times d = 15 \times 0.71 \times 0.45 = 4.792\text{kV}$ 2.4 times of peak working voltage V_{pw} for reinforced insulation=$2.4 \times 548\text{V} / 1.41 = 0.933\text{kV}$, $4.792\text{kV} > 0.933\text{kV}$.</p> <p>3) Calculated actual electric strength (Vw) for reinforced insulation=$E_P \times K_R \times d = 17 \times 0.71 \times 0.45 = 5.431\text{kV}$ 2.4 times of peak working voltage V_{pw} for reinforced insulation=$2.4 \times 548\text{V} / 1.41 = 0.933\text{kV}$, $5.431\text{kV} > 0.933\text{kV}$.</p> <p>4) Calculated actual electric strength (Vw) for reinforced insulation=$E_P \times K_R \times d = 10 \times 0.71 \times 0.45 = 3.195\text{kV}$ 2.4 times of peak working voltage V_{pw} for reinforced insulation=$2.4 \times 548\text{V} / 1.41 = 0.933\text{kV}$, $3.195\text{kV} > 0.933\text{kV}$.</p> <p>5) Calculated actual electric strength (Vw) for reinforced insulation = $E_P \times K_R \times d = 52 \times 0.46 \times 0.075 = 1.794\text{ kV}$, 2.4 times of peak working voltage V_{pw} for reinforced insulation = $2.4 \times 548\text{V} / 1.41 = 0.933\text{kV}$, $1.794\text{ kV} > 0.933\text{kV}$.</p>							

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V) 1)	Breakdown Yes / No
Basic/Supplementary:				
Live – Neutral (disconnected fuse)		DC	2500 V	No
Primary windings - Core		DC	2500 V	No
Core - Secondary windings		DC	2500 V	No
Reinforced:				
Primary – Output terminals		DC	4000 V	No
Primary – Enclosure (wrapped with foil)		DC	4000 V	No
T1 Primary- Core – Secondary		DC	4000 V	No
Tape in transformer T1 (2 layers of 3 layers) (All sources)		DC	4000 V	No
Supplementary information:				
1) Method of transient voltage considered.				

5.5.2.2	TABLE: Stored discharge on capacitors				P
Location	Supply voltage (V)	Operating and fault condition ¹⁾	Switch position	Measured voltage (Vpk)	ES Class
Line to Neutral	264Vac/60Hz	N	--	16V	ES1
Supplementary information:					
X-capacitors installed for testing: CX1=0.47µF.					
[X] Bleeder resistors: RA=RB=604KΩ, RA and RB in series. Approved resistors. (See table 4.1.2)					
[] ICX:					
1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit					

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Clause	Requirement + Test	Result - Remark	Verdict

5.6.6	TABLE: Resistance of protective conductors and terminations				N/A
Location	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
Supplementary information:					

5.7.4	TABLE: Unearthed accessible parts					P
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V_{rms} or V_{pk})	Current (A_{rms} or A_{pk})	Freq. (Hz)	
Output port	Normal	264	N/A	0.144 mApk for only CY1, 0.160 mApk for only CY1+CY2	60	ES1 *)
	Fault (Refer to fault condition on table B.3 & B.4, output shutdown)	264	N/A	0.156 mApk for only CY1, 0.166 mApk for only CY1+CY2	60	ES1 *)
	Fault (Refer to fault condition on table B.3 & B.4, fuse open)	264	N/A	0.176 mApk for only CY1, 0.180 mApk for only CY1+CY2	60	ES1 *)
Accessible Enclosure (with metal foil) to earth	Normal	264	--	0.001 mApk	60	ES1 *)
	Fault (Refer to fault condition on table B.3 & B.4, output shutdown)	264	--	0.001 mApk	60	ES1 *)
	Fault (Refer to fault condition on table B.3 & B.4, fuse open)	264	--	0.001 mApk	60	ES1 *)
Supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict
Abbreviation: SC= short circuit; OC= open circuit			

5.7.5	TABLE: Earthed accessible conductive part			N/A
Supply voltage (V)				—
Phase(s)	[X] Single Phase; [] Three Phase: [] Delta [] Wye			
Power Distribution System	[X] TN [] TT [X] IT			
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	
	No.1	N/A	--	
	2(*)	N/A	--	
	3	1)	--	
	4	N/A	--	
	5	2)	--	
	6	N/A	--	
	8	N/A	--	
Supplementary Information:				
Notes: [1] Supply voltage is the anticipated maximum Touch Voltage [2] Earthed neutral conductor [Voltage differences less than 1% or more] [3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3 [4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable. [5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided. 1) Norway IT power system Line fault condition was evaluated, which is as same as TN, TT system earthing conductor fault condition, other IT power system is not evaluated. 2) Not applicable, single-phase equipment				

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Clause	Requirement + Test	Result - Remark	Verdict

5.8	TABLE: Backfeed safeguard in battery backed up supplies					N/A
Location	Supply voltage (V)	Operating and fault condition	Time (s)	Open-circuit voltage (V)	Touch current (A)	ES Class
Supplementary information:						
Abbreviation: SC= short circuit, OC= open circuit						

6.2.2	TABLE: Power source circuit classifications					P
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power ¹⁾ (W)	Time (S)	PS class
All circuits except for DC output	N/A	N/A	N/A	N/A	N/A	PS3
Model GT-41060-1505	Normal	5.26	3.9	18.5	5	PS2
	U1 pin1,3-2 s-c 1)	5.26	0	0	5	
	R26 s-c 1)	5.26	0	0	5	
	R12 s-c 2)	5.26	0	0	5	
Model GT-41060-2530	Normal	30.97	1.86	56.9	5	PS2
	U1 pin1,3-2 s-c 1)	30.97	0	0	5	
	R26 s-c 1)	30.97	0	0	5	
	R12 s-c 2)	30.97	0	0	5	
Supplementary information:						
Abbreviation: s-c= short circuit						
1) Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.						
1) Unit shut down, no output.						
2) Main fuse opened immediately, no output.						

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Clause	Requirement + Test	Result - Remark	Verdict

6.2.3.1	TABLE: Determination of Arcing PIS				P
Location	Open circuit voltage after 3 s (V _{pk})	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No	
Varistor (MOV1), Contact points from plug pins to PCB	N/A	N/A	N/A	Yes *)	
Supplementary information:					
<p>*) An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15.</p> <p>The arcing PIS is covered by the fire enclosure.</p>					

6.2.3.2	TABLE: Determination of resistive PIS			P
Location	Operating and fault condition	Dissipate power (W)	Arcing PIS? Yes / No	
All circuits	N/A	N/A	Yes *)	
Supplementary information:				
<p>A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.</p> <p>If a separate voltmeter and ammeter are used, the product of (V x I) is used to determine Resistive PIS classification.</p> <p>A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, <u>or</u> (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.</p> <p>*) All circuit declared as resistive PIS, fire enclosure provided.</p>				

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Clause	Requirement + Test	Result - Remark	Verdict

8.5.5	TABLE: High pressure lamp				N/A
Lamp manufacturer	Lamp type	Explosion method	Longest axis of glass particle (mm)	Particle found beyond 1 m Yes / No	
Supplementary information:					

9.6	TABLE: Temperature measurements for wireless power transmitters							N/A
Supply voltage (V)..... :								—
Max. transmit power of transmitter (W)..... :								—
Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm	
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)
Supplementary information:								

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 9.3, B.1.5, B.2.6		TABLE: Temperature measurements						P			
Supply voltage (V).....			90V, 50Hz 1)		90V, 60Hz 1)		264V, 50Hz 1)		90V, 50Hz 2)		—
Ambient temperature during test T_{amb} (°C).....			--		--		--		--		—
Maximum measured temperature T of part/at:			T (°C)								Allowed T_{max} (°C)
Model GT-41060-1505:											
CX1			70.4		69.6		66.7		69.7		110
NF1 coil			83.2		81.6		73.8		83.1		120 *)
NF1 core			82.2		80.7		75.0		81.9		120 *)
C1			85.9		84.1		78.8		83.9		105
PCB under C1			75.4		74.4		71.1		74.8		105
Heat sink SH2			74.4		73.1		73.3		71.8		--
T1 coil			92.2		90.9		94.3		91.4		110 *)
T1 core			91.2		90.0		92.5		90.1		110 *)
PCB under T1			87.3		86.1		87.8		86.7		105
PC1			81.6		80.3		81.2		80.2		110
CY1			88.0		86.9		87.9		88.2		105
Contact surface of removable plug and EUT			53.0		52.3		50.2		51.6		--
Contact surface of EUT enclosure and PCB assembly			60.4		60.1		56.7		59.5		--
Enclosure inside near T1			67.2		66.7		64.5		66.9		--
Ambient			40		40		40		40		--
Touch temperature											
Enclosure outside above T1			50.5		51.6		48.3		50.8		77 (TS1) **)
Output wire			44.2		44.4		44.6		41.0		77 (TS1) **)
Ambient			25.0		25.0		25.0		25.0		--
Temperature T of winding:		t_1 (°C)	R_1 (Ω)		t_2 (°C)		R_2 (Ω)		T (°C)		Allowed Insulation

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Clause	Requirement + Test				Result - Remark		Verdict
						T_{\max} (°C)	class
Supplementary information:							
If no limit is stated, temperature is for reference only. $T_{\text{ma}}=40^{\circ}\text{C}$. 1) Horizontal, 2) Vertical. *) Temperature limits of winding include less 10°C for thermocouple measurement method. **) Considering touched occasionally for periods (>1 s and <10 s).							

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements					P
Supply voltage (V).....	90V, 50Hz 1)	90V, 60Hz 1)	264V, 50Hz 1)	90V, 50Hz 2)	—	
Ambient temperature during test T_{amb} (°C).....	--	--	--	--	—	
Maximum measured temperature T of part/at:	T (°C)				Allowed T_{max} (°C)	
Model GT-41060-2530:						
CX1	84.5	80.3	71.3	81.5	110	
NF1 coil	108.6	102.2	78.9	105.8	120 *)	
NF1 core	100.4	94.7	78.2	96.3	120 *)	
C1	97.7	92.6	81.9	95.8	105	
PCB under C1	87.8	82.6	75.7	85.5	105	
Heat sink SH2	87.3	82.0	75.7	84.6	--	
T1 coil	104.6	99.6	100.5	104.6	110 *)	
T1 core	100.4	95.6	100.0	102.0	110 *)	
PCB under T1	76.3	73.4	75.7	82.0	105	
PC1	85.8	81.3	84.2	87.7	110	
CY1	85.2	81.6	80.9	89.0	105	
Contact surface of removable plug and EUT	61.6	57.2	59.7	59.9	--	
Contact surface of EUT enclosure and PCB assembly	72.0	68.5	65.4	71.1	--	
Enclosure inside near T1	71.9	67.2	68.9	70.3	--	

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Clause	Requirement + Test				Result - Remark		Verdict		
Ambient		40		40		40		--	
Touch temperature									
Enclosure outside above T1		57.3		58.4		56.6		57.7	77 (TS1 **)
Output wire		45.9		46.7		44.0		40.9	77 (TS1 **)
Ambient		25.0		25.0		25.0		25.0	--
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:									
If no limit is stated, temperature is for reference only. Tma=40°C. 1) Horizontal, 2) Vertical. *) Temperature limits of winding include less 10°C for thermocouple measurement method. **) Considering touched occasionally for periods (>1 s and <10 s).									

