



Test Report issued under the responsibility of:



TEST REPORT
IEC 62368-1
Audio/video, information and communication technology equipment
Part 1: Safety requirements

Report Number..... : T223-0246/23

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Name of Testing Laboratory preparing the Report : SIQ Ljubljana
 SIQ Ljubljana is accredited by Slovenian Accreditation with accreditation number LP-009 in the field of testing (SIST EN ISO/IEC 17025).

Applicant's name : **GlobTek, Inc.**
Address : 186 Veterans Drive, Northvale NJ 07647, New Jersey, USA

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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Test item description	ICT/ITE Power Supply	
Trade Mark(s)	 GlobTek, Inc.	
Manufacturer	GlobTek, Inc. 186 Veterans Drive, Northvale NJ 07647, New Jersey, USA	
Model/Type reference	GT-41076-WWVV-X.X series (see page 7 for details)	
Ratings	Input: 100-240 Vac.; 0,3 A; 50-60 Hz Output: 3-24 Vdc; max. 6 W (see page 7 for details)	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	SIQ Ljubljana
	Testing location/ address	Mašera-Spasičeva ulica 10, SI-1000 Ljubljana Slovenia
	Tested by (name, function, signature)	Rok Štampohar (Service Provider)
	Approved by (name, function, signature) ..	Matej Šmidovnik (Approved Signatory)
<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) :		

<p>List of Attachments (including a total number of pages in each attachment):</p> <ol style="list-style-type: none"> 1. National differences according to IEC 62368-1:2018 (Third Edition) – Enclosure No. 1 (28 pages) 2. Pictures of the unit – Enclosure No. 2 (12 pages) 3. Technical documentation – schematics, layouts, transformer data – Enclosure No. 3 (6 pages) 4. Additional test data – Enclosure No. 4 (4 pages) 5. Construction data, measurement of plug-in power supply connector, AUS plug report – Enclosure No. 5 (29 pages)

Summary of testing:

<p>Tests performed (name of test and test clause):</p> <p>4.7 Equipment for direct insertion into mains socket-outlets: moment test</p> <p>5.2 Electrical energy source measurement</p> <p>5.4.1.4 Measurement of maximum operating temperatures for materials, components and systems</p> <p>5.4.1.8 Determination of working voltage</p> <p>5.4.2 / 5.4.3 Clearance and creepage distances</p> <p>5.4.4.2 Minimum distance through insulation</p> <p>5.4.8 Humidity conditioning</p> <p>5.4.9 Electric strength test</p> <p>5.5.2.2 Capacitor discharge test</p> <p>5.6.6 Resistance of the protective bonding system</p> <p>5.7 Prospective touch voltage, touch current and protective conductor current</p> <p>6.2.2.2 Power measurement for worst-case fault</p> <p>6.2.2.3 Power measurement for worst-case power source fault</p> <p>9.3 Temperature test</p> <p>B.2.5 Input test</p> <p>B.3.1 – B.3.8 Simulated abnormal operating conditions: - Maximum load at output terminals</p> <p>B.4.1 – B.4.9 Simulated single fault conditions: - Short circuit of clearances for functional insulation - Short circuit of creepage distances for functional insulation - Short circuit and interruption of electrodes in</p>	<p>Testing location:</p> <p>SIQ Ljubljana Mašera-Spasičeva ulica 10, SI-1000 Ljubljana, Slovenia</p> <p>See also history sheet.</p>
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<p>tubes and semiconductors</p> <ul style="list-style-type: none"> - Short circuit or disconnection of passive devices - Continuous operation of components <p>F.3.10 Permanence of markings</p> <p>G.5.3.3 Transformer overload test</p> <p>Annex Q.1 Limited Power Source</p> <p>T.2 Steady force test, 10 N</p> <p>T.4 Steady force test, 100 N</p> <p>T.5 Steady force test, 250 N</p> <p>T.6 Enclosure impact test</p> <p>T.7 Drop test</p> <p>T.8 Stress relief test</p>	
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Summary of compliance with National Differences (List of countries addressed):

EUROPEAN GROUP AND NATIONAL DIFFERENCES (CENELEC), Australia, New Zealand

The product fulfils the requirements of EN IEC 62368-1:2020 + A11:2020 and BS EN IEC 62368-1:2020 + A11:2020.

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.

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: 2020-08-10 Rev. No. 1: 2023-03-02 Date (s) of performance of tests: From 2020-08-10 to 2020-08-14	
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 checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC60335-1:	
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, New Jersey, USA 2) GlobTek (Suzhou) Co. Ltd. Building 4, No. 76 JinLing East Road, Suzhou Industrial Park, Suzhou JiangSu, 215021, China
General product information and other remarks: Switch mode Power Supply family with SELV output for direct plug in or with appliance inlet use. Units are different in the output voltage, which range from 3-24 Vdc.	

Model Differences –

NOMENCLATURE:

GT-41076-WWVV-X.X series

WW is the standard output wattage, with a maximum value of "06",

VV is the standard rated output voltage designation, with a maximum value of "24", which can be 03, 05, 09, 12, 15, 18, 20, 24.

-X.X is optional, which can be "-0.1" to "-3.9", denote the output voltage differentiator, subtracting -X.X volts from standard output voltage VV in 0.1V increments, the actual output voltage range is 3-24Vdc, blank is to indicate the no voltage different.

Model	Output Voltage(V)	Max. output current (A)	Max. output wattage (W)
GT-41076-0603	3	2	6
GT-41076-WW05-X.X	3.1-5.0	1,93	6
GT-41076-WW09-X.X	5.1-9.0	1,17	6
GT-41076-WW12-X.X	9.1-12.0	0,65	6
GT-41076-WW15-X.X	12.1-15.0	0,49	6
GT-41076-WW18-X.X	15.1-18.0	0,39	6
GT-41076-WW20-X.X	18.1-20.0	0,33	6
GT-41076-WW24-X.X	20.1-24.0	0,29	6

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

Additional application considerations – (Considerations used to test a component or sub-assembly) –

1. The products were tested to be suitable for connection to ≤ 20 A (USA) branch circuit or a ≤ 16 A branch circuit in series. The unit is approved for TN mains star connections. The unit provides internally one fusible resistor in line.
2. All secondary output circuits are separated from mains by reinforced insulation and rated ES1 and PS2.
3. The unit is forming part of the mains plug; therefore mains plug is considered as disconnecting device. Appliance inlet may be used instead of the plug. In this case unit becomes table top.
4. The power supply is rated Class II.
5. The transformers T1 provide reinforced insulation. These transformers are built up to fulfil the requirement of insulation class B and provide in addition an UR (OBJY2) insulation system. (see also list of safety critical components).
6. The equipment has been evaluated for use in a Pollution Degree 2 and overvoltage category II environment and a maximum altitude of 3000 m
7. The product was evaluated for a maximum ambient of 30°C. The temperature test was performed with unit in vertical and horizontal position without forced air cooling
8. Dimensions of the injection part of the European plug are in accordance with the requirement of EN 50075 standard. Dimensions of the injection part of the US plug are in accordance with the requirement of UL 1310 standard. Dimensions of the injection part of the UK plug are in accordance with the requirement of the BS 1363 standard. Dimensions of the injection part of the Australian plug are in accordance with the AS/NZS 3112:2017.

Only dimensions of the plugs were measured and torque test was performed. Compliance with the BS 1363.

History Sheet:

Date	Report No.	Change/Modification	Rev. No.
2020-08-31	T223-0502/20	<p>This test report is based on CB Test Report T223-0138/20 acc. to IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013.</p> <p>Additional tests were performed to comply also according to IEC 62368-1:2014 (Second Edition) & EN 62368-1:2014 + A11:2017:</p> <p>5.2 Electrical energy source measurement</p> <p>5.4.9 Electric strength test</p> <p>5.7 Prospective touch voltage, touch current and protective conductor current</p> <p>6.2.2.2, 6.2.2.3 Power Measurements</p> <p>9 Temperature test (Thermal Burn Injury)</p> <p>F.3.10 Test for performance of marking</p>	-
Latest Change / Modification			
<p>This test report is based on CB Test Report T223-0719/21 M1 acc. to IEC 62368-1: 2014.</p> <p>The following changes were made:</p> <ul style="list-style-type: none"> -Optional Varistor (ZNR) was removed. -Only fusible resistor used. (Was previously optional) <p>The list of critical components was updated.</p> <p>No other changes.</p> <p>No impact on safety, this no additional tests considered required.</p> <p>Results for all other test methods were used from above referred test report.</p>			1.0

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: All circuit except output circuits	Ordinary/Child	N/A	N/A	Equipment Enclosure + reinforced insulation between input ES3 and output ES1
ES1: pins of appliance inlet	Ordinary/Child	N/A	N/A	N/A
ES1: all output connectors	Ordinary/Child	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: All primary and secondary circuits inside the equipment enclosure	All combustible materials within equipment fire enclosure	No excessive temperature under normal and abnormal operation	No fire after single fault condition	fire enclosure
PS3	Reduction of the likelihood of the entry of foreign objects	N/A	Equipment safeguard (no openings)	N/A
PS1	Connections of secondary equipment	N/A	N/A	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	Ordinary/Child	N/A	N/A	N/A
MS1: equipment mass	Ordinary/Child	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: accessible parts	Ordinary	N/A	N/A	N/A

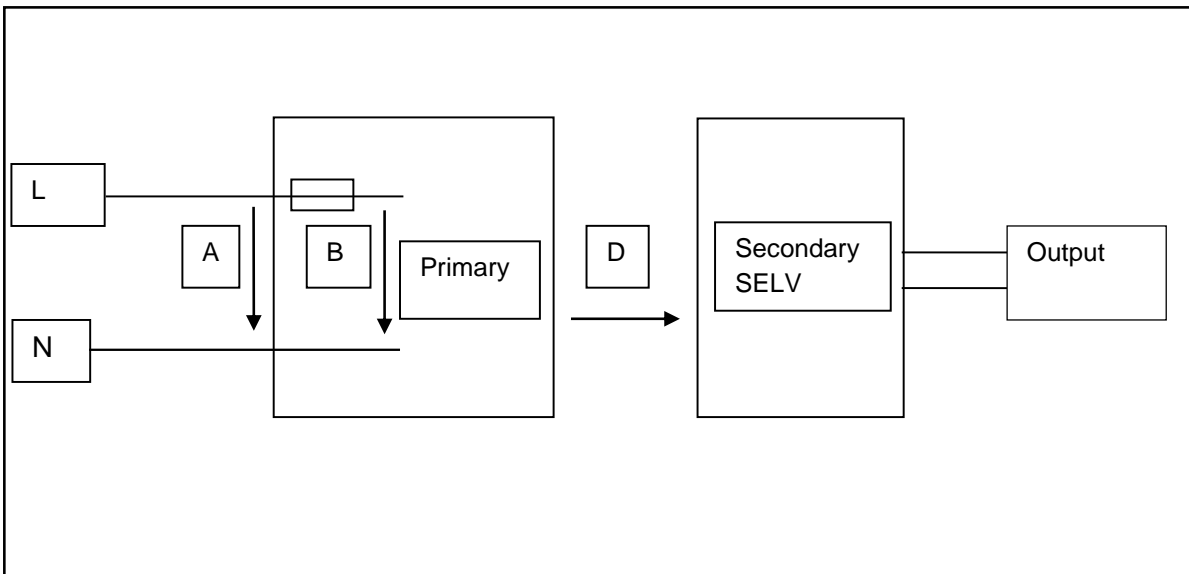
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A
Supplementary Information: “B” – Basic Safeguard; “S” – Supplementary Safeguard; “R” – Reinforced Safeguard				

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

☒ ES ☒ PS ☒ MS ☒ TS ☐ RS



Description of the circuits and accesible parts:

AC input: ES3 (steady state), PS3

Primary circuit: ES3, PS3

Output of the unit: ES1, PS1

Complete enclosure: TS1

Mass, edges/corners: MS1

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies		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 not certified are used in accordance with their ratings and they comply with applicable parts of IEC 62368-1 and the relevant component standard.</p> <p>Components, for which no relevant IEC-standard exists, or used in circuits not in accordance with their specified ratings, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 62368-1.</p> <p>(See appended table 4.1.2)</p>	P
4.1.3	Equipment design and construction	Equipment is designed in such a manner that under normal operating condition, abnormal operating condition and single fault condition does not cause any injury or in case of fire, property damage.	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)	(See G.15)	N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness		P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Clause T.4, T.5)	P
4.4.3.3	Drop tests	(See Annex T.7)	P
4.4.3.4	Impact tests	(See Annex T.6)	P
4.4.3.5	Internal accessible safeguard tests	No internal safeguard accessible to ordinary person.	N/A
4.4.3.6	Glass impact tests	No safeguard made of glass.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.4.3.7	Glass fixation tests	No such part.	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)	P
4.4.3.10	Accessibility, glass, safeguard effectiveness	No class 3 energy source (except PS3) accessible to ordinary or instructed person after robustness tests.	P
4.4.4	Displacement of a safeguard by an insulating liquid	No insulating liquid.	N/A
4.4.5	Safety interlocks	(See Annex K)	N/A
4.5	Explosion		N/A
4.5.1	General	No risk of explosion.	N/A
4.5.2	No explosion during normal/abnormal operating condition		N/A
	No harm by explosion during single fault conditions		N/A
4.6	Fixing of conductors		P
	Fix conductors not to defeat a safeguard		P
	Compliance is checked by test	(See Clause T.2)	P
4.7	Equipment for direct insertion into mains socket-outlets		P
4.7.2	Mains plug part complies with relevant standard .. :	Dimension of the injection part of the European plug is in accordance with the requirement of EN 50075 standard. Other types of plugs should be evaluated during national approval.	P
4.7.3	Torque (Nm)	<0,2Nm	P
4.8	Equipment containing coin/button cell batteries		N/A
4.8.1	General	No such component inside the unit.	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		P
		(See Annex P) No openings.	P
4.10	Component requirements		P
4.10.1	Disconnect Device	(See Annex L)	P
4.10.2	Switches and relays		N/A

5	ELECTRICALLY-CAUSED INJURY		P
5.2	Classification and limits of electrical energy sources		P
5.2.2	ES1, ES2 and ES3 limits		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.....	(See appended table 5.2)	N/A
5.2.2.5	Limits for repetitive pulses	Repetitive pulses only result of fault or abnormal condition (hiccup mode). (See appended table 5.2)	P
5.2.2.6	Ringing signals	No ringing signals	N/A
5.2.2.7	Audio signals	No 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	No bare conductors at ES3.	P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits	Output is ES1 and is derived from secondary side of transformer.	P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
	Accessibility to outdoor equipment bare parts	Not intended for outdoor use.	N/A
5.3.2.2	Contact requirements		P
	Test with test probe from Annex V		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.2.2 a)	Air gap – electric strength test potential (V)	No openings. ES3 or ES2 circuit not accessible. No ES3 basic safeguard accessible.	P
5.3.2.2 b)	Air gap – distance (mm)		N/A
5.3.2.3	Compliance		P
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	No hygroscopic insulation materials used. See list of critical components.	P
5.4.1.3	Material is non-hygroscopic	Verified by verification of the material and additional humidity test. See clause 5.4.8.	P
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table) (See appended table 5.4.1.4)	P
5.4.1.5	Pollution degrees.....	PD2	P
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 transformer used.	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such circuits.	N/A
5.4.1.8	Determination of working voltage	(See appended table 5.4.1.8)	P
5.4.1.9	Insulating surfaces	An accessible surface was considered conductive for determination of clearances, creepage distances and distance through insulation.	P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		P
5.4.1.10.2	Vicat test.....	Not used.	N/A
5.4.1.10.3	Ball pressure test.....	Phenolic/approved materials used.	N/A
5.4.2	Clearances		P
5.4.2.1	General requirements		P
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance		P
	Temporary overvoltage	2000 V	—
5.4.2.3	Procedure 2 for determining clearance		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.3.2.2	a.c. mains transient voltage	2500 V	—
5.4.2.3.2.3	d.c. mains transient voltage	N/A.	—
5.4.2.3.2.4	External circuit transient voltage.....	N/A	—
5.4.2.3.2.5	Transient voltage determined by measurement	Measurement not relevant.	—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	This method no applied.	N/A
5.4.2.5	Multiplication factors for clearances and test voltages:	Maximum specified altitude <3000m. 1,14 multiplication factor used for clearances.	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.....	Material group IIIb considered.	—
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		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	No such component.	P
5.4.4.4	Solid insulation in semiconductor devices	Approved optical insulators are used.	P
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material	Transformer provided with triple insulated wire for secondary winding. Tape used for mechanical protection only.	N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs)		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
	Number of layers (pcs)		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material	(See appended table 5.4.9)	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components	Transformer provided with triple insulated wire for secondary winding.	N/A
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P , K_R , d , V_{PW} (V)	Separately approved triple insulated wire used.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Alternative by electric strength test, tested voltage (V), K_R	See above.	N/A
5.4.5	Antenna terminal insulation	No such terminal.	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		N/A
5.4.7	Tests for semiconductor components and for cemented joints	No such component. Approved optical insulators used.	N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%), temperature ($^{\circ}C$), duration (h).....	48h, (93 \pm 3)%, (20-30) $^{\circ}C$	—
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	(See appended table 5.4.9) Method 1 (transient voltages) is the worst case	P
5.4.9.2	Test procedure for routine test	Routine test on transformer checked.	P
5.4.10	Safeguards against transient voltages from external circuits	No such 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	(See appended table 5.4.9)	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}		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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
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	Capacitors and RC units that serve as a safeguard comply with IEC 60384-14 and clause G.11 of this standard.	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	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See sub-clause 5.4 or Clause G.12) Approved optocoupler used.	P
5.5.5	Relays		N/A
5.5.6	Resistors	No resistors used as a safeguard.	N/A
5.5.7	SPDs	No SPD's.	N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable.....	No such external circuit.	N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA)		—
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors	Class II product. This clause is N/A.	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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
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 :	No earthed parts.	N/A
5.7.6	Requirements when touch current exceeds ES2 limits		N/A
	Protective conductor current (mA) :	Measured touch current does not exceed ES2 limits in 5.2.2.2	N/A
	Instructional Safeguard..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.7	Prospective touch voltage and touch current associated with 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	No external circuits.	N/A
	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..... :	No battery backed up supply	N/A
	Air gap (mm)..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of PS and PIS		P
6.2.2	Power source circuit classifications	All circuits inside the equipment are presumed PS3, arcing and/or resistive PIS. Secondary output is classified PS2.	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS	All circuits inside the equipment are presumed PS3, arcing and/or resistive PIS. Secondary output is classified PS2.	P
6.2.3.2	Resistive PIS	All circuits inside the equipment are presumed PS3, arcing and/or resistive PIS. Secondary output is classified PS2.	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 table B.1.5 and B.3)	P
	Combustible materials outside fire enclosure	No parts outside the enclosure except output cord. Plastic housing rated V-0. Output is considered as PS2.	P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method	Control fire spread. Selection and application of supplementary safeguards for components, wiring, materials and constructional measures that reduce the spread of fire. In addition, fire enclosure is provided.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits	No PS1 circuit.	N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	This method not applied.	N/A
6.4.3.1	Supplementary safeguards		N/A
6.4.3.2	Single Fault Conditions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits	No such circuit.	N/A
6.4.5	Control of fire spread in PS2 circuits	No such circuits in the unit. All circuits are considered PS3.	N/A
6.4.5.2	Supplementary safeguards		N/A
6.4.6	Control of fire spread in PS3 circuits	In addition to the compliance with 6.4.5, a fire enclosure that complies with 6.4.8 is provided with the equipment.	P
6.4.7	Separation of combustible materials from a PIS	Separation from PIS to fire enclosure comply with 6.4.8.4.	P
6.4.7.2	Separation by distance	All components and combustible materials other than small parts are either rated at least V-1 or mounted on material with rating minimum V-0.	P
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	Equipment enclosure is evaluated for fire enclosure.	P
6.4.8.2	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier		P
6.4.8.2.2	Requirements for a fire enclosure	Equipment fire enclosure is made of materials rated V-0 minimum.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings	No openings in a fire enclosure or fire barrier.	P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties		N/A
	Openings dimensions (mm)..... :	No openings.	N/A
6.4.8.3.4	Bottom openings and properties		N/A
	Openings dimensions (mm)..... :	No bottom openings.	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

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)..... :	No door or cover in fire enclosure that can be open by ordinary person.	N/A
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 min. V-0 materials.	P
6.4.9	Flammability of insulating liquid..... :	No insulating liquid.	N/A
6.5	Internal and external wiring		P
6.5.1	General requirements		P
6.5.2	Requirements for interconnection to building wiring :	Min. AWG18 (VW-1). Refer to the List of critical components.	P
6.5.3	Internal wiring size (mm ²) for socket-outlets..... :	No interconnection to building wiring.	N/A
6.6	Safeguards against fire due to the connection to additional equipment		P
		The delivered power from USB output connector comply to PS1 limits or comply to clause Q.1.	P

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A
7.2	Reduction of exposure to hazardous substances		N/A
		No hazardous substances.	N/A
7.3	Ozone exposure		N/A
		Unit does not produce ozone.	N/A
7.4	Use of personal safeguards or personal protective equipment (PPE)		N/A
	Personal safeguards and instructions :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010)..... :		—
7.6	Batteries and their protection circuits		N/A
		(See Annex M)	N/A

8	MECHANICALLY-CAUSED INJURY		P
8.2	Mechanical energy source classifications		P
		Sharp edges and corners, and equipment mass are both classified as MS1. There are no moving parts inside the unit neither equipment is intended for wall/ceiling mounting.	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3	Safeguards against mechanical energy sources		N/A
		No safeguard is required to be interposed between MS1 and an ordinary person.	N/A
8.4	Safeguards against parts with sharp edges and corners		N/A
		No parts with sharp edges or corners.	N/A
8.4.1	Safeguards		N/A
	Instructional Safeguard.....:		N/A
8.4.2	Sharp edges or corners		N/A
8.5	Safeguards against moving parts		N/A
		No moving parts.	N/A
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts		N/A
	MS2 or MS3 part required to be accessible for the function of the equipment	No such part.	N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard.....:	No instructional safeguard considered required. Unintentional contact with moving part is unlikely.	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

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Clause	Requirement + Test	Result - Remark	Verdict
	- Cable assembly		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media	The EUT is not a media destruction device.	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
8.5.5	High pressure lamps	No high pressure lamps in the unit.	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	Equipment mass is <7kg and classified MS1. No stability requirements are applicable.	N/A
	Instructional safeguard.....	The EUT is not a TV set.	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
		The EUT is not intended for wall or ceiling mounting.	N/A
8.7.1	Mount means type		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

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Clause	Requirement + Test	Result - Remark	Verdict
8.8	Handles strength		N/A
8.8.1	General	No handles.	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
		No wheels or casters.	N/A
8.9.2	Pull test		N/A
8.10	Carts, stands and similar carriers		N/A
		No cart, stand or similar carriers.	N/A
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
		The EUT is not intended for rack mounting. No slide-rails provided.	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
		No telescoping or rod antennas.	N/A
	Button/ball diameter (mm)		—

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Clause	Requirement + Test	Result - Remark	Verdict

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications		P
		All accessible surfaces are classified as TS1.	P
9.3	Touch temperature limits		P
9.3.1	Touch temperatures of accessible parts	(See appended table)	P
9.3.2	Test method and compliance		P
9.4	Safeguards against thermal energy sources		N/A
		No safeguard needs to be interposed between TS1 and ordinary person.	N/A
9.5	Requirements for safeguards		N/A
9.5.1	Equipment safeguard	All temperatures are limited to TS1. See enclosed table.	N/A
9.5.2	Instructional safeguard.....	No part at TS2 or TS3.	N/A
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		N/A
10.2	Radiation energy source classification		N/A
		No radiation energy sources.	N/A
10.2.1	General classification		N/A
	Lasers		—
	Lamps and lamp systems		—
	Image projectors		—
	X-Ray		—
	Personal music player		—
10.3	Safeguards against laser radiation		N/A
		No laser source inside the unit.	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)		

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Clause	Requirement + Test	Result - Remark	Verdict
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
		No 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
		The EUT is not a personal music player.	N/A
10.6.1	General		N/A
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 \geq 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

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Clause	Requirement + Test	Result - Remark	Verdict
	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

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Clause	Requirement + Test	Result - Remark	Verdict