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Clause	Requirement + Test	Result - Remark	Verdict

B.2.5		TABLE: Input test						P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
Model GT-41060-1505:								
90	50	0.37	—	20.5	—	F1, F2	0.37	Max. normal load
90	60	0.40	—	20.4	—	F1, F2	0.40	Max. normal load
100	50	0.34	0.6	20.3	—	F1, F2	0.34	Max. normal load
100	60	0.37	0.6	20.3	—	F1, F2	0.37	Max. normal load
240	50	0.18	0.6	20.7	—	F1, F2	0.18	Max. normal load
240	60	0.19	0.6	20.7	—	F1, F2	0.19	Max. normal load
264	50	0.17	—	21.0	—	F1, F2	0.17	Max. normal load
264	60	0.18	—	21.0	—	F1, F2	0.18	Max. normal load
Model GT-41060-2530:								
90	50	0.55	—	30.4	—	F1, F2	0.55	Max. normal load
90	60	0.59	—	30.7	—	F1, F2	0.59	Max. normal load
100	50	0.50	0.6	30.2	—	F1, F2	0.50	Max. normal load
100	60	0.54	0.6	30.4	—	F1, F2	0.54	Max. normal load
240	50	0.26	0.6	30.3	—	F1, F2	0.26	Max. normal load
240	60	0.26	0.6	30.5	—	F1, F2	0.26	Max. normal load
264	50	0.24	—	30.3	—	F1, F2	0.24	Max. normal load
264	60	0.24	—	30.4	—	F1, F2	0.24	Max. normal load
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured.								

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Clause	Requirement + Test	Result - Remark	Verdict

B.3, B.4 TABLE: Abnormal operating and fault condition tests						P
Ambient temperature T_{amb} (°C)..... :					25°C, if not specify the ambient temperature.	—
Power source for EUT: Manufacturer, model/type, outputrating .. :					—	—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
Model GT-41060-1505:						
T1 pin 5-6 after D4	s-c	264	10 min	F1, F2	0.04	Unit shut down, no damage, no hazard.
T1 pin 5-6 after D4	o-l	90	8h	F1, F2	0.42~0.02	Output loaded to 4.0A. Max temperature measured on T1 coil = 97.4°C, T1 core = 95.0°C, Enclosure near transformer = 52.6°C, Output wire = 46.6°C, Amb = 26.8°C. No damage, no hazard.
+5V output	s-c	264	10 min	F1, F2	0.04	Unit shut down, no damage, no hazard.
+5V output	o-l	90	6.5h	F1, F2	0.42~0.02	Output loaded to 3.9A. Max temperature measured on T1 coil = 95.8°C, T1 core = 93.1°C, Amb = 27.0°C. No damage, no hazard.
Model GT-41060-2530:						
BD1 ~ - +	s-c	264	<1s	F1, F2	1)	Fuse open, no hazard.
C1	s-c	264	<1s	F1, F2	1)	Fuse open, no hazard.
PC1 pin 1-2	s-c	264	4h	F1, F2	0.04	Unit shut down, no damage, no hazard.
PC1 pin 3-4	s-c	264	10 min	F1, F2	0.04	Unit shut down, no damage, no hazard.
U1 pin 1,3-2	s-c	264	10 min	F1, F2	0.04	Unit shut down, no damage, no hazard.
D4	s-c	264	10 min	F1, F2	0.30~	Unit shut down, no damage,

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Clause	Requirement + Test				Result - Remark	Verdict
					0.04	no hazard.
R26	s-c	264	10 min	F1, F2	0.04	Unit shut down, no damage, no hazard.
Q1 G-S	s-c	264	10 min	F1, F2	0.04	Unit shut down, no damage, no hazard.
Q1 G-D	s-c	264	10 min	F1, F2	0.04 2)	Unit shut down. R7, R12 and IC1 damaged, no hazard.
Q1 S-D	s-c	264	10 min	F1, F2	0.04 2)	Unit shut down. R12 damaged, no hazard.
IC1 pin 5-6	s-c	264	< 1s	F1, F2	1)	Fuse open. R12 damaged, no hazard.
T1 pin 2-4 after D4	s-c	264	10 min	F1, F2	0.04	Unit shut down, no damage, no hazard.
T1 pin 5-6 after D4	s-c	264	10 min	F1, F2	0.04	Unit shut down, no damage, no hazard.
T1 pin 5-6 after D4	o-l	90	12h	F1, F2	0.22~0.02	Output loaded to 1.04A. Max temperature measured on T1 coil = 134.2°C, T1 core = 128.2°C, Enclosure near transformer = 65.3°C, Output wire = 45.5°C, Amb = 27.5°C. No damage, no hazard.
+30V output	s-c	264	10 min	F1, F2	0.04	Unit shut down, no damage, no hazard.
+30V output	o-l	90	5.5h	F1, F2	0.22~0.02	Output loaded to 0.90A. Max temperature measured on T1 coil = 132.1°C, T1 core = 133.2°C, Amb = 27.3°C. No damage, no hazard.
Supplementary information:						
o-l=Overload. s-c=Short circuit. 1) Fuse current > fuse rating x 2.1 and repeated three times with same result. Tested with all fuse sources. 2) Test repeated for three times with the same result. After each of above test, EUT can pass the Hi-pot test.						

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Clause	Requirement + Test	Result - Remark	Verdict

M.3	TABLE: Protection circuits for batteries provided within the equipment						N/A
Is it possible to install the battery in a reverse polarity position? :						—	
Equipment Specification	Charging						
	Voltage (V)			Current (A)			
Manufacturer/type	Battery specification						
	Non-rechargeable batteries		Rechargeable batteries				
	Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)	
			Voltage (V)	Current (A)			
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.							
Specified battery temperature (°C)..... :							
Component No.	Fault condition	Charge/discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
Supplementary information:							
Abbreviation: SC= short circuit; NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal.							

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Clause	Requirement + Test	Result - Remark	Verdict

M.4.2	TABLE: Charging safeguards for equipment containing a secondary lithium battery				N/A
Maximum specified charging voltage (V)					—
Maximum specified charging current (A)					—
Highest specified charging temperature (°C)					
Lowest specified charging temperature (°C)					
Battery manufacturer/type	Operating and fault condition	Measurement			Observation
		Charging voltage (V)	Charging current (A)	Temp. (°C)	
Supplementary information:					

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						P
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
Model GT-41060-1505:							
DC output	Normal	5.26	5	3.9	8.0	18.5	100
DC output	U1 pin1,3-2 s-c 1)	5.26	5	0	8.0	0	100
DC output	R26 s-c 1)	5.26	5	0	8.0	0	100
DC output	R12 s-c 2)	5.26	5	0	8.0	0	100
Model GT-41060-2530							
DC output	Normal	30.97	5	1.86	4.84	56.9	100
DC output	U1 pin1,3-2 s-c 1)	30.97	5	0	4.84	0	100
DC output	R26 s-c 1)	30.97	5	0	4.84	0	100
DC output	R12 s-c 2)	30.97	5	0	4.84	0	100
Supplementary Information:							
s-c=Short circuit. 1) Unit shut down, no output. 2) Main fuse opened immediately, no output.							

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Clause	Requirement + Test			Result - Remark		Verdict
T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Location/Part	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation
Enclosure	Thermoplastic	2.0mm	Circular Plane surface 30mm in diameter	100N	5sec	Safeguards remained effective
U1, C7 and C9 and secondary wires.	--	--	--	10N	5sec	Safeguards remained effective
Supplementary information:						

T.6, T.9	TABLE: Impact test				N/A
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
Supplementary information:					

T.7	TABLE: Drop test				P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
Enclosure	Thermoplastic	2.0mm	1000	Safeguards remained effective	
Supplementary information:					

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

T.8	TABLE: Stress relief test					P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Enclosure	Thermoplastic	2.0mm	82	7	No risk of shrinkage or distortion on material	
Supplementary information:						

X	TABLE: Alternative method for determining minimum clearances distances				N/A
Clearance distanced between:	Peak of working voltage (V)	Required cl (mm)	Measured cl (mm)		
Supplementary information:					

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
4.1.2	TABLE: Critical components information				
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾
Europe Plug	GlobTek	Q-EU	2.5A, 250V	EN 50075	Nemko report Ref. No. 175959P
Plug holder material	Teijin Chemicals	LN-1250G	Min 2.0mm thick, flame class V-0, 125°C	UL 94	UL
Alt.)	Sabic	SE100, SE1, SE1X, HF500R, 945	Min 2.0mm thick, flame class V-1, min 95°C	UL 94	UL
Enclosure	Teijin Chemicals	LN-1250G, LN-1250P	Min 2.0mm thick, flame class V-0	UL 94	UL
Alt.)	Sabic	SE100, SE100X, SE1, SE1X, HF500R, C2950, CX7211, EXCY0098, 945	Min 2.0mm thick, flame class V-1	UL 94	UL
Alt.)	CHIMEI	PC-540, PA-765A	Min 2.0mm thick, flame class V-1	UL94	UL
Output Cord	Interchangeable	Interchangeable	Min. 24AWG, Min. 300Vac, Min. 80°C	UL 758	UL
PCB material	Interchangeable	Interchangeable	Min. flame class V-1 or better, min. 105°C materials	UL 796	UL
Fuse (F1, F2) (F2 is optional)	Conquer Electronics Co., Ltd.	MST	T1AL or T2AL, 250V	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.)	Suzhou Walter Electronic Co. Ltd.	2010	T1AL or T2AL, 250V	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.)	Bel Fuse Ltd.	RST-Serie(s)	T1AL or T2AL, 250V	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.)	Cooper Bussmann LLC	SS-5	T1AL or T2AL, 250V	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.)	Dongguan Better	932	T1AL or T2AL, 250V	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.)	Shenzhen Lanson Electronics Co. Ltd.	SMT	T1AL or T2AL, 250V	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.)	Conquer Electronics Co., Ltd.	MET series	T1AL or T2AL, 250V	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
Alt.)	Sunny East Enterprise Co. Ltd.	CFD-Serie(s)	T1AL or T2AL, 250V	IEC 60127-1, IEC 60127-3, UL 248-1, UL 248-14	VDE, UL
X cap (CX1) (optional)	Cheng Tung Industrial Co., Ltd.	CTX	Max 0.47µF, Min.300V,110°C X1 or X2	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Tenta Electric Industrial Co. Ltd.	MEX	Max 0.47µF, Min.300V,110°C X1 or X2	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	JOEY ELECTRONICS (DONG GUAN) CO LTD	MPX	Max 0.47µF, Min.300V,110°C X1 or X2	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max 0.47µF, Min.300V,110°C X1 or X2	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Yuon Yu Electronics Co. Ltd.	MPX	Max 0.47µF, Min.300V,110°C X1 or X2	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Sinhua Electronics (Huzhou) Co., Ltd.	MPX	Max 0.47µF, Min.300V,110°C X1 or X2	IEC 60384-14, UL 60384-14	VDE, UL