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	(See Annex E)	N/A
B.2.3	Supply voltage and tolerances	+10% / -10%	P
B.2.5	Input test	(See appended table B.2.5)	P
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 ventilation openings.	N/A
	Instructional safeguard		N/A
B.3.3	DC mains polarity test	Unit not intended for connection 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	Output overload test performed. See table B.3.	P
B.3.6	Reverse battery polarity	No replaceable battery.	N/A
B.3.7	Audio amplifier abnormal operating conditions		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	(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 temperature controlling device.	N/A
B.4.3	Blocked motor test	No motor.	N/A
B.4.4	Functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation	Clearances for functional insulation that are not evaluated for basic insulation or relevant electric strength test are short-circuited in turn. See appended table B.4.	P

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.4.2	Short circuit of creepage distances for functional insulation	Creepage distances for functional insulation that are not evaluated for basic insulation or relevant electric strength test are short-circuited in turn. See appended table B.4.	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards.	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		N/A
B.4.8	Compliance during and after single fault conditions :	(See appended table B.4)	P
B.4.9	Battery charging and discharging under single fault conditions	No batteries provided.	N/A
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
	Language	English	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	On the housing.	P
F.3.2	Equipment identification markings	Refer to labels.	P
F.3.2.1	Manufacturer identification	Refer to labels.	P
F.3.2.2	Model identification	Refer to labels.	P
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of the supply voltage	~ symbol used to identify AC input	P
F.3.3.4	Rated voltage.....	Refer to labels.	P
F.3.3.5	Rated frequency	Refer to labels.	P
F.3.3.6	Rated current or rated power.....	Refer to labels.	P
F.3.3.7	Equipment with multiple supply connections	No multiple supply connections.	N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings	No such device on the equipment.	N/A
F.3.5.2	Switch position identification marking.....	No switch.	N/A
F.3.5.3	Replacement fuse identification and rating markings	No replaceable fuse.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructional safeguards for neutral fuse	No neutral fuse.	N/A
F.3.5.4	Replacement battery identification marking	No battery.	N/A
F.3.5.5	Neutral conductor terminal		N/A
F.3.5.6	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I equipment	Class II device.	N/A
F.3.6.1.1	Protective earthing conductor terminal	Class II device.	N/A
F.3.6.1.2	Protective bonding conductor terminals	Class II device.	N/A
F.3.6.2	Equipment class marking	Correct symbol used (for Class II model).	P
F.3.6.3	Functional earthing terminal marking	No FE terminal.	N/A
F.3.7	Equipment IP rating marking	IPX0	N/A
F.3.8	External power supply output marking		P
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings	Marking remain legible after rubbing test with a piece of cloth soaked with water and n-hexane. Marking is printed to enclosure.	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

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Clause	Requirement + Test	Result - Remark	Verdict
	m) Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		N/A
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General	No switch provided.	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		N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		P
G.3.5.1	Non-resettable devices suitably rated and marking provided	FR1	P
G.3.5.2	Single faults conditions	(See appended table B.4)	P
G.4	Connectors		P
G.4.1	Spacings	Approved appliance inlet used for input. Special connector used for output.	P
G.4.2	Mains connector configuration.....	See above.	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	Secondary connector with special plug. Insertion into mains is unlikely.	N/A
G.5	Wound components		P
G.5.1	Wire insulation in wound components	Approved triple insulated wire used for secondary winding of T1. (See Annex J)	P
G.5.1.2	Protection against mechanical stress	Mechanical separation provided between the windings.	P
G.5.2	Endurance test	Not required, since mechanical separation/protection is provided.	P
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..... :	Transformer T1 complies with G.5.3.2 and G.5.3.3	P
	Position	T1 (primary to secondary)	P
	Method of protection	Primary current limitation.	P
G.5.3.2	Insulation		P
	Protection from displacement of windings	Tape, triple insulated wire and bobbin.	—
G.5.3.3	Transformer overload tests	(See appended table B.3)	P
G.5.3.3.1	Test conditions		P
G.5.3.3.2	Winding temperatures		P
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW	No use of FIW.	N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter		—
G.5.3.4.2	Transformers with basic insulation only		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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		P
G.6.1	General	Approved triple insulated wire is used inside transformers (complies with Annex J). All other enamelled wires were only considered for functional insulation. See list of critical components.	P
G.6.2	Enamelled winding wire insulation	Only considered as functional insulation.	N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements	Power supply cord is not part of investigation	N/A
	Type..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.2	Cross sectional area (mm ² or AWG)		N/A
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, <i>D</i> (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		N/A
G.8.1	General requirements	No varistors used.	N/A
G.8.2	Safeguards against fire		N/A
G.8.2.1	General		N/A
G.8.2.2	Varistor overload test		N/A
G.8.2.3	Temporary overvoltage test		N/A
G.9	Integrated circuit (IC) current limiters		N/A
G.9.1	Requirements		N/A
	IC limiter output current (max. 5A).....	No IC current limiters.	—
	Manufacturers' defined drift		—
G.9.2	Test Program		N/A
G.9.3	Compliance		N/A
G.10	Resistors		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.10.1	General	No resistor as a safeguard in the meaning of this clause.	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		P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors	Certified capacitors used. Refer to List of critical components.	P
G.12	Optocouplers		P
	Optocouplers comply with IEC 60747-5-5 with specifics	Approved optocouplers used. Refer to List of critical components.	P
	Type test voltage $V_{ini,a}$:	Considered.	—
	Routine test voltage, $V_{ini,b}$:	Considered.	—
G.13	Printed boards		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board is compliant with the minimum requirements of clearances (5.4.2) and creepage distances (5.4.3).	N/A
G.13.3	Coated printed boards	No special coating used on PCB.	N/A
G.13.4	Insulation between conductors on the same inner surface	No inner layers.	N/A
G.13.5	Insulation between conductors on different surfaces	No overlapping of PCB traces where basic, double or reinforced insulation is affected.	N/A
	Distance through insulation..... :		N/A
	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

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Clause	Requirement + Test	Result - Remark	Verdict
G.13.6.2	Test method and compliance		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements	No special coating.	N/A
G.15	Pressurized liquid filled components		N/A
G.15.1	Requirements	No LFC.	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 such component.	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
		No ringing generator.	N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
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):		—

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Clause	Requirement + Test	Result - Remark	Verdict
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		P
J.1	General		P
	Winding wire insulation :	Approved TIW used. See list of critical components. No additional testing considered required.	—
	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	(See separate test report)	—
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
	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 :		N/A
K.7.2	Overload test, Current (A) :		N/A
K.7.3	Endurance test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
K.7.4	Electric strength test		N/A
L	DISCONNECT DEVICES		N/A
L.1	General requirements	Appliance coupler considered as a disconnect device.	N/A
L.2	Permanently connected equipment	Not permanently connected equipment.	N/A
L.3	Parts that remain energized	No parts remain energized after disconnection.	N/A
L.4	Single-phase equipment	The disconnect device disconnects both poles simultaneously.	N/A
L.5	Three-phase equipment	Single phase unit.	N/A
L.6	Switches as disconnect devices	No switches.	N/A
L.7	Plugs as disconnect devices	The appliance coupler is regarded as disconnect device, no warning is required.	N/A
L.8	Multiple power sources	One power source only.	N/A
	Instructional safeguard		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements		N/A
			N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Batteries and their cells comply with relevant IEC standards		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
	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

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Clause	Requirement + Test	Result - Remark	Verdict
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance..... :	(See appended table M.4.2)	N/A
M.4.3	Fire enclosure..... :		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery	1) The EUT is not a direct plug-in, hand-held or transportable equipment.	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
	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

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Clause	Requirement + Test	Result - Remark	Verdict
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 :	Pollution degree considered.	—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Value of X (mm)..... :	1mm for PD2	—
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECTS		P
P.1	General	No openings.	P
P.2	Safeguards against entry or consequences of entry of a foreign object		N/A
P.2.1	General		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
	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 internal liquids.	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

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Clause	Requirement + Test	Result - Remark	Verdict
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	Output complies with LPS.	P
Q.1.1	Requirements		P
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output		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 Q.1)	P
	Current rating of overcurrent protective device (A)		N/A
Q.2	Test for external circuits – paired conductor cable		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
	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	Certified materials used. No additional testing considered required. See list of critical components.	—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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 enclosures and fire barrier materials of equipment where the steady state power exceeding 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
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	(See appended table T.3)	N/A
T.4	Steady force test, 100 N	(See appended table T.4)	N/A
T.5	Steady force test, 250 N	(See appended table T.5)	P
T.6	Enclosure impact test	(See appended table T.6)	P
	Fall test		P
	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	(See appended table T.9)	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

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Clause	Requirement + Test	Result - Remark	Verdict
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		P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes		P
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
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	Not used.	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

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Clause	Requirement + Test	Result - Remark	Verdict
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means		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
Y.6	Mechanical strength of enclosures		N/A
Y.6.1	General		N/A
Y.6.2	Impact test :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.2		TABLE: Classification of electrical energy sources GT-41076-WWVV-X.X series					P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾	
100-240 V, 50-60 Hz	Output connector (+ to -) (prospective touch voltage)	Normal	24,0 Vrms	/	SS	DC	ES1 (*)
		Abnormal	/	/	/	/	
		Single fault –SC D3A/D3B	0 V	0 A	SS	/	
264 V, 60 Hz	Output connector (+ to PE / – to PE) Fig 4 used (touch current)	Normal	/	0,338 Apk max.	SS	60 Hz	ES1 (*)
		Abnormal	/	/	/	/	
		Single fault – SC/OC	/	/	/	/	
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. See also appended table 5.2.2 in Enclosure No. 5 for measurements of voltage limiting components in ES circuits. a.c. mains considered ES3. (*) Circuits complied with with ES1 following Simulated Abnormal Operating Conditions/ Test Simulated Single Fault Condition. See Tables B.3 and B.4							

5.4.1.8		TABLE: Working voltage measurement				P
Location		RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	
Model: GT-41076-0603 (Transformer T1)						
Pin 1 to Pin 6		192	328			
Pin 1 to Pin 10		194	337			
Pin 2 to pin 6		218	354			
Pin 2 to Pin 10		219	359			
Pin 3 to pin 6		257	497		Max. peak and RMS voltage	
Pin 3 to pin 10		250	486			
Pin 4 to Pin 6		224	427			
Pin 4 to Pin 10		215	408			

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Clause	Requirement + Test	Result - Remark	Verdict

Model: GT-41076-0603 (Optocoupler PC1)				
Pin 1 to Pin 3	209	341		
Pin 1 to Pin 4	213	354		
Pin 2 to Pin 3	196	317		
Pin 2 to Pin 4	196	319		
Model: GT-41076-0624 (Transformer T1)				
Pin 1 to Pin 6	222	369		
Pin 1 to Pin10	204	483		
Pin 2 to Pin 6	194	334		
Pin 2 to Pin 10	203	356		
Pin 3 to Pin 6	268	506		Max. peak and RMS voltage
Pin 3 to Pin 10	247	461		
Pin 4 to Pin 6	204	410		
Pin 4 to Pin 10	201	343		
Model: Model: GT-41076-0624 (Optocoupler PC1)				
Pin 1 to Pin 3	216	361		
Pin 1 to Pin 4	212	342		
Pin 2 to Pin 3	213	355		
Pin 2 to Pin 4	205	338		
Supplementary information:				
Input voltage: 240 Vac. Test Condition was: The output was at rated load.				
The following terminals were connected to earth: Minus of the output, Neutral.				

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			—

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Clause	Requirement + Test	Result - Remark	Verdict

Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)
Plug holder / enclosure	Sabic Inovative	3,0	125	1,5
Transformer Bobbin	Young-Shang	3,0	125	0,8
Supplementary information:				
The impression diameter caused by the ball did not exceed 2,0mm.				

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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)
Functional / basic and supplementary insulation								
Primary to Primary before fuse	340	240	--	1,8*	2,5	--	2,4	2,5
Primary to Primary after fuse	340	240	--	Method B.4.4 applied.				
Reinforced / double insulation								
Primary to Secondary (Reinforced) transformer	506	268	--	3,5*	*	--	5,4	*
Primary to Secondary on PCB	506	268	--	3,5*	5,7	--	5,4	5,7
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>The core of T1 considered as primary, the insulation between secondary to core is reinforced insulation.</p> <p>*Triple insulated wire used in T1 for secondary winding.</p> <p>Required clearances are adopted for altitude of 3000m (correction factor 1,14).</p>								
Block diagram								
<p>The diagram shows a rectangular box labeled 'Resistor or fuse' connected between two horizontal lines labeled 'L' and 'N'. To the right of this box, there are two vertical lines representing a barrier, and two horizontal lines labeled 'SELV' representing secondary winding terminals.</p>								

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Clause	Requirement + Test	Result - Remark	Verdict

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)	
Insulation foil between PCB and enclosure	506	RI	0,4	See Table 4.2.1	
Supplementary information:					

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz						N/A
Insulation material	E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)	
Supplementary information:							
Separately approved triple insulated wire used.							

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:	Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No	
Functional:				
--	--	--	--	--
Basic/supplementary:	--	--	--	--
--	--	--	--	--
Reinforced:	--	--	--	--
From primary (L/N) to secondary (output)	DC	4000	No	
From primary (L/N) to enclosure with metal foil	DC	4000	No	

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Clause	Requirement + Test	Result - Remark	Verdict
	From T1 primary to T1 secondary	DC 4000	No
	T1 core to T1 secondary	DC 4000	No
	Mylar sheet between enclosure and PCB	DC 4000	No
Supplementary information:			
By applying a d.c. voltage in one polarity and then repeat it in reverse polarity.			
All sources of T1, insulation tape, enclosure and bobbin listed in table 4.2.1 have been considered.			

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Clause	Requirement + Test	Result - Remark	Verdict

5.5.2.2	TABLE: Stored discharge on capacitors					N/A
Location	Supply voltage (V)	Operating and fault condition ¹⁾	Switch position	Measured voltage (Vpk)	ES Class	
Supplementary information:						
X-capacitors installed for testing:						
<input type="checkbox"/> bleeding resistor rating:						
<input type="checkbox"/> ICX:						
1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit						
*No capacitors between Phase and neutral on primary side						

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)	
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						
See appended table 5.2.2 in Enclosure No. 5.						

5.7.5	TABLE: Earthed accessible conductive part				N/A
Supply voltage (V)					—
Phase(s)	[] Single Phase; [] Three Phase: [] Delta [] Wye				
Power Distribution System	[] TN [] TT [] IT				
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment		

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Clause	Requirement + Test	Result - Remark	Verdict

<p>Supplementary information:</p> <p>Faults:</p> <p>No. 1: PE of not reliable earthed equipment disconnected. Normal and reverse polarity.</p> <p>No. 2: Neutral of single phase equipment open. Normal and reverse polarity.</p> <p>No. 3: EUT use on IT systems shall be tested with each phase conductor faulted to earth (switch g)</p> <p>No. 4: Three phase equipment should be tested with each phase conductor open, one at the time.</p> <p>No. 5: Single phase equipment use on IT system or on 3P delta-system shall be tested with a 3P power system, with each phase faulted to PE, one at the time in combination with normal and reverse polarity and separately with each phase conductor open one at the time and in combination with normal and reverse polarity.</p> <p>No. 6: Three phase equipment for use on centre-earthed delta supply systems shall be tested on a delta supply system with each delta-leg centre-earthed, one at the time.</p> <p>No. 8: Accessible conductive parts which are only incidentally electrically connected to other parts shall be tested for both when connected electrically to other parts and when not. Examples of such parts: doors and assemblies attached by metal hinges, adhesively-bonded labels which have an accessible conductive part etc.</p> <p>Notes:</p> <p>[1] Supply voltage is the anticipated maximum Touch Voltage</p> <p>[2] Earthed neutral conductor [Voltage differences less than 1% or more]</p> <p>[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3</p> <p>[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.</p> <p>[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.</p> <p>Measured touch current to earthed accessible conductive part does not exceed ES2 limits.</p>

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					N/A
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power ¹⁾	Time (S)	PS class

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Clause	Requirement + Test	Result - Remark	Verdict

				(W)		
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						
1) Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.						

6.2.3.1	TABLE: Determination of Arcing PIS				N/A
Location	Open circuit voltage after 3 s (V_{pk})	Measured r.m.s current (A)	Calculated value ($V_p \times I_{rms}$)	Arcing PIS? Yes / No	
Supplementary information:					
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.					

6.2.3.2	TABLE: Determination of resistive PIS			N/A
Location	Operating and fault condition	Dissipate power (W)		Arcing PIS? Yes / No
Supplementary information:				
Abbreviation: SC= short circuit; OC= open circuit				

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:					

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Clause	Requirement + Test	Result - Remark	Verdict

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:								

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements (model → output 3 Vdc)							P
Supply voltage (V)..... :		90	264	90	264	—		
Ambient temperature during test T_{amb} (°C) :		30	30	30	30	—		
Maximum measured temperature T of part/at:		T (°C)					Allowed T_{max} (°C)	
Input voltage and position		Horizontal orientation	Horizontal orientation	Vertical orientation	Vertical orientation	--		
Model: GT-41076-0603								
Transformer T1 coil		102,5	92,0	102,4	92,1	110		
Transformer T1 core		100,9	90,1	99,9	90,3	110		
Inductor L1		94,1	76,1	93,6	76,3	105		
Inductor L2		84,3	80,8	88,1	83,0	105		
Capacitor C1		76,5	64,1	76,4	63,2	85		
PCB (near BD1)		91,4	75,0	89,7	75,3	105		
PCB (near D3B)		91,1	86,9	97,8	90,4	105		
Internal enclosure near T1		72,4	66,0	73,2	65,4	105		
Outer enclosure		63,1	57,2	62,0	57,0	85		
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:								

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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 (model → output 24 Vdc)					P	
Supply voltage (V)..... :	90	264	90	264	—		
Ambient temperature during test T_{amb} (°C) :	30	30	30	30	—		
Maximum measured temperature T of part/at:	T (°C)				Allowed T_{max} (°C)		
Input voltage and position	Horizontal orientation	Horizontal orientation	Vertical orientation	Vertical orientation	--		
Model: GT-41076-0624							
Transformer T1 coil	82,2	78,5	85,0	74,2	110		
Transformer T1 core	82,1	78,9	83,8	74,0	110		
Inductor L1	73,9	64,8	75,9	59,9	105		
Inductor L2	57,4	58,1	60,6	56,1	105		
Capacitor C1	60,8	55,8	61,9	50,8	85		
PCB (near BD1)	76,0	67,6	77,1	62,3	105		
PCB (near D3B)	72,3	64,6	72,2	58,3	105		
Internal enclosure near T1	62,3	61,4	64,7	57,2	105		
Outer enclosure	55,9	55,9	56,4	52,0	85		
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:							

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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 Accessible parts						P
Supply voltage (V)..... :	90	264	90	264	—		
Ambient temperature during test T_{amb} (°C) :	25	25	25	25	—		
Maximum measured temperature T of part/at:	T (°C)					Allowed T_{max} (°C)	
Input voltage and position	Horizontal orientation	Horizontal orientation	Vertical orientation	Vertical orientation	--		
Model: GT-41076-0603							
Outer enclosure	57,0	52,1	57,2	52,2	60		
Model: GT-41076-0624							
Outer enclosure	50,1	50,2	51,6	48,0	60		
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:							
See above heating tests. Temperatures on accessible parts were measured on ambient 25°C.							

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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-41076-0603									
90	50	0,162	-	9,1	-	FR1	1,0	Max. normal output load 3 Vdc, 2,0 A	
90	60	0,163	-	9,0	-	FR1	1,0		
100	50	0,146	0,3	9,0	-	FR1	1,0		
100	60	0,149	0,3	9,0	-	FR1	1,0		
240	50	0,077	0,3	9,1	-	FR1	1,0		
240	60	0,708	0,3	8,9	-	FR1	1,0		
254	50	0,074	-	9,0	-	FR1	1,0		
254	60	0,074	-	9,0	-	FR1	1,0		
264	50	0,073	-	9,1	-	FR1	1,0		
264	60	0,073	-	8,9	-	FR1	1,0		
Model: GT-41076-0624									
90	50	0,131	-	7,3	-	FR1	1,0	Max. normal output load 24 Vdc, 0,25 A	
90	60	0,132	-	7,2	-	FR1	1,0		
100	50	0,122	0,3	7,2	-	FR1	1,0		
100	60	0,123	0,3	7,1	-	FR1	1,0		
240	50	0,066	0,3	6,5	-	FR1	1,0		
240	60	0,066	0,3	6,4	-	FR1	1,0		
254	50	0,063	-	6,4	-	FR1	1,0		
254	60	0,063	-	6,5	-	FR1	1,0		
264	50	0,061	-	6,3	-	FR1	1,0		
264	60	0,061	-	6,3	-	FR1	1,0		
Model: GT-41076-0605									
90	50	0,158	-	8,8	-	FR1	1,0	Max. normal output: 1,2 A; 5 Vdc	
90	60	0,16	-	8,7	-	FR1	1,0		
100	50	0,145	0,3	8,7	-	FR1	1,0		
100	60	0,145	0,3	8,5	-	FR1	1,0		
240	50	0,08	0,3	8,4	-	FR1	1,0		
240	60	0,08	0,3	8,2	-	FR1	1,0		
254	50	0,078	-	8,2	-	FR1	1,0		
254	60	0,078	-	8,4	-	FR1	1,0		
264	50	0,075	-	8,5	-	FR1	1,0		

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Clause	Requirement + Test	Result - Remark	Verdict

264	60	0,075	-	8,2	-	FR1	1,0	
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured.								

B.3, B.4 TABLE: Abnormal operating and fault condition tests							P
Ambient temperature T_{amb} (°C)..... :					25,0°C (if not specified otherwise)		—
Power source for EUT: Manufacturer, model/type, output rating . :					-		—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation	
Output	Short	264Vac	>10min	FR1	—	Unit switched off. No hazard, no fire.	
Output	Overload	264Vac	1h 30min	FR1	0,075	Conditions: 23,97 Vdc; 0,64A. Temperature of transformer winding was 101,3°C at 25,2°C.	
ES (SELV) reliability testing							
Output Diode D3A/D3B	Short	264Vac	>10min	F1	0,015	Unit switched off. No hazard, no fire.	
Regulation PC1 (1) (GT-41076-0603)	Open	264Vac	2h	F1	0,11	Normal operation, output voltage rise to 6 Vdc max. Temperature of T1 winding was 157,2°C at 24,6°C ambient.	
Regulation PC1 (4) (GT-41076-0603)	Open	264Vac	>2h	F1	0,13	Normal operation, output voltage rise to 6 Vdc max. Temperature of T1 winding was 136,2°C at 25,2°C ambient.	
Regulation PC1 (1) (GT-41076-0624)	Open	264Vac	>2h	F1	0,11	Normal operation, output voltage rise to 43 Vdc max. Temperature of T1 winding was 142,3°C at 25,3°C ambient.	
Regulation PC1 (4) (GT-41076-0624)	Open	264Vac	>2h	F1	0,13	Normal operation, output voltage rise to 42 Vdc max. Temperature of T1 winding was 129,2°C at 25,5°C ambient.	
U1 pin 1-3	Short	264Vac	>10min	F1	0,02	Unit switched off. No hazard, no fire.	

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U1 pin 3-4	Short	264Vac	>10min	F1	0,02	Unit switched off. No hazard, no fire.
Functional insulation						
BD 1 AC to +	Short	264Vac	>10min	FR1	0,31 to 0	FR1 opened immediately. No hazard, no fire.
U1 pin 8-2	Short	264Vac	>10min	FR1	0,31 to 0	FR1 opened immediately, no hazard, no fire.
U1 pin 4-8	Short	264Vac	>10min	FR1	U1 pin 4-8	FR1 opened immediately. No hazard, no fire.
C1	Short	264Vac	>10min	FR1	C1	FR1 opened immediately. No hazard, no fire.
T1 pin 2-4	Short	264Vac	>10min	FR1	0,016	Unit switched off, no hazard, no fire.
D2	Short	264Vac	>10min	FR1	0,03	Unit switched off, no hazard, no fire.
PC1 pin 1-2	Short	264Vac	>10min	FR1	0,03	Unit switched off immediately. ZD1 defect, no hazard, no fire.
PC1 pin 3-4	Short	264Vac	>10min	FR1	0,007	Unit switched off immediately. No hazard, no fire.