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt.)	Jiangsu Xinghua Huayu Electronics Co., Ltd.	MPX	Max 0.47 μ F, Min.300V,110°C X1 or X2	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Dain Electronics Co., Ltd.	MEX	Max 0.47 μ F, Min.300V,110°C X1 or X2	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Dain Electronics Co., Ltd.	MPX	Max 0.47 μ F, Min.300V,110°C X1 or X2	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Dain Electronics Co., Ltd.	NPX	Max 0.47 μ F, Min.300V,110°C X1 or X2	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Shenzhen Jinghao Capacitor Co., Ltd.	CBB62B	Max 0.47 μ F, Min.300V,110°C X1 or X2	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	MPX, MKP, CD, CE, DSY	Max 0.47 μ F, Min.300V,110°C X1 or X2	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	HUA JUNG COMPONENTS CO LTD	MKP	Max 0.47 μ F, Min.300V,110°C X1 or X2	IEC 60384-14, UL 60384-14	VDE, UL
Bridging cap (CY1) (for PCB type 1)	TDK Corporation	CD	Max 1000pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Success Electronics Co., Ltd.	SE	Max 1000pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Success Electronics Co., Ltd.	SB	Max 1000pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Murata Mfg. Co., Ltd.	KX	Max 1000pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.)	Walsin Technology Corp.	AH	Max 1000pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Haohua Electronic Co.	CT7	Max 1000pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	JYA-NAY Co., Ltd.	JN	Max 1000pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Jyh Chung Electronic Co., Ltd.	JD	Max 1000pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	WELSON INDUSTRIAL CO LTD	WD	Max 1000pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	CD, CE	Max 1000pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Bridging cap (CY1, CY2) (for PCB type 2)	TDK Corporation	CD	Max 2200pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Success Electronics Co., Ltd.	SE	Max 2200pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Success Electronics Co., Ltd.	SB	Max 2200pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Murata Mfg. Co., Ltd.	KX	Max 2200pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.)	Walsin Technology Corp.	AH	Max 2200pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Haohua Electronic Co.	CT7	Max 2200pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	JYA-NAY Co., Ltd.	JN	Max 2200pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	Jyh Chung Electronic Co., Ltd.	JD	Max 2200pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	WELSON INDUSTRIAL CO LTD	WD	Max 2200pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Alt.)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	CD, CE	Max 2200pF, Min 250Vac, Min 105°C, (Y1)	IEC 60384-14, UL 60384-14	VDE, UL
Varistor (MOV1) (Optional)	Xiamen Set Electronics Co., Ltd.	TFV8S471K	Max. Continuous voltage: Min. 300Vac(rms), Min. 105°C, The coating is Min. V-0	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, IEC 62368-1:2018 Annex G.8.1 and G.8.2, UL 1449	TUV-RH (J 50554061) UL (E322662)
Alt.)	Xiamen SET Electronics Co., Ltd.	TFV10S471K	Max. Continuous voltage: Min. 300Vac(rms), Min. 105°C, The coating is Min. V-0	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, IEC 62368-1:2018 Annex G.8.1 and G.8.2, UL 1449	TUV-RH (J 50554091) UL (E322662)

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	10D621K	Max. Continuous voltage: Min. 385Vac(rms), Min. 125°C, (tested by UL for 6KV/3KA combination pulse), The coating is Min. V-0	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL1449	VDE (40023049), UL (E330837)
Alt.)	Thinking Electronic Industrial Co., Ltd.	TVR10621	Max. Continuous voltage: Min. 395Vac(rms), Min. 125°C, (tested by UL for 6KV/3KA combination pulse), The coating is Min. V-0	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, UL1449	VDE (5944), UL (E314979)
Optocoupler (PC1)	Everlight Electronics Co., Ltd.	EL817	external creepage \geq 7.6mm, DTI \geq 0.4mm, Thermal cycling test, Min. 110°C	IEC 62368-1 IEC 60747-5-5	VDE
Alt.)	COSMO ELECTRONICS CORP	K1010, KP1010	external creepage \geq 5.2mm, DTI \geq 0.4mm, Thermal cycling test, Min. 115°C	EN IEC 62368-1 IEC 60747-5-5	VDE
Alt.)	Lite-On Technology Corporation	LTV-817	external creepage \geq 7.0mm, DTI \geq 0.4mm, Thermal cycling test, Min. 110°C	IEC 62368-1 IEC 60747-5-5	VDE
Alt.)	Fairchild Semiconductor Pte Ltd	H11A817B, FOD817B	external creepage \geq 7.0mm, DTI \geq 0.4mm, Thermal cycling test, Min. 110°C	IEC 62368-1 IEC 60747-5-5	VDE
Alt.)	SHARP CORP ELECTRONIC COMPONENTS AND DEVICES BU	PC817	external creepage \geq 7.0mm, DTI \geq 0.4mm, Thermal cycling test, Min. 110°C	IEC 62368-1 IEC 60747-5-5	VDE

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alt.)	Bright Led Electronics Corp.	BPC-817, BPC-817A/B/C/D/L, BPC-817 M, BPC-817 S	external creepage \geq 7.6mm, DTI \geq 0.4mm, Thermal cycling test, Min. 110°C	IEC/EN 62368-1 IEC/EN 60747-5-5	VDE
Line choke (NF1)	GlobTek, HAOPUWEI, HEJIA, BOAM, ENG	NF00009B 2)	130°C	IEC 62368-1	Test in equipment
Bobbin	Chang Chun Plastics	T373J, T375J, T375HF	Phenolic, 150°C, V-0	UL94	UL
Alt.)	Sumitomo	PM-9820	Phenolic, 150°C, V-0	UL94	UL
Line choke (NF1), Alt.)	GlobTek	321-01070001 2)	130°C	IEC 62368-1	Test in equipment
Bobbin	Chang Chun Plastics	T373J, T375HF	Phenolic, 150°C, V-0	UL94	UL
Bridge diode (BD1)	Interchangeable	Interchangeable	Min 1A, min 400V	IEC 62368-1	Test in equipment
Bulk Capacitor (C1)	Interchangeable	Interchangeable	Max 47 μ F, Min 400V, 105°C	IEC 62368-1	Test in equipment
Transformer (T1, for models with output voltage 3-5V)	GlobTek, BOAM, HAOPUWEI ENG 4)	XF00290 3)	Class B	IEC 62368-1, UL 1446	Test in equipment, UL
Transformer (T1, for models with output voltage 5.1-6.9V)	GlobTek, BOAM, HAOPUWEI ENG 4)	XF00290A 3)	Class B	IEC 62368-1, UL 1446	Test in equipment, UL
Transformer (T1, for models with output voltage 7-11.9V)	GlobTek, BOAM, HAOPUWEI ENG 4)	XF00328 3)	Class B	IEC 62368-1, UL 1446	Test in equipment, UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Transformer (T1, for models with output voltage 12-15.9V)	GlobTek, BOAM, HAOPUWEI ENG 4)	XF00291 3)	Class B	IEC 62368-1, UL 1446	Test in equipment, UL
Transformer (T1, for models with output voltage 16-18V)	GlobTek, BOAM, HAOPUWEI ENG 4)	XF00318 3)	Class B	IEC 62368-1, UL 1446	Test in equipment, UL
Transformer (T1, for models with output voltage 18.1-20V)	GlobTek, BOAM, HAOPUWEI ENG 4)	XF00295 3)	Class B	IEC 62368-1, UL 1446	Test in equipment, UL
Transformer (T1, for models with output voltage 20.1-24V)	GlobTek, BOAM, HAOPUWEI ENG 4)	XF00230 3)	Class B	IEC 62368-1, UL 1446	Test in equipment, UL
Transformer (T1, for models with output voltage 24.1-30V)	GlobTek, BOAM, HAOPUWEI ENG 4)	XF00292 3)	Class B	IEC 62368-1, UL 1446	Test in equipment, UL
- Insulation system	GLOBTEK INC	GTX-130-TM	Class 130(B)	IEC/EN 62368-1, UL 1446	Tested with appliance, UL E243347
Alt.)	SHAN DONG BOAM ELECTRIC CO LTD	BOAM-01, B1	Class 130(B)	IEC/EN 62368-1, UL 1446	Tested with appliance, UL E252329
Alt.)	WUXI HAOPUWEI ELECTRONICS CO LTD	ZT-130	Class 130(B)	IEC/EN 62368-1, UL 1446	Tested with appliance, UL E315275
Alt.)	ENG ELECTRIC CO LTD	ENG130-1	Class 130(B)	IEC/EN 62368-1, UL 1446	Tested with appliance, UL E308897
- Bobbin	CHANG CHUN PLASTICS CO LTD	T375J, T375HF	Phenolic, 150°C, V-0	UL 94	UL
Alt.)	SUMITOMO BAKELITE CO LTD	PM-9820, PM-9823	Phenolic, 150°C, V-0	UL 94	UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
- Insulation tape	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1, 1350T-1, 44	Min.130°C	UL 510	UL
Alt.)	BONDTEC PACIFIC CO LTD	370S (b)	Min.130°C	UL 510	UL
Alt.)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ, CT, WF	Min.130°C	UL 510	UL
Alt.)	HUIZHOU YAHUA ELECTRONIC TECHNOLOGY CO LTD	CT	Min.130°C	UL 510	UL
Alt.)	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A (b)	Min.130°C	UL 510	UL
Alt.)	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX*	Min.130°C	UL 510	UL
- Tubing	GREAT HOLDING INDUSTRIAL CO LTD	TFT, TFS	Min. 300V, 200°C	UL 224	UL
Alt.)	SHENZHEN WOER HEAT- SHRINKABLE MATERIAL CO LTD	WF	600V, 200°C	UL 224	UL
Alt.)	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TT-T, CB-TT-S	Min. 300V, 200°C	UL 224	UL
Bleed resistor after fuse (RA, RB)	Yageo Corporation	RV series, AH series	RA=RB= Max. 604KΩ, Min. 1/4W (RA and RB are in series)	IEC/EN 62368-1	UL CB (Cert. No.: DK-108482- UL)

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alt.)	Ralec Electronic Corp	RTV series	RA=RB= Max. 604K Ω , Min. 1/4W (RA and RB are in series)	IEC/EN 62368-1	UL CB (Cert. No.: DK-66106-M1-UL)
Alt.)	Guangdong Fenghua Advanced Technology Holding Co.,Ltd.	RVS series	RA=RB= Max. 604K Ω , Min. 1/4W (RA and RB are in series)	IEC/EN 62368-1	Nemko CB (NO109708)
Alt.)	Viking Tech Corporation Kaoshiung Branch	HVRC12	RA=RB= Max. 604K Ω , Min. 1/4W (RA and RB are in series)	IEC/EN 62368-1	UL CB (Cert. No.: DK-121748-UL)
Alt.)	TZAI YUAN ENTERPRISE CO LTD	HSMD, SMD	RA=RB= Max. 604K Ω , Min. 1/4W (RA and RB are in series)	IEC/EN 62368-1	UL CB (Cert. No.: DK-29431-A1-M1-UL)
Alt.)	WALSIN TECHNOLOGY CORP	WF12N	RA=RB= Max. 604K Ω , Min. 1/4W (RA and RB are in series)	IEC/EN 62368-1	UL CB (Cert. No.: DK-119162-UL)
Alt.)	PDC	FVS03, FVS05, FVS06, FVS20, TF25V, TF06V, TF08V, TF12V, TF20V, FVS25	RA=RB= Max. 604K Ω , Min. 1/4W (RA and RB are in series)	IEC/EN 62368-1	UL CB (Cert. No.: DK-101615-UL)
Current sensor resistor (R12)	Interchangeable	Interchangeable	Min.0.47 Ω , 1W	IEC 62368-1	Test in equipment
Supplementary information:					

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<p>1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.</p> <p>2) Both types of NF1 have the identical construction.</p> <p>3) All types of T1 have the identical construction, differ only in secondary windings.</p> <p>4) The transformers from manufacturers GlobTek/BOAM/HAOPUWEI/ENG have the identical construction.</p>			