Additional component faults						
T1 pin 6-10	Short	264Vac	>10min	FR1	0,016	Unit switched off, no hazard, no fire.
T1 pin 6-10 (on 24Vdc model)	Overload	264Vac	1h 20min	FR1	0,075	Conditions: 23,97 Vdc; 0,64 A. Temperature of transformer winding was 107,6°C at 25,1°C.

Supplementary information:

After each above test, unit can pass the dielectric strength test specified in table 5.4.9.

When FR1 opened, the test was repeated with each alternative component with the same result.

Output complies with ES1 during and after all tests.

Temperature on accessible parts during tests did not exceed 60°C at 25°C ambient.

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)

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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; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal.

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:							
Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature							

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
GT-41076-0603							
Nominal load	--	3,0	5	2,0	8,0	6,0	100
Maximum Load	--	3,0	5	3,4	8,0	11,6	100

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Clause	Requirement + Test	Result - Remark					Verdict
Short PC1 pin 1-2	--	3,0	5	0	8,0	0	100
Short PC1 pin 3-4	--	3,0	5	0	8,0	0	100
Short U1 pin 8-2	--	3,0	5	1)	8,0	1)	100
Short D2	--	3,0	5	0	8,0	0	100
Short U1 pin 1-3	--	3,0	5	0,06	8,0	0,6	100
GT-41076-0624							
Nominal load	--	24,0	5	0,25	8,0	0,25	100
Maximum Load	--	24,0	5	0,66	8,0	0,66	100
Short PC1 pin 1-2	--	24,0	5	0	8,0	0	100
Short PC1 pin 3-4	--	24,0	55	0	8,0	0	100
Short U1 pin 8-2	--	24,0	5	1)	8,0	1)	100
Short D2	--	24,0	5	0	8,0	0	100
Short U1 pin 1-3	--	24,0	5	0	8,0	0	100
Supplementary Information:							
SC=Short circuit, OC=Open circuit							
1) FR1 open, U1 damaged, output shutdown.							

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Clause	Requirement + Test	Result - Remark	Verdict

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Part/Location	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation
Enclosure/Top	See Table 4.2.1.	2,0	--	250	5	¹⁾
Enclosure/ Bottom	See Table 4.2.1.	2,0	--	250	5	¹⁾
Enclosure/ Right Side	See Table 4.2.1.	2,0	--	250	5	¹⁾
Enclosure/ Left Side	See Table 4.2.1.	2,0	--	250	5	¹⁾
All components other than the parts serving as Enclosure	N/A	N/A	--	10	5	¹⁾
Supplementary information:						
¹⁾ No cracking, class 3 energy sources did not become accessible, and all safeguards remain effective. No indication of dielectric breakdown. Test performed with 250N as a worse case (table top version).						

T.6, T.9	TABLE: Impact test				P
Location/part	Material	Thickness (mm)	Height (mm)	Observation	
Enclosure/Top	See Table 4.2.1.	2,0	1300	¹⁾	
Enclosure/ Bottom	See Table 4.2.1.	2,0	1300	¹⁾	
Enclosure/ Right Side	See Table 4.2.1.	2,0	1300	¹⁾	
Enclosure/ Left Side	See Table 4.2.1.	2,0	1300	¹⁾	
Supplementary information:					
¹⁾ No cracking, class 3 energy sources did not become accessible, and all safeguards remain effective. No indication of dielectric breakdown. Performed due to table top option with appliance inlet.					

T.7	TABLE: Drop test	P
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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Location/part	Material	Thickness (mm)	Height (mm)	Observation
Enclosure/Top	See Table 4.2.1.	2,0	1000	¹⁾
Enclosure/ Bottom	See Table 4.2.1.	2,0	1000	¹⁾
Enclosure/ Right Side	See Table 4.2.1.	2,0	1000	¹⁾
Enclosure/ Left Side	See Table 4.2.1.	2,0	1000	¹⁾

Supplementary information:

1) No cracking, class 3 energy sources did not become accessible, and all safeguards remain effective. No indication of dielectric breakdown

T.8	TABLE: Stress relief test					P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Enclosure	See Table 4.2.1.	2,0	100	7	¹⁾	

Supplementary information:

1)No shrinkage, warpage, or other distortion, class 3 energy sources did not become accessible. All safeguards remain effective.

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					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Enclosure and blade holder	SABIC JAPAN L L C	945	V-0, 120 degree C, minimum 1,5 mm thick.	UL 94, UL 746C	UR E207780	
	SABIC INNOVATIVE PLASTICS B V	945			UR E45329	
Plug support	Sabic Inovative (GE Plastic)	SE1X (GG)(f1)	Rated 94V-1 at min. 0,75mm thickness; 105°C Measured thickness: 2,0mm	(QMFZ2)	UR E161723	
Plug adapter Material	Sabic Inovative (GE Plastic)	SE1X (GG)(f1)	Material: Rated 94V-1 at min. 0,75mm thickness; 105°C Measured thickness: 2,0mm 250Vac; 10A	(QMFZ2)	UR E161723	
Plug adapter (EU)	Globtek	GT-41076- AABB-C.C	100-240 V; 50/60 Hz; 0,3A Class II	EN 50075: 1990	Waltek Services (WT1207514 0-F-D-O)	
Plug adapter (AUS)	Globtek	Q-SAA	100-240 V; 50/60 Hz; 0,3A Class II	AS/NZS 3112:2017 (Annex J)	SIQ (T211- 0108/20) M1	
Plug adapter (UK)	Globtek	Q-UK	100-240 V; 50/60 Hz; 0,5A Class II	BS1363: Pt. 3 + AMD 9543 + AMD 14225 + AMD 14540 + AMD 17437 + AMD A4	Intertek (140100964S HA-001)	
Plug adapter (IEC 60320 plug)	Globtek	SE1X (GG)(f1)	100-250 V; 50/60 Hz; 3,0A	EN/IEC 60320-1: 2001	SIQ (T211- 150/08)	

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Output cord	Interchangeable	--	XT or SPT-1 or SPT-2 Min. 24 AWG; VW-1; min. 105°C One end is soldered to PWB internally, the other end terminates in one of the following: (a) stripped and tinned leads (b) polarized output connector	UL 758	UL
	Interchangeable	--	1185 or 1181 or 2464 Min. 24 AWG; VW-1; min. 80°C; 300V One end is soldered to PWB internally, the other end terminates in one of the following: (a) stripped and tinned leads (b) polarized output connector Additionally provided with optional foil/braided shield in cord	UL 758	UL
Internal view					
PCB	Interchangeable	--	94V-0 rated OD: 56 by 36 by 1mm thick	UL 94	UL approved
Resistor FR1	TZAI YUAN ENTERPRISE CO LTD	KNF	10 Ω 1W ±5%	UL 1412	UR E355632
	ANHUI CHANGSHENG ELECTRONICS CO LTD	RXF21-1W	10 Ω 1W ±5%	UL 1412	UR E306095

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Optocoupler PC1	Lite-On Technology Corporation	LTV-817	External clearance / creepage distance: $\geq 7,0$ mm DTI: $\geq 0,4$ mm Vinia= 6000 Vac Vinib= 6000 Vac 5000 Vac	EN/IEC 60950- 1:2006 VDE0884 (FPQU2)	VDE 40015248 UR E113898
	Everlight Electronics Co., Ltd.	EL817	External clearance / creepage distance: $\geq 7,6$ mm DTI: $\geq 0,4$ mm Vinia= 4000 Vac Vinib= 4000 Vac 4000 Vac	EN/IEC 62368-1 VDE0884 (FPQU2)	VDE 132249 UR E214129
	COSMO Electronics Corporation	K1010X (for UL) K1010 (for VDE)	Dti=0.6mm, Int. dcr=4.0mm Ext. dcr=5.0mm, Thermal Cycling Test, 115°C	IEC/EN 60950- 1, EN 60747-5-2, UL 1557	VDE 101347 UR E169586
	Bright Led Electronics Corp.	BPC-817 A/B/C/D/L, BPC-817 S, BPC-817 M	Dti=0,4 mm Ext. dcr=7,0 mm, thermal cycling test, 100 degree C	IEC 62368-1 IEC 60747-5- 5:2007; A1:2013 EN 60747-5- 5:2011; A1:2015 UL 1557	VDE 40007240 UR E236324
	Shenzhen Orient Components Co. Ltd.	ORPC817MX (#), ORPC817SX (#), ORPC817X (#)	Dti=0,4 mm Ext. dcr= 7,6 mm, thermal cycling test, 110 degree C	IEC 62368-1, IEC 60747-5- 5:2007; A1:2013 EN 60747-5- 5:2011; A1:2015 UL 1557	VDE 40029733 UR E323844
Bridging Cap CY1 (pri-sec)	Success Electronics Co., Ltd.	SE, SB, SF	Maximum 2200 pF, minimum 250 V, minimum 125 degree C, Y1	IEC/EN 60384- 14: 2013, UL 60384-14	VDE, UL
	TDK Corporation	CD	Maximum 2200 pF, minimum 250 V, minimum 125 degree C, Y1	IEC/EN 60384- 14:2013+A1: 2016, UL 60384-14	VDE, UL

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
	Walsin Technology Corp.	AH	Maximum 2200 pF, minimum 250 V, minimum 125 degree C, Y1	IEC/EN 60384-14:2013+A1:2016, UL 60384-14	VDE 40001804 UR E146544
	Haohua Electronic Co.,	CT 7	Maximum 2200 pF, minimum 250 V, minimum 125 degree C, Y1	IEC/EN 60384-14:2013+A1:2016, UL 60384-14	VDE 40003902 UR E233106
	Xiangtai Electronics (Shenzhen) Co., Ltd.	YO-series	Maximum 2200 pF, minimum 250 V, minimum 125 degree C, Y1	IEC/EN 60384-14:2013+A1:2016, UL 60384-14	VDE 40036880 UR E319473
	JUSUN (TAISHAN) ELECTRONICS LTD	JB-series	Maximum 2200 pF, minimum 250 V, minimum 125 degree C, Y1	IEC/EN 60384-14: 2013, UL 60384-14	ENEC-01320-M2 UR E253194
	Murata Mfg. Co., Ltd.	KX	Maximum 2200 pF, minimum 250 V, minimum 125 degree C, Y1	IEC/EN 60384-14: 2013, UL 60384-14	VDE, UL
	DONGGUAN EASY-GATHER ELECTRONIC CO LTD	DCF	Maximum 2200 pF, minimum 250 V, minimum 125 degree C, Y1	IEC/EN 60384-14:2013+A1:2016, UL 60384-14	VDE 40015758 UR E252221
Transformer (T1)	ENG Electric Co Ltd/GlobTek	XF00247, XF00248, XF00249, XF00250, XF00251	Models are only different according to output voltage (different number of winding turns); insulation is done in the same way. Open type construction OD: 17 by 15 by 19,5 mm Rating: 240 V / 24 V; 1 kHz Core: EE16, ferrite Coil: primary: copper magnet	IEC/EN 62368-1	Tested within the unit.

IEC 62368-1					
Clause	Requirement + Test		Result - Remark	Verdict	
			wire wound on bobbin; secondary: triple insulated wire The insulation primary to secondary is achieved by triple insulated wire Insulation system YS-130-1 (OBJY2); E215086; or GTX-130-TM(OBJY2), E243347; or ZT-130(OBJY2), E315275 or BOAM-01(OBJY2) E252329 or HJ130(OBJY2) E317672 or ENG130-1(E308897); Class B.		
-Bobbin	Chang Chun Plastics Co Ltd	T375J	Phenolic, V-0, 150 degree C, minimum 0.71 mm thickness.	UL94, UL746C	UL
	Sumitomo Bakelite Co Ltd	PM-9820	Phenolic, V-0, 150 degree C, minimum 0,71 mm thickness.	UL94, UL746C	UL
-Tape	3M Company	1350F-1	130 degree C	UL 510	UL
	JINGJIANG YAHUA	CT	130 degree C	UL 510	UL
-Triple Insulated wire (used in T1)	Great Leoflon Industrial Co Ltd	TRW(B) series	130 degree C 500 kHu	DIN EN 62368-1/A11 (VDE 0868-1/A11):2017-11; EN 62368-1: 2014/A11:2017 IEC 62368-1:2014 UL 2353	VDE 136581 UR E211989
Insulation foil (between PCB and enclosure)	Min. V-2 or VTM-2 rated or better; min. 105°C			EN/IEC 62368-1	Accepted

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

Supplementary information:			
1) Provided evidence ensures the agreed level of compliance. See OD-2039.			

Enclosure No. 1

National differences according to IEC 62368-1:2018 (Third Edition)

(28 pages including this cover page)

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 62368-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT - PART 1: SAFETY REQUIREMENTS)			
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)		—
	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. Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2018 are prefixed "Z".		P
	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords		P
	Modification to Clause 3 .		—
3.3.19	Sound exposure <i>Replace 3.3.19 of IEC 62368-1 with the following definitions:</i>		N/A
3.3.19.1	momentary exposure level, MEL 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. Note 1 to entry: MEL is measured as A-weighted levels in dB. Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.		N/A



IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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 Pa² 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>		N/A
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 		N/A

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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> <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. These requirements are valid for music or video mode only. 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 • 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> <ul style="list-style-type: none"> – a player while connected to an external amplifier that does not allow the user to walk around while in use. <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	Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz		N/A

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<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>		
10.6.2	Classification of devices without the capacity to estimate sound dose		N/A
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 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.</p>		N/A
10.6.2.2	<p>RS1 limits (to be superseded, see 10.6.3.2)</p> <p>RS1 is a class 1 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> – 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. 		N/A

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>– 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.</p> <p>– The RS1 limits will be updated for all devices as per 10.6.3.2.</p>		
10.6.2.3	<p>RS2 limits (to be superseded, see 10.6.3.3)</p> <p>RS2 is a class 2 acoustic energy source that does not exceed the following:</p> <p>– 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.</p> <p>– 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.</p>		N/A
10.6.2.4	<p>RS3 limits</p> <p>RS3 is a class 3 acoustic energy source that exceeds RS2 limits.</p>		N/A
10.6.3	Classification of devices (new)		N/A
10.6.3.1	<p>General</p> <p>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.</p>		N/A
10.6.3.2	<p>RS1 limits (new)</p> <p>RS1 is a class 1 acoustic energy source that does not exceed the following:</p> <p>– 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</p>		N/A

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		
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 50332-1.		N/A
10.6.4	Requirements for maximum sound exposure		N/A
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.		N/A

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>The elements of the instructional safeguard shall be as follows:</p> <p style="text-align: center;">  </p> <ul style="list-style-type: none"> – 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 <p>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.</p> <p>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 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		N/A
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,</p>		N/A

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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>		
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	<p>Exposure-based requirements</p> <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>		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.6.1	<p>Corded listening devices with analogue input</p> <p>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.</p> <p>NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.</p>		N/A
10.6.6.2	<p>Corded listening devices with digital input</p> <p>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.</p>		N/A
10.6.6.3	<p>Cordless listening devices</p> <p>In cordless mode,</p> <ul style="list-style-type: none"> – 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	<p>Measurement method</p> <p><i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i></p>		N/A
3	Modification to the whole document		—

IEC62368_1C- 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: <i>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.</i>						N/A
5	Modification to 4.Z1						—

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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
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
8	Modification to 10.5.1		—

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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>		N/A
10	Modification to Bibliography		—

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Add the following notes for the standards indicated:</p> <p>IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.</p>		P
11	ADDITION OF ANNEXES		—
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		P
4.1.15	<p>Denmark, Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added: 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." In Finland: "Laitte on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"</p>		N/A
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>		P

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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. <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 		N/A

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>testing, is tested with an impulse test of 2,5 kV defined in 5.4.11;</p> <ul style="list-style-type: none"> 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 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>		N/A
5.5.6	<p>Finland, Norway and Sweden 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 Add to the end of the subclause 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. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>		N/A
5.6.4.2.1	<p>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.</p>		N/A
5.6.4.2.1	<p>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.</p>		N/A

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.5.1	<p>To the second paragraph the following is added:</p> <p>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 mm² to 1,5 mm² in cross-sectional area.</p>		N/A
5.6.8	<p>Norway</p> <p>To the end of the subclause the following is added:</p> <p>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.</p>		N/A
5.7.6	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>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.</p>		N/A
5.7.6.2	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>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:</p> <p>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.</p> <p>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</p>		N/A

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>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 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>		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>		P
G.4.2	<p>Denmark</p> <p>To the end of the subclause the following is added:</p>		N/A

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<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>		
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>		P

IEC62368_1C- 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>		P
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>		N/A
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
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		P
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></p> <p>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>		N/A

ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)		N/A		
	Type of flexible cord	Code designations		N/A	
		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			

IEC 62368_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:		P
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

IEC 62368_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 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>		
4.7.2	<p>Requirements</p> <p><i>Delete the text of the second paragraph and replace with the following:</i></p> <p>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.</p> <p>NOTE: Equipment with plug portions for use in countries other than Australia and New Zealand will need to conform to other countries' requirements</p> <p>Note Additional AS/NZS 3112 Appendix J, TRF is appended to end of this TRF.</p>		P

IEC 62368_1E ATTACHMENT					
Clause	Requirement + Test		Result - Remark		Verdict
4.7.3	Compliance Criteria <i>Delete</i> this clause				P
4.8.1	General After second list, <i>add</i> 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 <i>Delete</i> the first paragraph and <i>replace</i> 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.				N/A
Table 28	<i>Delete</i> Table 28 and <i>replace</i> 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.					
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.				

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
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)		N/A
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)		N/A
Annex F Paragraph F.3.3.4	Rated Voltage <i>Delete</i> “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.		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		P
Annex F.3.8	After “The DC output of an external power supply”, insert “or docking stations and other similar external devices”		P

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
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.		P
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’.		N/A
Annex G.7.1	Mains supply cords, General Fourth dashed paragraph, <i>replace</i> ‘IEC 60320-1’ with ‘AS/NZS 60320.1’		P
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		N/A

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex M Paragraph M.3.2	<p>Test method</p> <p>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.</p>		N/A
	Special national conditions (if any)		N/A
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>		N/A

IEC 62368_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>		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>		N/A

Enclosure No. 2

Pictures of the unit

(12 pages including this cover page)



View on the unit



Top view of unit (With standard EU Plug)



Top view of unit (Without any plug)



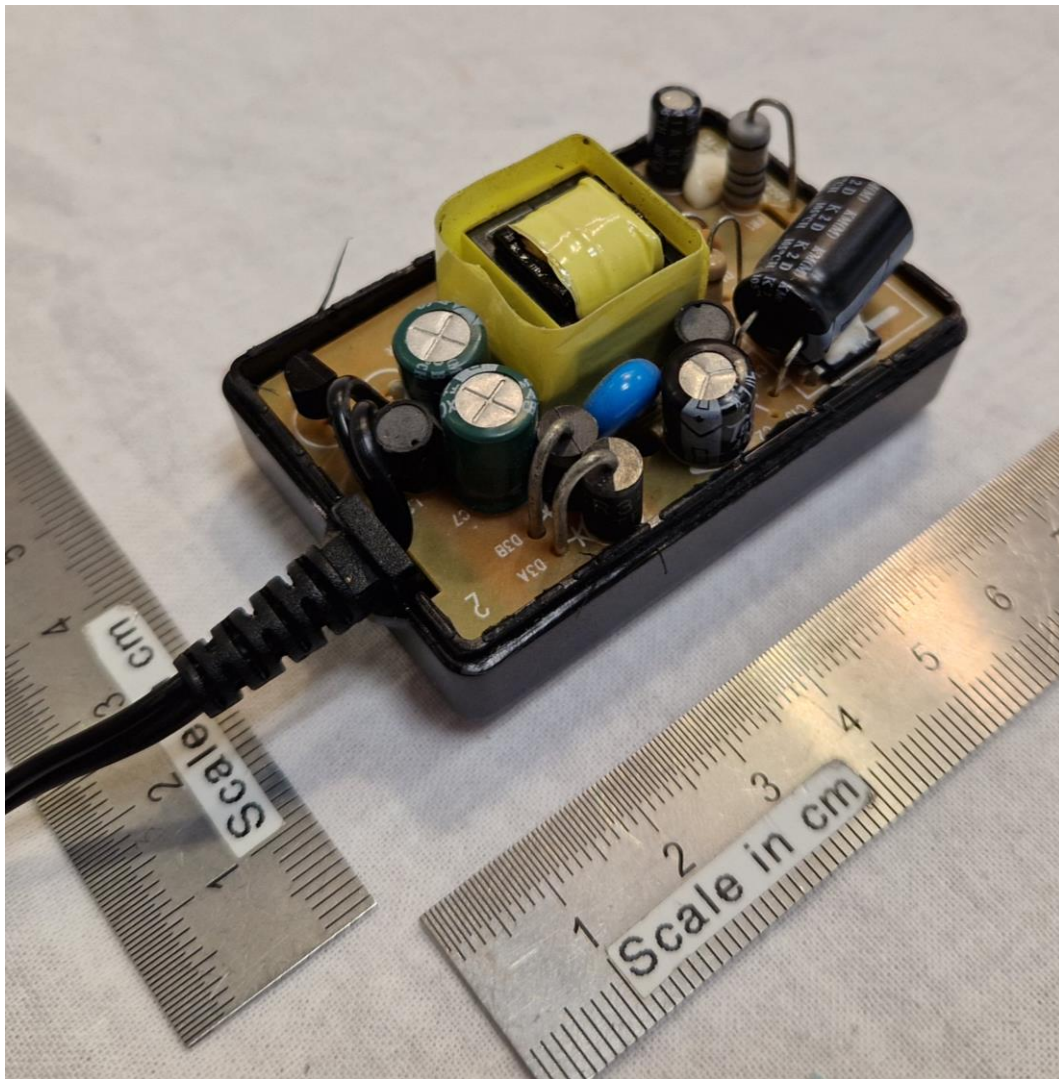
Side view of unit (Without any plug)



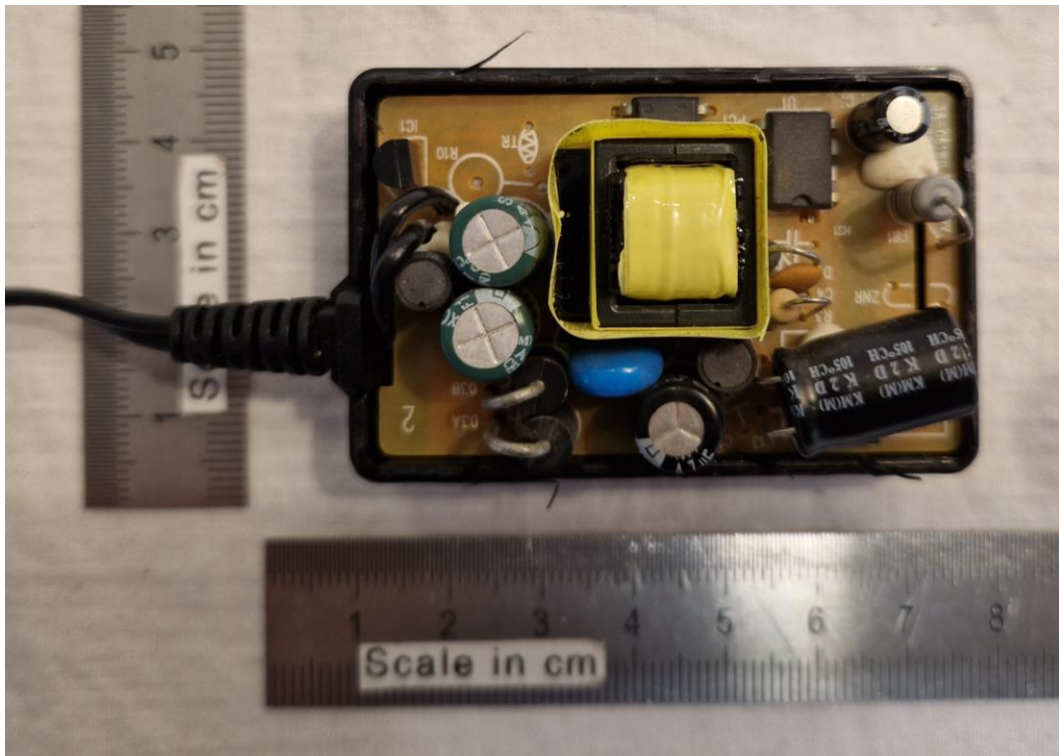
Side view of unit (With standard EU Plug)