- End of report -

Photos



Photos

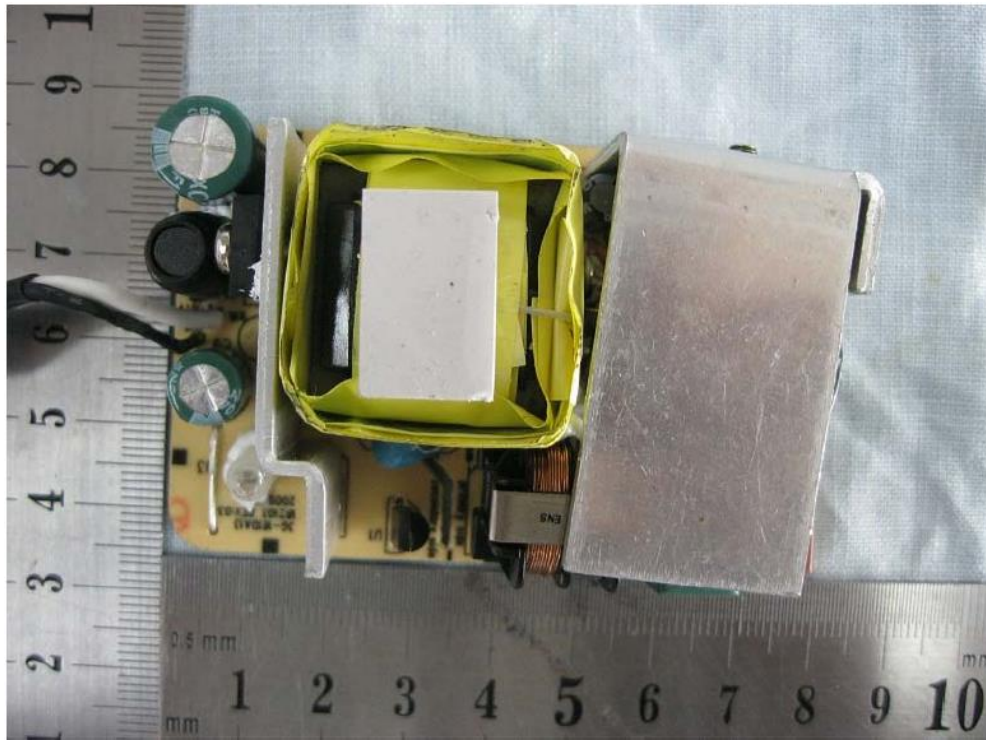


Photos

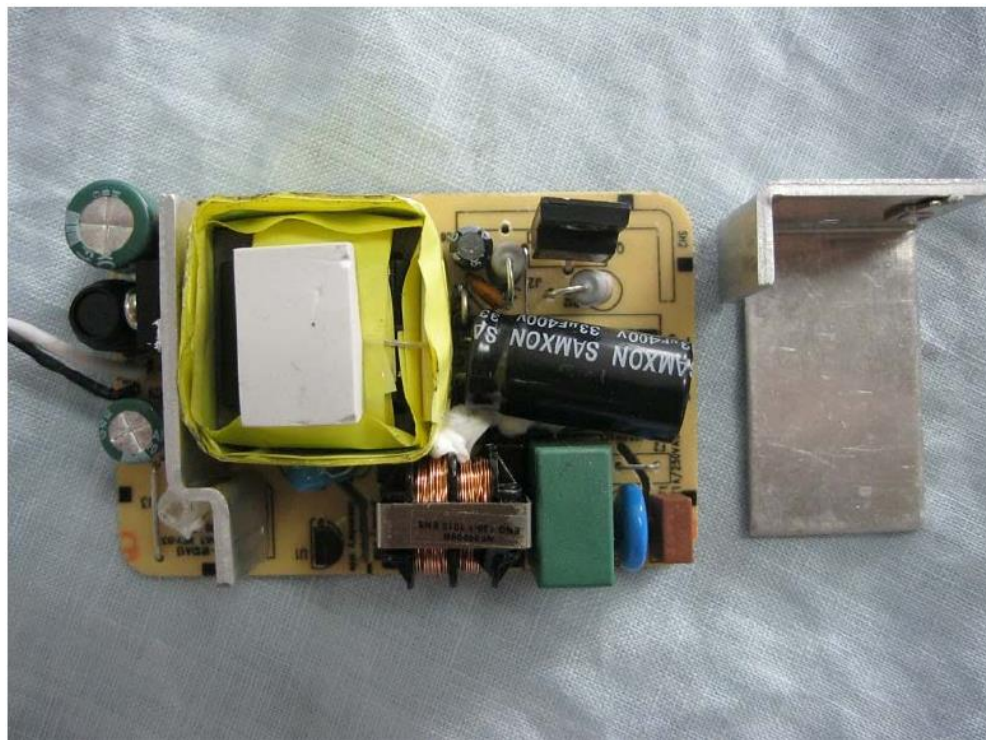


Photos

PCB type 1

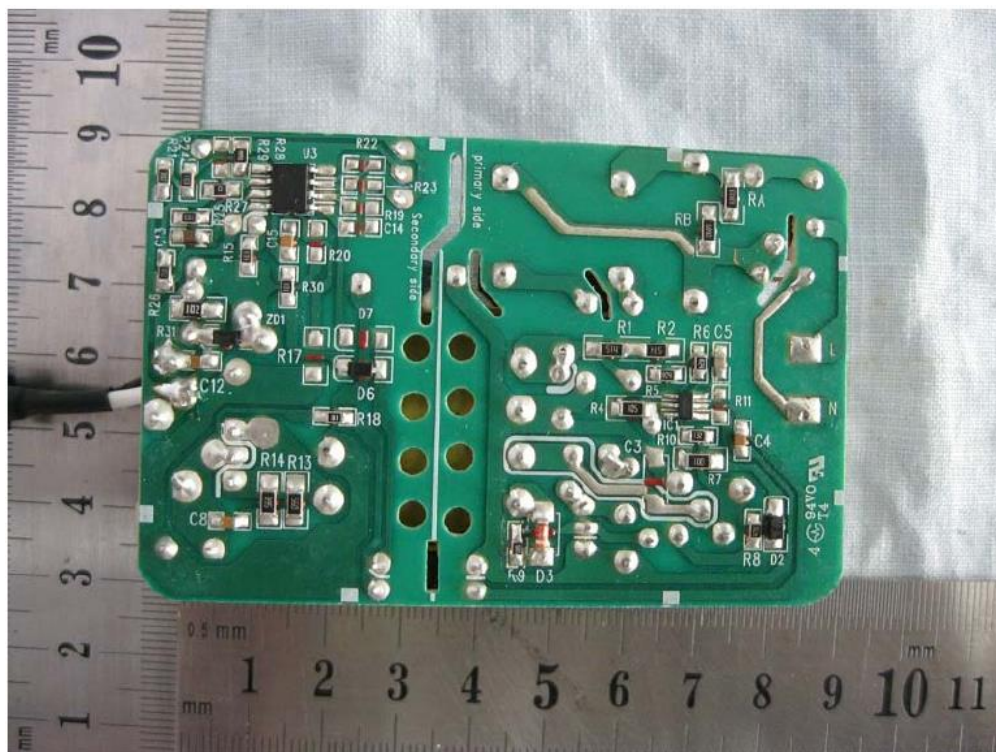


PCB type 1

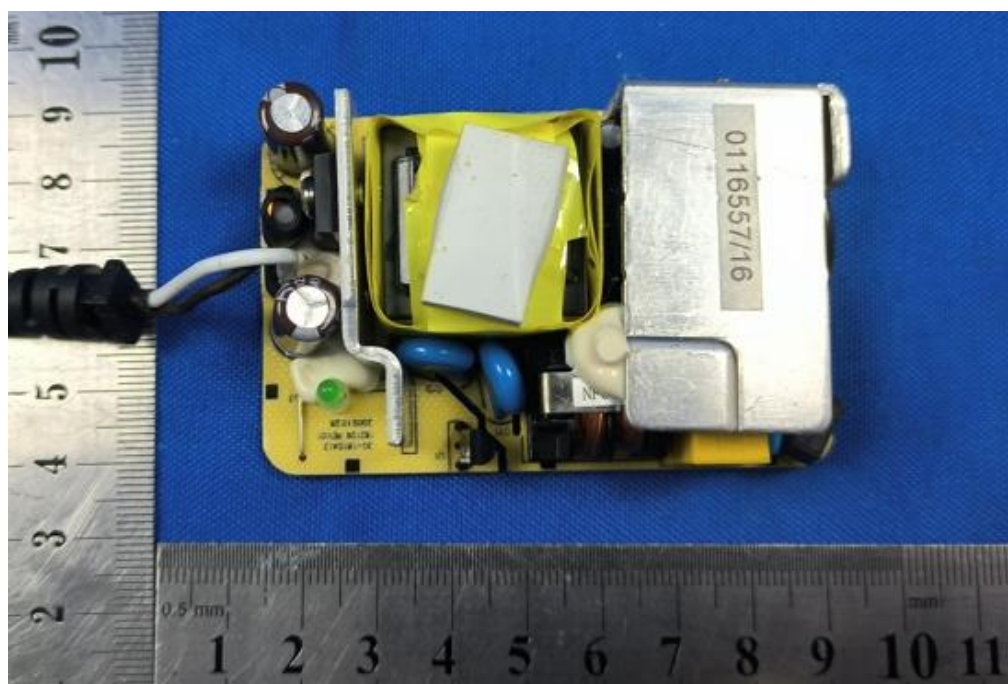


Photos

PCB type 1

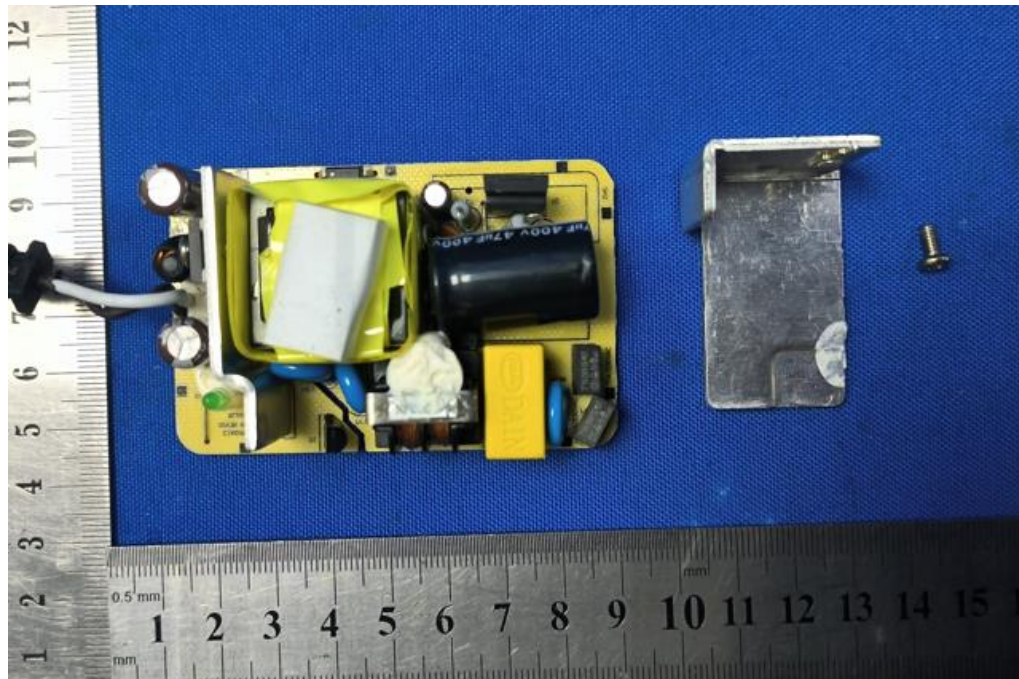


PCB type 2



Photos

PCB type 2



PCB type 2



IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center">ATTACHMENT TO TEST REPORT</p> <p align="center">IEC 62368-1</p> <p align="center">EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</p> <p align="center">(Audio/video, information and communication technology equipment - Part 1: Safety requirements)</p>			
Differences according to : EN IEC 62368-1:2020+A11:2020			
Attachment Form No. : EU_GD_IEC62368_1E			
Attachment Originator : UL(Demko)			
Master Attachment : 2021-02-04			
Copyright © 2021 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	CENELEC COMMON MODIFICATIONS (EN)		
	<p>Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2020+A11:2020. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2018.</p> <p>Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2018 are prefixed "Z".</p>		P
	<p>Add the following annexes:</p> <p>Annex ZA (normative) Normative references to international publications with their corresponding European publications</p> <p>Annex ZB (normative) Special national conditions</p> <p>Annex ZC (informative) A-deviations</p> <p>Annex ZD (informative) IEC and CENELEC code designations for flexible cords</p>		P
1	Modification to Clause 3 .		
3.3.19	Sound exposure <i>Replace 3.3.19 of IEC 62368-1 with the following definitions:</i>		



IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.19.1	<p>momentary exposure level, MEL</p> <p>metric for estimating 1 s sound exposure level from the HD 483-1 S2 test signal applied to both channels, based on EN 50332-1:2013, 4.2.</p> <p>Note 1 to entry: MEL is measured as A-weighted levels in dB.</p> <p>Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.</p>	Not personal music player.	N/A
3.3.19.3	<p>sound exposure, E</p> <p>A-weighted sound pressure (p) squared and integrated over a stated period of time, T</p> <p>Note 1 to entry: The SI unit is $\text{Pa}^2 \text{s}$.</p> $E = \int_0^T p(t)^2 dt$		N/A
3.3.19.4	<p>sound exposure level, SEL</p> <p>logarithmic measure of sound exposure relative to a reference value, E_0, typically the 1 kHz threshold of hearing in humans.</p> <p>Note 1 to entry: SEL is measured as A-weighted levels in dB.</p> $SEL = 10 \lg \left(\frac{E}{E_0} \right) \text{ dB}$ <p>Note 2 to entry: See B.4 of EN 50332-3:2017 for additional information.</p>		N/A
3.3.19.5	<p>digital signal level relative to full scale, dBFS</p> <p>levels reported in dBFS are always r.m.s. Full scale level, 0 dBFS, is the level of a dc-free 997-Hz sine wave whose undithered positive peak value is positive digital full scale, leaving the code corresponding to negative digital full scale unused</p> <p>Note 1 to entry: It is invalid to use dBFS for non-r.m.s. levels. Because the definition of full scale is based on a sine wave, the level of signals with a crest factor lower than that of a sine wave may exceed 0 dBFS. In particular, square wave signals may reach +3,01 dBFS.</p>		N/A
2	Modification to Clause 10		
10.6	<p>Safeguards against acoustic energy sources</p> <p>Replace 10.6 of IEC 62368-1 with the following:</p>		

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.1.1	<p>Introduction</p> <p>Safeguard requirements for protection against long-term exposure to excessive sound pressure levels from personal music players closely coupled to the ear are specified below. Requirements for earphones and headphones intended for use with personal music players are also covered. A personal music player is a portable equipment intended for use by an ordinary person, that:</p> <ul style="list-style-type: none"> – is designed to allow the user to listen to audio or audiovisual content / material; and – uses a listening device, such as headphones or earphones that can be worn in or on or around the ears; and – has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.). <p>EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment.</p> <p>Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3.</p> <p>NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360.</p> <p>NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.5 as soon as possible.</p> <p>Listening devices sold separately shall comply with the requirements of 10.6.6.</p> <p>These requirements are valid for music or video mode only.</p> <p>The requirements do not apply to:</p> <ul style="list-style-type: none"> – professional equipment; <p>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.</p> <ul style="list-style-type: none"> – hearing aid equipment and other devices for assistive listening; – the following type of analogue personal music players: <ul style="list-style-type: none"> • long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and 	Not personal music player.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<ul style="list-style-type: none"> • cassette player/recorder; <p>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.</p> <p>– a player while connected to an external amplifier that does not allow the user to walk around while in use.</p> <p>For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply.</p> <p>The relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>		
10.6.1.2	<p>Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</p> <p>The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz).</p> <p>For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body mounted devices, attention is drawn to EN 50360 and EN 50566.</p>		N/A
10.6.2	Classification of devices without the capacity to estimate sound dose		
10.6.2.1	<p>General</p> <p>This standard is transitioning from short-term based (30 s) requirements to long-term based (40 hour) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3.</p> <p>For classifying the acoustic output $L_{Aeq,T}$, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period.</p> <p>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, measurements may be done over the duration of the complete song. In this case, T becomes the duration of the song.</p> <p>NOTE Classical music, acoustic music and broadcast typically</p>	Not personal music player.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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 content 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 does not exceed the required limit. For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, 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 dB.		
10.6.2.2	RS1 limits (to be superseded, see 10.6.3.2) RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 85 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1. – The RS1 limits will be updated for all devices as per 10.6.3.2.		N/A
10.6.2.3	RS2 limits (to be superseded, see 10.6.3.3) RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or when the combination of player and listening device is known by other means such as setting or automatic 130 detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 100 dB(A) when playing the fixed “programme simulation noise” as described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed “programme simulation noise” as described in EN 50332-1.		N/A
10.6.2.4	RS3 limits		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	RS3 is a class 3 acoustic energy source that exceeds RS2 limits.		
10.6.3	Classification of devices (new)		
10.6.3.1	General Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given below.		N/A
10.6.3.2	RS1 limits (new) RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 80 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.		N/A
10.6.3.3	RS2 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3, shall be ≤ 80 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	50332-1.		
10.6.4	Requirements for maximum sound exposure		
10.6.4.1	Measurement methods All volume controls shall be turned to maximum during tests. Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.		N/A
10.6.4.2	Protection of persons Except as given below, protection requirements for parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3. NOTE 1 Volume control is not considered a safeguard . Between RS2 and an ordinary person , the basic safeguard may be replaced by an instructional safeguard in accordance with Clause F.5, except that the instructional safeguard shall be placed on the equipment, or on the packaging, or in the instruction manual. Alternatively, the instructional safeguard may be given through the equipment display during use. The elements of the instructional safeguard shall be as follows: <div style="text-align: center;">  </div> – element 1a: the symbol  , IEC 60417-6044 (2011-01) – element 2: “High sound pressure” or equivalent wording – element 3: “Hearing damage risk” or equivalent wording – element 4: “Do not listen at high volume levels for long periods.” or equivalent wording An equipment safeguard shall prevent exposure of an ordinary person to an RS2 source without intentional physical action from the ordinary person and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off. The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output exceeding RS1. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output exceeding RS1. The acknowledgement does not		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>need to be repeated more than once every 20 h of cumulative listening time.</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent of how often and how long the personal music player has been switched off.</p> <p>A skilled person shall not be unintentionally exposed to RS3.</p>		
10.6.5	Requirements for dose-based systems		
10.6.5.1	<p>General requirements</p> <p>Personal music players shall give the warnings as provided below when tested according to EN 50332-3, using the limits from this clause.</p> <p>The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the safeguards. This allows the users to be informed in a method that best meets their physical capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration.</p> <p>The personal music player shall be supplied with easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.</p>	Not personal music player.	N/A
10.6.5.2	<p>Dose-based warning and requirements</p> <p>When a dose of 100 % <i>CSD</i> is reached, and at least at every 100 % further increase of <i>CSD</i>, the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1.</p> <p>The warning shall at least clearly indicate that listening above 100 % <i>CSD</i> leads to the risk of hearing damage or loss.</p>		N/A
10.6.5.3	Exposure-based requirements		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>With only dose-based requirements, cause and effect could be far separated in time, defying the purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-term sound level a user can listen at.</p> <p>The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3.</p> <p>The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster.</p> <p>Test of EL functionality is conducted according to EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface.</p> <p>NOTE In case the source is known not to be music (or test signal), the EL may be disabled.</p>		

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		
10.6.6.1	Corded listening devices with analogue input With 94 dB L_{Aeq} acoustic pressure output of the listening device, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the input voltage of the listening device when playing the fixed "programme simulation noise" as described in EN 50332-1 shall be ≥ 75 mV. NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.	Not listening device	N/A
10.6.6.2	Corded listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the $L_{Aeq, \tau}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.3	Cordless listening devices In cordless mode, – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the $L_{Aeq, \tau}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.4	Measurement method <i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i>		N/A
3	Modification to the whole document		

IEC62368_1E - ATTACHMENT							
Clause	Requirement + Test			Result - Remark		Verdict	
	Delete all the “country” notes in the reference document according to the following list:					P	
	0.2.1	Note 1 and 2	1	Note 4 and 5	3.3.8.1		Note 2
	3.3.8.3	Note 1	4.1.15	Note	4.7.3		Note 1 and 2
	5.2.2.2	Note	5.4.2.3.2.2 Table 12	Note c	5.4.2.3.2.4		Note 1 and 3
	5.4.2.3.2.4 Table 13	Note 2	5.4.2.5	Note 2	5.4.5.1		Note
	5.4.10.2.1	Note	5.4.10.2.2	Note	5.4.10.2.3		Note
	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1		Note 2 and 3 and 4
	5.6.8	Note 2	5.7.6	Note	5.7.7.1		Note 1 and Note 2
	8.5.4.2.3	Note	10.2.1 Table 39	Note 3 and 4 and 5	10.5.3		Note 2
	10.6.4	Note 3	F.3.3.6	Note 3	Y.4.1		Note
	Y.4.5	Note					
4	Modification to Clause 1						
1	Add the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.			Considered.		P	

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5	Modification to 4.Z1		
4.Z1	<p>Add the following new subclause after 4.9:</p> <p>To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. mains, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p> <p>c) it is permitted for pluggable equipment type B or permanently connected equipment, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for pluggable equipment type A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>	<p>The equipment is provided with fuse. F1 and F2 inside equipment.</p>	P
6	Modification to 5.4.2.3.2.4		
5.4.2.3.2.4	<p>Add the following to the end of this subclause:</p> <p>The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.</p>		N/A
7	Modification to 10.2.1		
10.2.1	<p>Add the following to ^{c)} and ^{d)} in table 39:</p> <p>For additional requirements, see 10.5.1.</p>		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8	Modification to 10.5.1		
10.5.1	<p>Add the following after the first paragraph:</p> <p>For RS 1 compliance is checked by measurement under the following conditions:</p> <p>In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or pre-sets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.</p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p>The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus.</p> <p>Moreover, the measurement shall be made under fault conditions causing an increase of the high voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.</p> <p>For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.</p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>		N/A
9	Modification to G.7.1		
G.7.1	<p>Add the following note:</p> <p>NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>	Not cover in this report.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10	Modification to Bibliography		
	<p>Add the following notes for the standards indicated:</p> <p>IEC 60130-9 NOTE Harmonized as EN 60130-9.</p> <p>IEC 60269-2 NOTE Harmonized as HD 60269-2.</p> <p>IEC 60309-1 NOTE Harmonized as EN 60309-1.</p> <p>IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series.</p> <p>IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4.</p> <p>IEC 60664-5 NOTE Harmonized as EN 60664-5.</p> <p>IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified).</p> <p>IEC 61508-1 NOTE Harmonized as EN 61508-1.</p> <p>IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1.</p> <p>IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4.</p> <p>IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6.</p> <p>IEC 61843-1 NOTE Harmonized as EN 61843-1.</p> <p>IEC 61843-21 NOTE Harmonized as EN 61843-21.</p> <p>IEC 61843-311 NOTE Harmonized as EN 61843-311.</p> <p>IEC 61843-321 NOTE Harmonized as EN 61843-321.</p> <p>IEC 61843-331 NOTE Harmonized as EN 61843-331.</p>		P
11	ADDITION OF ANNEXES		
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		
4.1.15	<p>Denmark, Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord."</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p>	Class II equipment.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	<p>United Kingdom</p> <p>To the end of the subclause the following is added:</p> <p>The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex</p>	Must consider when sold to this country.	--
5.2.2.2	<p>Denmark</p> <p>After the 2nd paragraph add the following:</p> <p>A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>		N/A
5.4.11.1 and Annex G	<p>Finland and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>For separation of the telecommunication network from earth the following is applicable:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), <p>and</p> <ul style="list-style-type: none"> • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV. 	Not TNV.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; the additional testing shall be performed on all the test specimens as described in EN 60384-14; <p>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.</p>		
5.5.2.1	<p>Norway</p> <p>After the 3rd paragraph the following is added:</p> <p>Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).</p>		P
5.5.6	<p>Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.</p>		N/A
5.6.1	<p>Denmark</p> <p>Add to the end of the subclause</p> <p>Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment.</p> <p><i>Justification:</i></p> <p>In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>	Fuse is integrated in the equipment.	P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.4.2.1	Ireland and United Kingdom After the indent for pluggable equipment type A , the following is added: – the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.		N/A
5.6.4.2.1	France After the indent for pluggable equipment type A , the following is added: – in certain cases, the protective current rating of the circuit supplied from the mains is taken as 20 A instead of 16 A.		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm ² to 1,5 mm ² in cross-sectional area.	Direct plug-in equipment. No Power cord.	N/A
5.6.8	Norway To the end of the subclause the following is added: Equipment connected with an earthed mains plug is classified as class I equipment . See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.	Direct plug-in equipment. No Power cord.	N/A
5.7.6	Denmark To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	<p>Denmark</p> <p>To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .</p>		N/A
5.7.7.1	<p>Norway and Sweden</p> <p>To the end of the subclause the following is added: The screen of the television 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 needs to be isolated from the screen of a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>“Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)”</p> <p>NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en</p>	Not TV.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>galvanisk isolator mellom apparatet og kabel-TV nettet."</p> <p>Translation to Swedish: "Apparater 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 apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet."</p>		
8.5.4.2.3	<p>United Kingdom</p> <p>Add the following after the 2nd dash bullet in 3rd paragraph:</p> <p>An emergency stop system complying with the requirements of IEC 60204-1 and ISO 13850 is required where there is a risk of personal injury.</p>	Not an emergency stop system.	N/A
B.3.1 and B.4	<p>Ireland and United Kingdom</p> <p>The following is applicable:</p> <p>To protect against excessive currents and short-circuits in the primary circuit of direct plug-in equipment, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the direct plug-in equipment, until the requirements of Annexes B.3.1 and B.4 are met</p>	Considered.	P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a polyphase 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.</p> <p>Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a.</p> <p>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a</p> <p><i>Justification:</i> Heavy Current Regulations, Section 6c</p>		N/A
G.4.2	<p>United Kingdom</p> <p>To the end of the subclause the following is added:</p> <p>The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.</p>	Must consider when sold to this country.	--