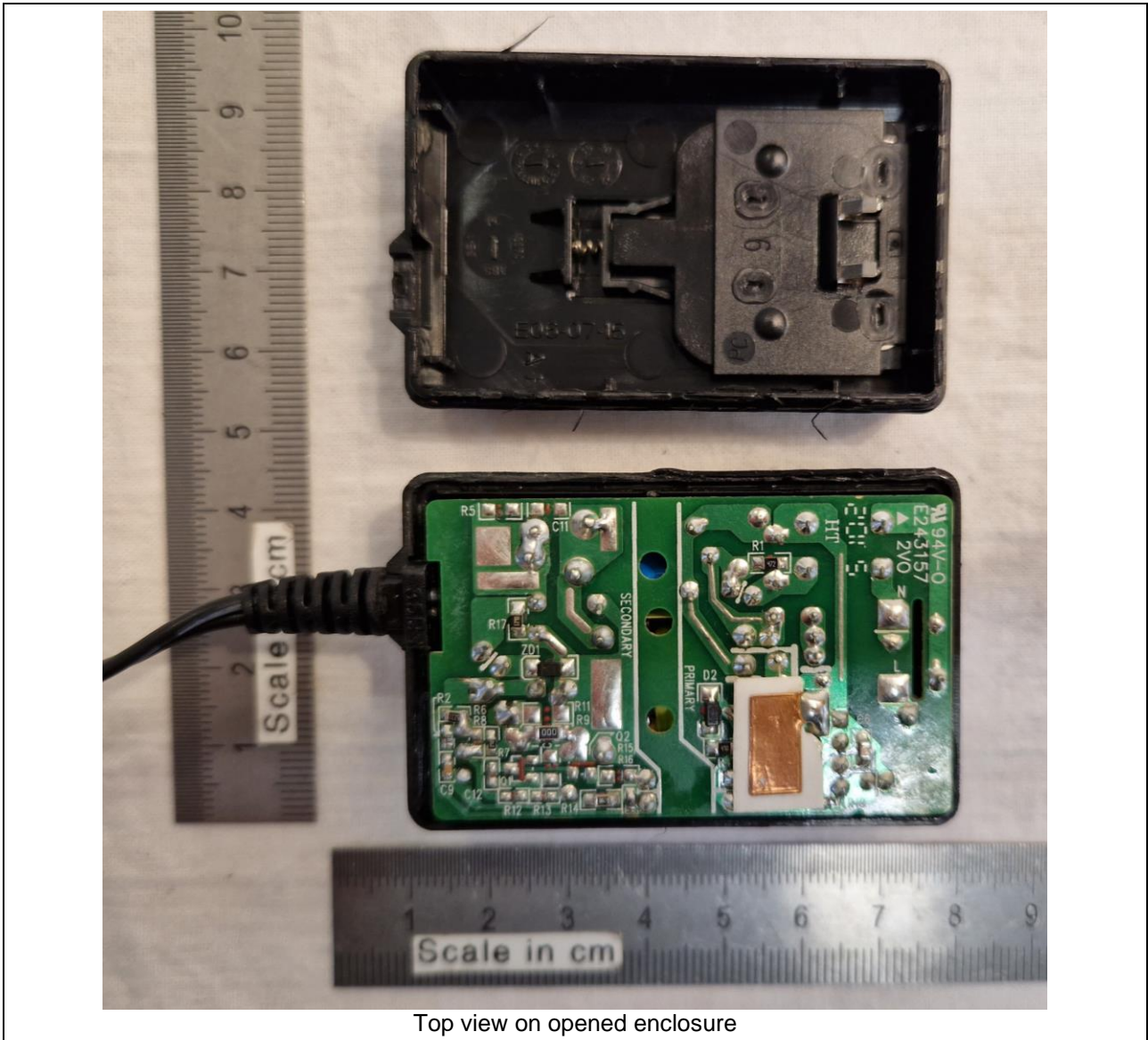
Type label



View on unit with opened enclosure



Top view on unit with opened enclosure



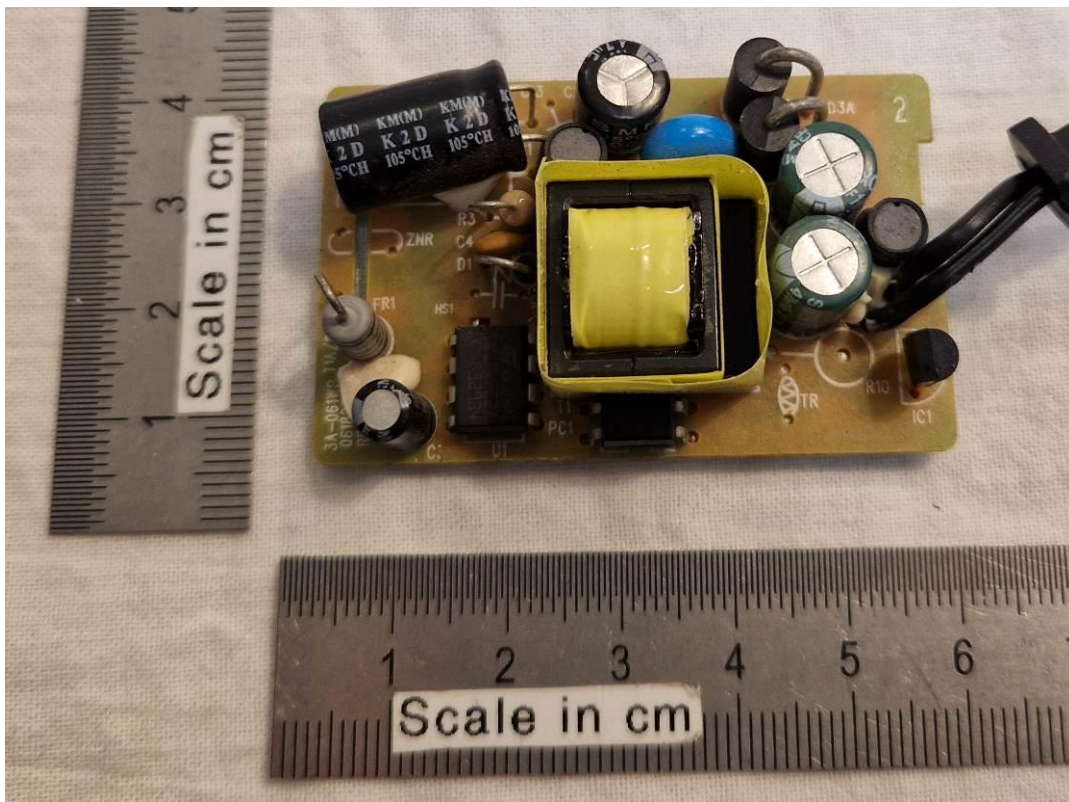
Top view on opened enclosure



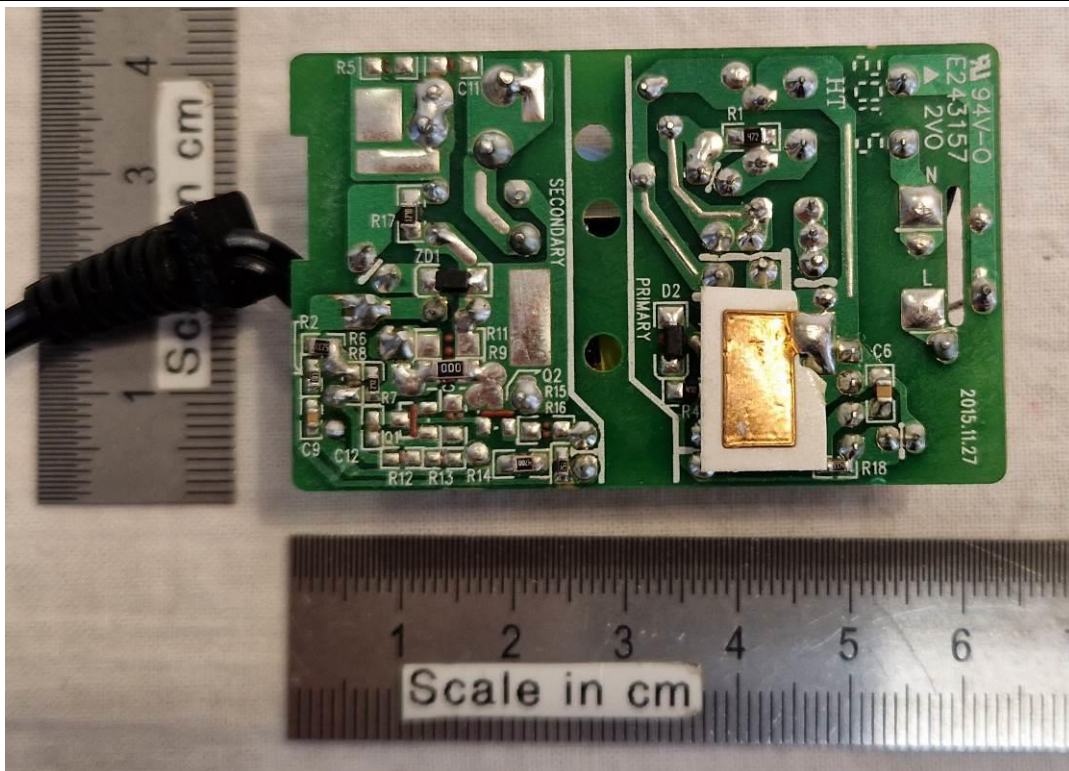
Top view on bottom part of enclosure



Top view on upper part of enclosure



Top view on PCB



Bottom side of PCB



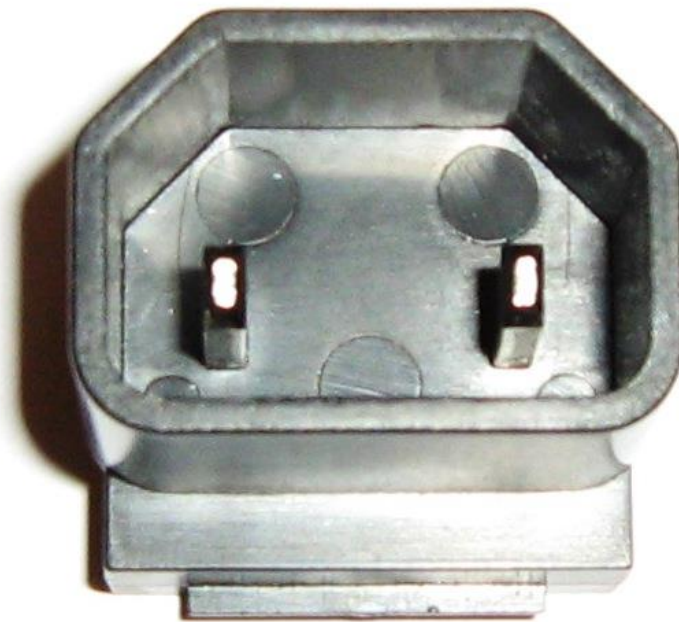
View on plug adapter EU for the unit



View on plug adapter AUS for the unit



View on plug adapter UK for the unit



View on plug adapter for the unit (IEC 60320 appliance inlet)

Enclosure No. 3

**Technical documentation –
schematics, layouts, transformer data
(6 pages including this cover page)**

Enclosure No. 4

Additional Test Data

(4 pages including this cover page)

5.2.2	TABLE: evaluation of voltage limiting components in SELV circuits			P
Component (measured between)		max. voltage (V) (normal operation)		Voltage Limiting Components
		V peak	V d.c.	
GT-41076-0603				
Transformer T1, Pin 6 to Pin 10		18 Vpk	—	—
GT-41076-0624				
Transformer T1, Pin 6 to Pin 10		123 Vpk	—	D3A/D3B
Transformer T1, Pin 6 to D3A/D3B		—	23,7 Vdc	—
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)		
See table B.4		See table B.4		
supplementary information:				