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	<p>United Kingdom</p> <p>To the first paragraph the following is added:</p> <p>Equipment 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 shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc. (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations.</p> <p>NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		N/A
G.7.1	<p>Ireland</p> <p>To the first paragraph the following is added:</p> <p>Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard</p>	Must consider when sold to this country.	--
G.7.2	<p>Ireland and United Kingdom</p> <p>To the first paragraph the following is added:</p> <p>A power supply cord with a conductor of 1,25 mm² is allowed for equipment which is rated over 10 A and up to and including 13 A.</p>		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		
10.5.2	<p>Germany</p> <p>The following requirement applies:</p> <p>For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking.</p> <p><i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM.</p> <p>NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de</p>	No CRT.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)							
	<table><tr><th rowspan="2">Type of flexible cord</th><th colspan="2">Code designations</th></tr><tr><th>IEC</th><th>CENELEC</th></tr></table>		Type of flexible cord	Code designations		IEC	CENELEC	N/A
	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	60227 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					
Cords insulated and sheathed with halogen-free thermoplastic compounds								
Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-F						
Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-F						

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 (AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment)			
Differences according to : AS/NZS 62368.1:2022			
TRF template used:: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. : AU_NZ_ND_IEC62368_1E			
Attachment Originator : JAS-ANZ			
Master Attachment..... : 2022-07-01			
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	National Differences		
Appendix ZZ	Variations to IEC 62368-1:2018 (ED. 3.0) for Australia and New Zealand		P
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2018 (ED. 3.0)		P
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		N/A
2	After the first paragraph, <i>add</i> the following: The Australian or Australian/New Zealand Standards listed below are modified adoptions of, or not equivalent to, the IEC normative references and are required for the application of this Standard. All references in the source text to those IEC normative references shall be replaced by references to the corresponding Australian or Australian/New Zealand Standards. Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably -AS/NZS 3112, <i>Approval and test specification—Plugs and socket-outlets</i> -AS/NZS 3123, <i>Approval and test specification—Plugs, socket-outlets and couplers for general industrial application</i> -AS/NZS 3191, <i>Electric flexible cords</i> -AS/NZS 60884.1, <i>Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i> -IEC 60086-2 <i>Primary batteries — Part 2: Physical and electrical specifications</i> -AS/NZS 60065, <i>Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)</i> -AS/NZS 60320.1, <i>Appliance couplers for</i>		P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p><i>household and similar general purposes, Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)</i></p> <p><i>-AS/NZS 60320.2.2, Appliance couplers for household and similar general purposes</i></p> <p><i>Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)</i></p> <p><i>-AS/NZS 60695.2.11, Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products</i></p> <p><i>-AS/NZS 60695.11.5, Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance</i></p> <p><i>-AS/NZS 60695.11.10, Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods</i></p> <p><i>-AS/NZS 60884.1, Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i></p> <p><i>-AS/NZS 60950.1, Information technology equipment—Safety, Part 1: General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)</i></p> <p><i>IEC 61032:1997, Protection of persons and equipment by enclosures—Probes for verification</i></p> <p><i>-AS/NZS 61558.1, Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 3, MOD)</i></p> <p><i>-AS/NZS 61558.2.16, Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.</i></p>		

IEC62368_1E - ATTACHMENT				
Clause	Requirement + Test		Result - Remark	Verdict
4.7.2	Requirements Delete the text of the second paragraph and replace with the following: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet conforming to AS/NZS 3112, shall conform to the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets. Conformity is checked by inspection and, if necessary, by the tests in AS/NZS 3112. NOTE: Equipment with plug portions for use in countries other than Australia and New Zealand will need to conform to other countries' requirements Note Additional AS/NZS 3112 Appendix J, TRF is appended to end of this TRF.		Must consider when sold to this country.	--
4.7.3	Compliance Criteria Delete this clause			N/A
4.8.1	General After second list, add the following: NOTE: Refer to the Consumer Goods (Products Containing Button/Coin Batteries) Safety Standard 2020 and Consumer Goods (Products Containing Button/Coin Batteries) Information Standard 2020 for more information on button cell batteries in Australia..			N/A
5.4.10.2.1	General Delete the first paragraph and replace with the following: In Australia, the separation is checked by the test given in both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test given in either 5.4.10.2.2 or 5.4.10.2.3..		No such battery.	N/A
Table 28	Delete Table 28 and replace with the following:			N/A
Parts	Impulse test		Steady state test	
	New Zealand	Australia	New Zealand	Australia
Parts indicated in Clause 5.4.10.1 a) ^a	2.5 kV	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment.	1.5 kV	3 kV
Parts indicated in Clause 5.4.10.1 b) and c) ^b	1.5 kV ^c		1.0 kV	1.5 kV
^a Surge suppressors shall not be removed. ^b Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment. ^c During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.				

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.10.2.2	<i>Delete</i> "NOTE" and <i>replace</i> with "NOTE 1". After NOTE 1, <i>add</i> the following: NOTE 2: For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 3: For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		N/A
5.4.10.2.3	<i>Delete</i> "NOTE" and <i>replace</i> with "NOTE 1". After NOTE 1, <i>add</i> the following: NOTE 2: For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 3: The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A
6	Electrically-caused fire		P
6.6	After Clause 6.6, <i>add</i> the new Clauses 6.201 as follows: 6.201 External power supplies, docking stations and other similar devices (see special national conditions)		P
8.6	Stability of equipment		N/A
Table 36	Footnote ^a , after first sentence, <i>add</i> the following: Equipment having displays with moving images shall include "television sets and display devices".		N/A
8.6.1	After Clause 8.6.1 <i>add</i> the following new clauses: 8.6.201 Restraining Device fixing point (see special national conditions) 8.6.202 Restraining device (see special national conditions)	MS1.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex F Paragraph F.3.3.4	Rated Voltage Delete "NOTE" and <i>replace</i> with NOTE1" After NOTE 1, <i>add</i> the following Equipment that is intended for connection to the supply mains in Australia and New Zealand shall be marked with: (a) A rated voltage of: <ul style="list-style-type: none"> • 230 V for single phase equipment • 400 V for poly phase equipment Or (b) A rated voltage range that includes: <ul style="list-style-type: none"> • 230 V for single phase equipment • 400 V for poly phase equipment NOTE 2: equipment that is not rated as above is not suitable for direct connection to the supply mains in Australia or new Zealand.	230V is included.	P
Annex F.3.3.5	After the list, <i>add</i> the following Equipment that is intended for connection to supply mains in Australia or New Zealand shall be marked with a rated frequency of 50 Hz or a rated frequency range or nominal value which includes 50Hz	50 Hz is included.	P
Annex F.3.8	After "The DC output of an external power supply", insert "or docking stations and other similar external devices"		P
Annex G Paragraph G.4.2	Mains connectors 1 After "IEC 60320", insert "or AS/NZS 60320 series". 2 After "IEC 60906-1", insert "or AS/NZS 3123" 3 <i>After</i> first paragraph <i>add</i> the following: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.	Must consider when sold to this country.	--
Paragraph G.5.3.1	Transformers, General 1 Third dashed point <i>replace</i> 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 Fourth dashed point <i>replace</i> 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.		P
Annex G.7.1	Mains supply cords, General Fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Table G.7	Sizes of conductors 1 First column, second row, <i>delete</i> "6" and <i>replace</i> with "7.5" 2 Second column, second row, <i>delete</i> '0,75' and <i>replace</i> with '0.75' ^b 3 <i>Delete</i> NOTE 1. 4 <i>Replace</i> 'NOTE 2' with 'NOTE:'. 5 <i>Delete</i> 'Footnote b' and <i>replace</i> with the following: ^b This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm ² three-core supply flexible cords are not permitted; see AS/NZS 3191). 6 Footnote c <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1' 7 Footnote d <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A
Annex M M 2.1	<i>Add</i> "IEC 60086-2" to the list	No battery.	N/A
Annex M Paragraph M.3.2	Test method Delete "NOTE" and replace with "NOTE 1" After NOTE 1 <i>add</i> the following: NOTE 2: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of ES1 may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.	No battery.	N/A
	Special national conditions (if any)		

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.201	<p>External power supplies, docking stations and other similar devices</p> <p>For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage—</p> <ul style="list-style-type: none"> (a) at all ES1 outlets or connectors shall not increase by more than 10 % of the output rated voltage under normal operating conditions, measured after 3 s of introducing a single fault condition and after 3 s of introducing abnormal operating conditions; and (b) of a USB outlet or connector shall not increase by more than 3 V or 10 % of the output rated voltage under normal operating conditions, whichever is higher, measured after 3 seconds of introducing a single fault condition and after 3 s of introducing abnormal operating conditions <p>For equipment with multiple rated voltages at the output, the requirements apply with the equipment configured for each output rated voltage in turn</p> <p>NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries. The 3 s measurement delay is based on IEC document 108/742/INF, <i>TC 108, Standards Interpretation Panel Question 15 — Output voltage</i>, in relation to similar requirements in IEC 62368-3:2017.</p> <p>Conformity shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single fault conditions of Annex B.4.</p>	See main report.	P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.201	<p>Restraining device fixing point Freestanding-capable MS2 and MS3 television sets and display devices shall be provided with a fixing point to facilitate the anchoring of the equipment from toppling</p> <p>The fixing point shall conform to Clause 8.7 where the fixing point uses a wall, ceiling or other structure mount. Alternatively, the fixing point shall be capable of withstanding a pull equal to the mass of the equipment in all directions without damage</p> <p>Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point</p>	Not TV.	N/A
8.6.202	<p>Restraining device MS2 and MS3 television sets and display devices shall be provided with a restraining device and associated hardware to attach to the television set or display device.</p> <p>The restraining device shall be capable of withstanding a pull equal to the mass of the equipment in all directions.</p> <p>Instructions for installation or instructions for use shall be provided to specify correct use of the fixing point</p>	Not TV.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center">ATTACHMENT TO TEST REPORT</p> <p align="center">IEC 62368-1</p> <p align="center">U.S.A. AND CANADA NATIONAL DIFFERENCES</p> <p align="center">(Audio/video, information and communication technology equipment – Part 1: Safety requirements)</p>			
Differences according to.....: CSA/UL 62368-1:2019			
TRF template used: IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No.....: US_CA_ND_IEC62368_1E			
Attachment Originator UL(US)			
Master Attachment Dated 2022-03-04			
Copyright © 2022 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
<p align="center">IEC 62368-1 - US and Canadian National Differences</p> <p align="center">Special National Conditions based on Regulations and Other National Differences</p>			
1 (1DV.1) (1.3)	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 1, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.		P
1 (1DV.2.1)	This standard includes additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities. See Annex DVB.		N/A
1 (1DV.2.2)	This standard includes additional requirements for equipment intended for mounting under cabinets. See Annex DVC.		N/A
1 (1DV.2.3)	IEC 62368-3 clause 5 for DC power transfer at ES1 or ES2 voltage levels is considered informative. IEC 62368-3 clause 6 for remote power feeding telecommunication (RFT) circuits is considered normative (see ITU K.50). Alternatively, equipment with RFT circuits are given in either UL 2391 or CSA/UL 60950-21. RFT-C circuits are not permitted unless the RFT-C circuit complies with RFT-V limits ($\leq 200V$ per conductor to earth).		N/A
1 (1DV.3)	For protection against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72 for additional requirements.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1 (DV.5)	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A
4.1 (4.1.17)	For lengths exceeding 3.05 m, external interconnecting 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 cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.6 (4.6.2)	Wire-wrap terminals have special construction and performance requirements.		N/A
4.8 (4.8.3, 4.8.4.5, 4.8.5)	Coin / button cell batteries have modified special construction and performance requirements.	No battery.	N/A
5.4.2.3.2 (5.4.2.3.2.1)	Surge Arrestors and Transient Voltage Surge Suppressors installed external to the equipment are required to comply with the appropriate NEC and CEC requirements.		N/A
5.5.9	Receptacles, rated 125-V, single phase, 15- or 20-A accessible to either ordinary, instructed, or skilled persons are required to be provided with GFCI Protection for Personnel if the equipment containing the receptacles is installed outdoors. The protection devices are required to comply with UL 943, and CAN/CSA C22.2 No.144.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.7, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment.		N/A
5.7.8 (5.7.8.1)	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure is required to comply with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A
Annex F (F.3.3.9)	Output terminals provided for supply of other equipment, except mains supply, are required to be marked with a maximum rating or reference to equipment permitted to be connected.	Max. output rating is listed on the product.	P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex F (F.3.7)	Outdoor Enclosures are required to be classified and marked in accordance with UL 50 or 50E, or CAN/CSA C22.2 No. 94.1 or 94.2.		N/A
Annex G (G.7)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	Not permanent connection.	N/A
	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	No power supply cord provided.	N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.	No power supply cord provided.	N/A
	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. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.	No power supply cord provided.	N/A
	Power supply cords for outdoor equipment are required to be suitable outdoor use type as required by Section 400.4 of the NEC and Rule 4-012 of the CEC, i.e., marked "W."	Not outdoor equipment.	N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No ring signal circuit.	N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
Annex Q (Q.3)	Equipment with paired conductor and/or coax communications cables/wiring connected to building wiring are required to have special voltage, current, power and marking requirements.		N/A
Annex DVA (1)	Equipment that is designed such that it may be powered from a separate electrical service, is required to meet applicable requirements for service equipment for control and protection of services and their installation and complies with Article 230 of the National Electrical Code (NEC), NFPA 70 and Section 6 of the Canadian Electrical Code, Part I, CSA C22.1.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Equipment intended for use in spaces used for environmental air (plenums) are subjected to special flammability requirements for heat and visible smoke release.		N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. and Canadian Regulations.		N/A
	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
	Storage batteries and battery management equipment, other than associated with lead-acid batteries, and including battery backup systems that are not an integral part of stationary AV and ICT equipment, such as provided in separate cabinets, are required to be certified (listed) to the appropriate standard(s) for such storage batteries and equipment.		N/A
Annex DVA (5.6)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	See main report.	P
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a minimum flammability classification of V-1.		N/A
Annex DVA (10.3)	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).		N/A
Annex DVA (10.5)	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).		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (F.3.3.4)	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. Additional considerations apply for voltage ratings that exceed the attachment cap rating or that are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."	No applicable.	N/A
Annex DVA (F.3.3.6)	Equipment identified for ITE (computer) room installation is required to be marked with the rated current.		N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position, where mounted in an enclosure, vertically mounted disconnect switches and circuit breakers with vertical operating means extending outside the enclosure are required to indicate in a location visible when accessing the external operating means whether the switch or circuit breaker is in the open (off) or closed (on) position.		N/A
Annex DVA (G.3.4)	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.	No standard outlet.	N/A
	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-400 and 10-612.	No isolated ground.	N/A
Annex DVA (G.4.3)	Interconnection of units by conductors supplied by a limited power source, or a Class 2 circuit defined in the NEC/CEC may have field wiring connections other than specified in DVH.3, such as wire-wrap and crimp-on types, if the limited power source and Class 2 circuits are separated from all other circuits by barriers, routing or fixing.		N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).	No AC motor in the equipment.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.7)	Flexible cords used outdoors are required to have the suffix "W" marked on the flexible cord.		N/A
Annex DVA (M)	For ITE 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 ITE room remote power-off circuit.		N/A
Annex DVA (Q)	If applicable per NEC 725.121(C), some limited power sources supplied from AV/ICT equipment are required to have a label indicating the maximum voltage and rated current output for per conductor for each connection point. Where multiple connection points have the same rating, a single label is permitted to be used.		N/A
	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1 are required to be marked with the voltage rating and "Class 2" or equivalent. The marking is located adjacent to the terminals and visible during wiring.		N/A
	Applicable parts of Chapter 8 of the NEC, and Rules 54 and 60 of the CEC, may be applicable to ITE installed outdoors with connections to communication systems.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These equipment and components include: appliance couplers, attachment plugs, battery backup systems, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, modular data centres, power supply cords, some power distribution equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	Critical components are IEC or UL certified. See list of critical components in main CB report (§4.1.2).	P
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.	Not equipment for permanent connection to the mains supply.	N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are required to be in accordance with the NEC/CEC.		N/A
Annex DVH (DVH.2.1)	For safe and reliable connection to a mains, permanently connected equipment is to be provided.		N/A
Annex DVH (DVH.2.2)	Additional considerations for D.C. mains.		N/A
Annex DVH (DVH.3.2.1)	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified.		N/A
Annex DVH (DVH.3.2.3)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N/A
Annex DVH (DVH.3.2.4)	All associated mains supply terminals are located in proximity to each other and to the main protective earthing terminal, if any.		N/A
Annex DVH (DVH.3.2.5)	Terminals are located, guarded or insulated so that, should a strand of a conductor escape when the conductor is fitted, there is no likelihood of accidental contact between such a strand and accessible conductive parts or unearthed conductive parts separated from accessible conductive parts by supplementary insulation only.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.3.3)	When field connection to an external circuit is via wires (example, free conductors), the wires are not smaller than 18 AWG (0.82 mm ²) and the free length of the wire inside an outlet box or wiring compartment is 150 mm or more.		N/A
Annex DVH (DVH.3.4)	Size of protective earthing conductors and terminals	Class II equipment.	N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	Not permanently connected equipment.	N/A
Annex DVH (DVH.4.1)	Wire bending space		N/A
Annex DVH (DVH.4.2)	Volume of wiring compartment		N/A
Annex DVH (DVH.4.3)	Separation of circuits		N/A
Annex DVH (DVH.5)	Equipment markings and instructional safeguards		P
Annex DVH (DVH.5.1)	Identification of protective earthing terminal		P
Annex DVH (DVH.5.2)	Identification of terminal for earthed conductor (neutral)		P
Annex DVH (DVH.5.3)	Identification of terminals for aluminium conductors		N/A
Annex DVH (DVH.5.4)	Wire temperature ratings		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.		N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.	No connection to such outside cable	N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
<p align="center">ATTACHMENT TO TEST REPORT</p> <p align="center">IEC 62368-1</p> <p align="center">SINGAPORE NATIONAL DIFFERENCES</p> <p align="center">Audio/video, information and communication technology equipment - Part 1: Safety requirements</p>			
Differences according to : Special National Conditions			
TRF template used:..... : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. : SG_ND_IEC62368_1E			
Attachment Originator : Intertek Testing Services (Singapore) Pte Ltd			
Master Attachment..... : 2021-07-16			
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	National Differences		
	Not Applicable		
Chapter 7	<p>Special national conditions (if any)</p> <p>Controlled goods under Consumer Protection (Safety Requirements) Registration Scheme (CPS) are required to be tested to additional requirements stipulated by Enterprise Singapore in Chapter 7 of the CPS information booklet.</p> <p>The CPS information booklet is updated on an ongoing basis. At the point of testing, refer to the latest copy of the CPS information booklet for the minimum edition of standard to apply for testing of products under the CPS scheme and any new requirements.</p> <p>Link to CPS information booklet: https://www.consumerproductsafety.gov.sg/files/cps-info-booklet.pdf </p>		
3	All appliances must be tested to 230 VAC, 50 Hz.	AC Input: Tested within the range 100-240 V~, 50-60Hz or 50/60Hz.	P



IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4	Appliance fitted with voltage selector shall be tested as follows: Connect appliance to 230 VAC mains with voltage selector switch to settings not suitable for operation at 230 VAC.	No voltage selector	N/A
5	All appliances (with tropical test requirements in applicable Standards) shall comply with the tropical condition test as stated in the relevant IEC Standards.	See main test report.	P
6	All Class I appliances (3-pin mains plug) must be fitted with 3-pin mains plugs complying with SS 145/SS 472 that are registered with the Authority.	Class II equipment.	N/A
7	a) All Class II appliances must be fitted with 2-pin mains plug complying with EN 50075. b) Class II appliances that are fitted with 3-pin mains plugs must use plugs that comply with SS 145 and registered with the Authority.	See main report.	P
9	Detachable power cord set must be listed in the test report critical component list.		N/A
18	AC Adaptor incorporated with 13A socket-outlet to be tested to additional tests clauses 13, 17 and 18 of SS 246 (till 25/10/2021), or clauses 12.1 & 12.3 of SS 145 Part 3: 2020.	Not such adaptor.	N/A
19	Supplier who is supplying AC adaptors with detachable interchangeable plug pins must include with its products, written instructions to inform customer on the type of detachable interchangeable plug pins that are approved and suitable to use in Singapore. These instructions are to be submitted to the Conformity Assessment Body for verification when applying for Certificate of Conformity.	Must consider when sold to this country.	--

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
20	<p>For AC Adaptors supplied together with Personal Mobility Devices:</p> <ol style="list-style-type: none"> 1. Registered Supplier to declare the model of the AC adaptor that is to be used with/ bundled together with the PMDs; 2. Registered Supplier to provide valid IEC 60950-1 or IEC 62368-1 test reports for certification and registration of the declared AC adaptor under the CPS scheme; and <p>Registered Supplier to provide the UL 2272 test report as supporting document, showing that the listed AC adaptor in the UL 2272 test report is the model declared to be used with/ bundled together with the PMDs.</p>	Not such adaptor.	N/A
21	CD/ DVD ROMs (used in personal computers) to have test certificate showing that CD/DVD ROM has complied with IEC 60825- 1.	The equipment does not consist of CD/DVD ROM.	N/A
22	Modem card incorporated in the personal computer must be tested at set level (sub-clauses 5.1 & 6 of IEC 60950) or at component level.	The equipment does not consist of Modem Card.	N/A
23	Powerline Ethernet Adaptor incorporated with 13A socket-outlet, to be tested to additional test clauses 13, 17 & 18 of SS 246 (till 25/10/2021), or clauses 13, 17 & 18 of SS 145 Part 3: 2020.	Not used.	N/A
	Other additional requirements which may be included in Chapter 7 of the information booklet in ongoing basis at the time of testing.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 CHINA NATIONAL DIFFERENCES (AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT -PART 1: SAFETY REQUIREMENTS)			
Differences according to : GB 4943.1-2022			
TRF template used:..... : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. : CN_ND_IEC62368_1E			
Attachment Originator : CQC			
Master Attachment..... : Dated 2022-12-01			
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	National Differences		
4.1.2	Use of components Add a paragraph: A component used shall comply with related requirements corresponding altitude of the equipment.		P
4.11	Add clause 4.11,as follows: Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except the device shall meet the all requirement of Fault conditions. If pluggable equipment type B or permanently connected equipment depends on protective devices outside the equipment for protection, this shall be stated in the installation instructions of the equipment, with requirements for short-circuit protection, over-current protection ,or both if necessary.	Fuse is integrated in the equipment.	P
5.3.2.2	Contact requirements Amend the 2 nd paragraph of table 8 to be: For equipment intended to be used at altitude of 2000m to 5000m, the values in this table are multiplied by the multiplication factor corresponding altitude of 5000m.	Considered.	P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.5	<p>Multiplication factors for altitudes higher than 2 000 m above sea level</p> <p>Amend the 1st paragraph to be:</p> <p>For equipment to be operated at more than 2000 m above sea level and up to 5000m above sea level, the minimum CLEARANCE in tables 10,11 and 14, and resistance test voltages required in table 15, shall meet the requirements of 5000 m above sea level, This is multiplied by the multiplication factor corresponding altitude of 5000m in table 16.</p> <p>For equipment to be used at equal or less than 2000 m above sea level, the minimum CLEARANCE in tables 10, 11 and 14, and resistance test voltages required in table 15, shall meet the requirements of 2000 m above sea level. This is multiplied by the multiplication factor corresponding altitude of 2000m in table 16.</p> <p>Delete note 2 of Clause 5.4.2.5.</p>	Must consider when sold to this country.	--
5.4.5.1	<p>General</p> <p>Delete the 2nd paragraph of Clause 5.4.5.1: This test does not apply to equipment where one antenna terminal on the equipment is connected to earth in accordance with 5.6.7.</p> <p>Add the following:</p> <p>The Insulation resistance between CATV antenna coaxial sockets and protective earth of apparatus shall comply with BASIC INSULATION. If it's possible that CLASS II apparatus with CATV antenna coaxial sockets connect with protective earth of another CLASS I apparatus by other terminals, the insulation resistance between them shall comply with BASIC INSULATION as well.</p> <p>If antenna cable separated from the protective earth before connection to the apparatus, there is no requirements of Insulation resistance between them but F.4 requirements shall be meet.</p> <p>Delete "NOTE" of Clause 5.4.5.1</p>		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.8	<p>Humidity conditioning</p> <p>Amend clause 5.4.8 as follows :</p> <p>The humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature (40±2) °C and a relative humidity of (93±3)%. During this conditioning, the component or subassembly is not energized.</p> <p>For equipment not to be operated at tropical climatic conditions, humidity conditioning is conducted for 48 h in a cabinet or room containing air with a relative humidity of (93±3) %. The temperature of the air, at all places where samples can be located, is maintained within 2 °C of any convenient value between 20 °C and 30 °C such that condensation does not occur.</p> <p>Add note: For equipment to be operated at 2000 m - 5000m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered.</p> <p>Pre-processing conditions and requirements below 2000m can be used until additional data is available.</p>	Considered.	P
6.4.9 Y.4.3	Delete references to ASTM and NEMA.		N/A
6.5.1	<p>General requirements</p> <p>Delete the text of the Note "Wire complying with UL 2556 VW-1 is considered to comply with these requirements".</p>	Considered.	P
F.1	Amend the second paragraph of annex F.1 to be: Unless symbols are used or otherwise specified, safety related equipment markings, instructions, and instructional safeguards shall be in normative Chinese.	Must consider when sold to the country.	--

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
F.2.2	<p>After the first paragraph of annex F.2.2 ,add the following:</p> <p>For apparatus intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording or a symbol shown below shall fixed to the equipment at readily visible place.</p> <p>"Only used at altitude not exceeding 2000m."</p>  <p>For apparatus intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording or a symbol shown below shall fixed to the equipment at readily visible place.</p> <p>"Only used in not-tropical climate regions."</p>  <p>If only symbol used, the explanation of the symbol shall be contained in the instruction manual.</p> <p>The statements above shall be given in a language acceptable to the regions where the apparatus is intended to be used.</p>	Up to 3500m.	N/A
F.3.3.4	<p>After the last paragraph, Added:</p> <p>...for single rated voltage, "220 V" or three-phase "380V" shall be marked only. For a rating voltage range, 220 V or three-phase 380V shall be covered. For multiple rated voltages, one of them shall be 220 V or three-phase 380V and which default setting from manufacture shall be 220 V or three-phase 380V as well.</p>	Considered.	P
F.3.3.5	<p>After the last paragraph, Added:</p> <p>Rated frequency shall be 50Hz or frequency range shall cover 50Hz.</p>	Considered.	P
F.4	<p>Instructions</p> <p>Added:</p> <ul style="list-style-type: none"> For apparatus incorporating antenna coaxial sockets which is non-separated with CATV network, a warning wording or a similar shall be given in the instruction manual: "A CATV cable intended to be connected to apparatus shall be separated with the protective earth of the apparatus, otherwise fire hazard might be caused." 		N/A
F.5	<p>Instructional safeguards</p> <p>In table F.2, change 230V to 220V, change 400Y/230V 3Ø to 380 Y/220 V 3Ø</p>	Considered.	P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<p>Amend clause G.4.2 as follows :</p> <p>Plugs connected to the MAINS in apparatus shall comply with GB/T 1002,GB/T 1003,GB/T 2099.1 or GB/T11918 (All parts) series.</p> <p>Appliance coupler shall comply with GB/T 17465 (All parts) series or GB/T 11918 (All parts) series.</p>	Must consider when sold to this country.	--
	Special national conditions (if any)		
0.12	<p>Add clause 0.12</p> <p>Description of relevant information.</p>	Considered.	P
1	<p>GB 4943.1-2022 applies to equipment used at altitudes not exceeding 5000m above sea level,</p> <p>For apparatus intended to be used at altitude not exceeding 2000m, The requirements can be appropriately reduced, but warning instructions shall be provided..</p> <p>Revise the sixth paragraph of 1 as:</p> <p>In addition to specified by the manufacturer, this document assumes a maximum altitude of 5000m</p>	Up to 3500m.	N/A
B.2.6.1	<p>Amend T_{ma} as follows:</p> <p>T_{ma} is the maximum ambient temperature permitted by the manufacturer's specification, or 35 °C, whichever is greater.</p> <p>Add note 1: For equipment not to be operated at tropical climatic conditions, T_{ma} is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater.</p> <p>Add note 2: For equipment to be operated at 2000m-5000m above sea leave, its temperature test conditions and temperature limits are under consideration. temperature test conditions and temperature limits below 2000m can be used until additional data is available.</p>	Considered.	P
Annex Z (normative)	<p>Added annex Z:</p> <p>Instructions of the new safety warning labels.</p>		N/A
Annex AA (informative)	<p>Added annex AA:</p> <p>Illustration relative to safety explanation in normative Chinese, Tibetan, Mongolian, Zhuang Language and Uighur.</p>	Must consider when sold to this country.	--

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1:2018 SAUDI ARABIA NATIONAL DIFFERENCES (AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT PART 1: SAFETY REQUIREMENTS)			
Differences according to : National standard SASO-IEC 62368-1:2020			
TRF template used:..... : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No. : SA_ND_IEC62368_1E			
Attachment Originator : SASO			
Master Attachment..... : 2022-12-22			
Copyright © 2022 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		
	Plugs used for pluggable equipment comply with standard SASO-2203.	Must consider when sold to this country.	--
--	Frequency (Hz)		
	60 Hz	60Hz is included.	P
--	Rated voltage (V)		
	Single phase 230 V Three phase 400 V	Single phase 230V is included.	P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 (JAPAN) NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
Differences according to : J62368-1 (2020)			
TRF template used:..... : IECEE OD-2020-F3, Ed. 1.1			
Attachment Form No..... : JP_ND_IEC62368_1D			
Attachment Originator : UL (JP)			
Master Attachment..... : Date 2021-02-04			
Copyright © 2021 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		—
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this standard or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.	Considered.	P
5.6.1	Mains socket-outlet and appliance outlet shall comply with Clause G.4.2A if they are incorporated as part of the equipment.	Not applicable.	N/A
5.6.2.1	Mains connection of class 0I equipment: Instructional safeguard in accordance with Clause F.3.6.1A; Mains plug having a lead wire for protective earthing connection of class 0I equipment; Independent main protective earthing terminal installed by ordinary person.	Class II equipment.	N/A
5.6.2.2	This requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.		N/A
5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cable with 1.25 mm ² or more cross-sectional area		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series or JIS C 8303, or otherwise being considered to comply with relevant regulations, or that is provided with mains appliance outlet as specified in JIS C 8283-2-2 for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.	Class II equipment.	N/A
5.7.4	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990.	Class II equipment.	N/A
6.4.3.3	A fuse complying with JIS C 6575 series or a fuse having equivalent characteristics shall open within 1 s. For Class A fuse of JIS C 6575, replace "2.1 times" by "1.35 times" and in case of Class B fuse of JIS C 6575, replace "2.1 times" by "1.6 times". A fuse not complying with JIS C 6575 series shall be tested with the breaking capacity taken into account.		N/A
8.5.4.2.1	Only three-phase stationary equipment rated more than 200 V ac can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.	No applicable.	N/A
8.5.4.2.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.		N/A
8.5.4.2.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.	No applicable.	N/A
8.5.4.2.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.	No applicable.	N/A
9.2.6, Table 38	Handles, Knobs, grips, etc. and external surfaces either held, touched or worn against the body in normal use (> 1 min) ^{b,c}	Considered.	P

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.1	Instructional safeguard of class 0I equipment in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8303 or relevant regulation to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.	Class II equipment.	N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic.	See main report.	P
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.3 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions and instructional safeguard shall be provided regarding the earthing connection.	Class II equipment.	N/A
F.3.6.2.1	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.		N/A
F.4	Instruction for audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A. Installation instruction for the protective earthing connection for class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment.		N/A
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.	No thermal link used.	N/A
G.3.4	Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the relevant part of JIS C 6575 (corresponding to IEC60127) or shall have equivalent characteristics. If there are no applicable IEC standards, overcurrent protective devices used as a safeguard shall comply with their applicable IEC standards.		N/A
G.4.1	This requirement is not applicable to Clauses G.4.2 and G.4.2A.		—

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<p>Mains connector shall comply with JIS C 8282 series, JIS C 8283 series, JIS C 8285, JIS C 8303 or IEC 60309 series.</p> <p>Mains plugs and socket-outlets shall comply with JIS C 8282 series, JIS C 8303, IEC 60309 series, or have equivalent or better performance.</p> <p>A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286.</p> <p>Construction preventing mechanical stress not to transmit to the soldering part of inlet terminal.</p> <p>Consideration for an equipment rated not more than 125 V provided with Type C14 and C18 appliance coupler complying with JIS C 8283 series.</p>	Must consider when sold to this country.	--
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively.	No mains socket-outlet.	N/A
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.	Direct plug-in equipment.	N/A
G.8.3.3	Withstand $1,71 \times 1.1 \times U_0$ for 5 s.	No such part.	N/A