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

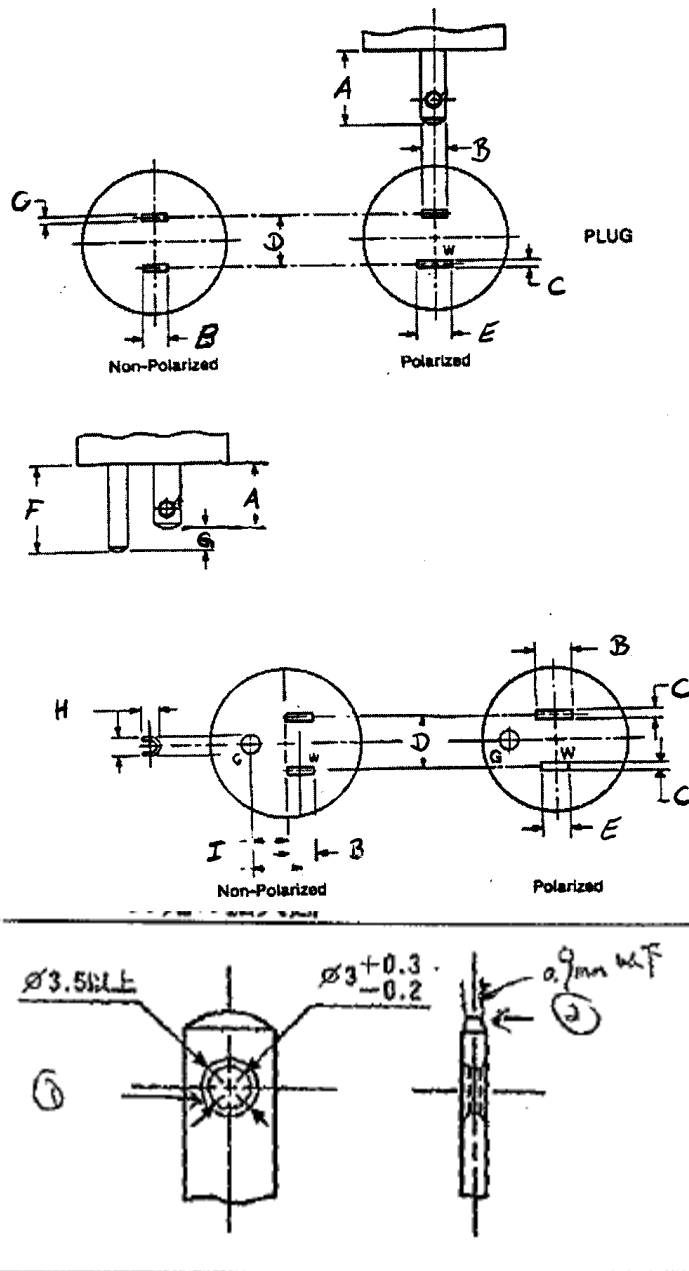
5.2.2		TABLE: Energy source classification of unearthed accessible parts			P
Polarity switch	PE fault	Neutral fault	Measured voltage U2 of network Fig F4	Operating condition	
Switch p	switch e	switch n	(mVpk) <mApk>	NC 7 SFC of a component	
Model GT-41076-WW12-X.X					
NP	Closed	Closed	1,69 <0,338>	Output + Limit: 0,707mApk	
RP	Closed	Closed	1,75 <0,350>	Output + Limit: 0,707mApk	
NP	Closed	Closed	1,69 <0,338>	Output – Limit: 0,707mApk	
RP	Closed	Closed	1,69 <0,328>	Output – Limit: 0,707mApk	
Model GT-41076-WW24-X.X					
NP	Closed	Closed	1,45 <0,290>	Output + Limit: 0,707mApk	
RP	Closed	Closed	1,40 <0,280>	Output + Limit: 0,707mApk	
NP	Closed	Closed	1,45 <0,290>	Output – Limit: 0,707mApk	
RP	Closed	Closed	1,45 <0,290>	Output – Limit: 0,707mApk	
Polarity	PE fault	Neutral fault	Measured voltage U3 of network Fig F5	Operating condition	
Switch p	switch e	switch n	(mVpk) <mApk>	SFC of a safeguard	
--	--	--	--	--	
<p>Supplementary information:</p> <p>NP: Normal polarity</p> <p>RP: reverse polarity</p> <p>Test performed on above models are representative also for other models.</p>					

5.4.1.3, 5.4.8	TABLE: Humidity test Model: GT-41076-0624	P
<p>A humidity chamber was maintained within 1°C of temperature “t” at a temperature of 25°C. The unit and any other separate components were brought to a temperature between t and t + 4°C They were then placed in the chamber and held at a relative humidity of 93% for a period of 48 hours. Prior to conditioning, parts of the unit (covers) which could be removed without the use of tools were removed and separately placed in the chamber. During conditioning, cable entrances and/or a conduit openings were left open. During this treatment, the unit was not energized.</p> <p>While still in the humidity chamber, but after all parts have been placed back on the unit, a dielectric potential was applied and maintained for a period of one minute between the points indicated below. During this test, all switching devices (switches, relays, triacs, etc.) in the primary circuit were closed.</p>		
Location	Insulation type	Potential used
Primary to Secondary	Reinforced	3000 Vac*
Primary to Secondary	Reinforced	4000 Vdc
Primary to Enclosure	Reinforced	3000 Vac*
<p>Comment: There was no breakdown of insulation.</p> <p>All components were tested.</p> <p>*Values derived from IEC60950-1 (more severe requirements).</p> <p>Model tested represent also other models.</p>		

Enclosure No. 5

**Construction data, measurement of plug in power supply connector, AUS plug report
(29 pages including this cover page)**

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

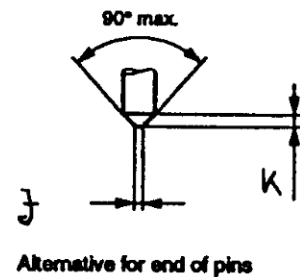
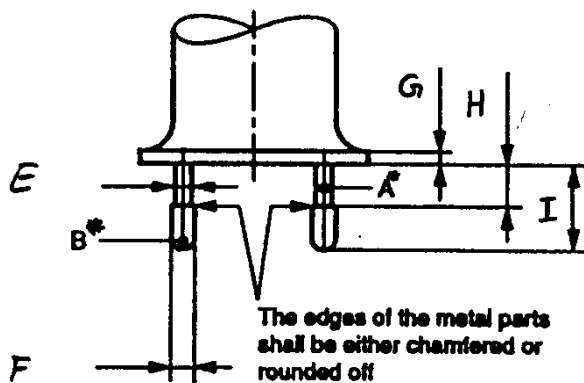
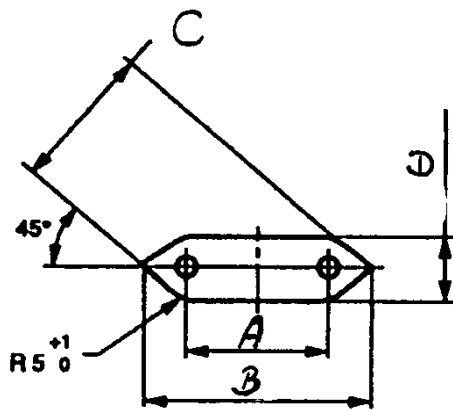


The hole is 3mm $+0,3/-0,2$ ID and 3,5mmOD

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

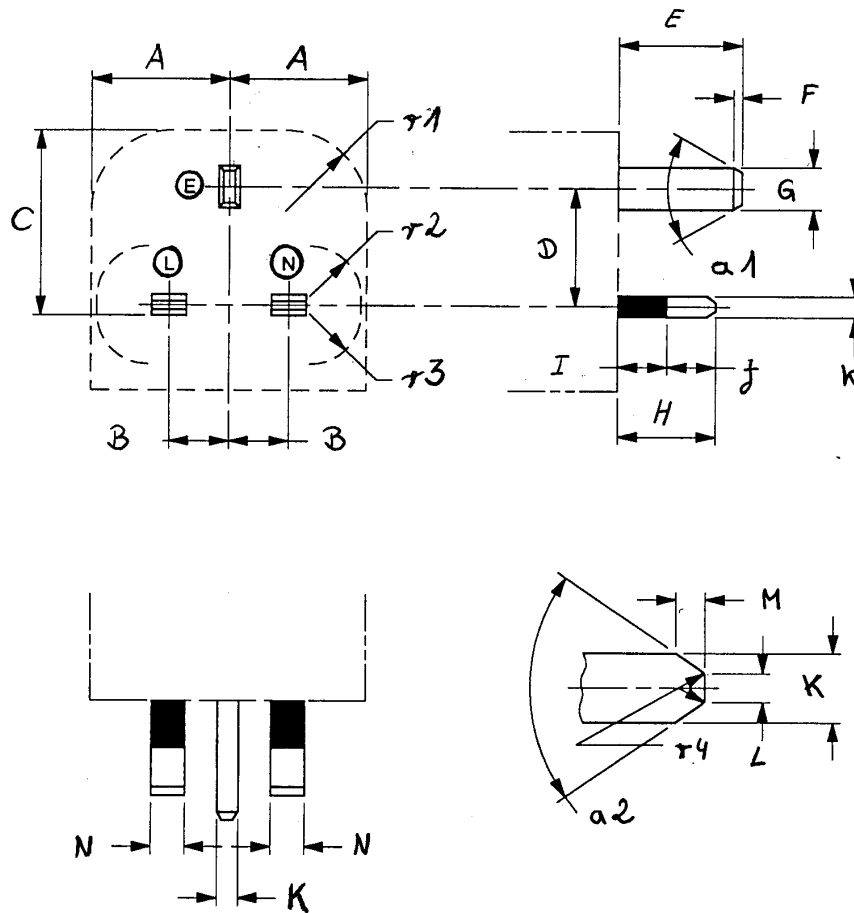
¹ In the plane of the engagement face

² at the ends of pins



A* insulating collar
B* metal pin

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



AUS plug report



**SLOVENSKA
AKREDITACIJA**
SIST EN ISO/IEC 17025
LP-009

Test report

Number: T211-0108/20 M1
Project file: C20193326
Date: 2020-03-10
Pages: 23

Product: Exchangeable AUS plug part of GT-41076 power supply

Type reference: Q-SAA

Ratings: Input data of appliance: 100-240 V~; 50-60 Hz; up to 0,3 A

Trademark: /

Applicant: GlobTek, Inc.
186 Veterans Dr. Northvale, NJ 07647, USA

Manufacturer: GlobTek (Suzhou) Co. Ltd.
Building 4, No. 76 JinLing East Road, Suzhou Industrial Park, Suzhou
JiangSu, 215021, China

Place of manufacture: See next page

Summary of testing

Testing method: Dimensions and safety:
AS/NZS 3112:2017 (Annex J)

Testing location: SIQ Ljubljana, Mašera-Spasičeva ulica 10, SI-1000 Ljubljana, Slovenia

Remarks: Date of receipt of test items: (2019-12-01)
Number of items tested: 10
Date of performance of tests: (2020-01-06) – (2020-02-11)
The test results presented in this report relate only to the items tested.
The product complies with the requirements of the testing methods.

Tested by: Tibor Kokelj

Approved by: Tomaž Knez

The report shall not be reproduced except in full.

TN405E-02

SIQ Ljubljana, Mašera-Spasičeva ulica 10, SI-1000 Ljubljana, Slovenia
T +386 1 4778 100, F +386 1 4778 444, info@siq.si, www.siq.si

T211-0108/20 M1

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1. IDENTIFICATION (example)



2. FACTORY LOCATIONS

- GlobTek, Inc. 186 Veterans Dr. Northvale, NJ 07647, USA
- GlobTek (Suzhou) Co. Ltd. Building 4, No. 76 JinLing East Road, Suzhou Industrial Park, Suzhou JiangSu, 215021, China
- Shenzhen Eng Electronics Co., Ltd. Block B, Nuclear Group Industrial District, Baishixia, Fuyun Town, Bao'an, Shenzhen, China

3. AS/NZS 3112:2017 EVALUATION

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)

History sheet			
Report No.	Date	Change	Revision No.
T211-0108/20	2020-02-18	Initial Test Report issued.	--
T211-0108/20 M1	2020-03-10	Modified type designation and applicant.	1.0



AS/NZS 3112:2017 Annex J Plugs and Socket outlets			
Clause	Requirement – Test	Result – Remark	Verdict
J	APPENDIX J: EQUIPMENT WITH INTEGRAL PINS FOR INSERTION INTO SOCKET – OUTLETS		P
J1	Scope		Noted
J2	DEFINITIONS		P
J2.1	Detachable plug portion	Type B	—
J2.2	Integral plug portion		N/A
J2.3	Plug portion		P
J3	REQUIREMENTS FOR PLUG PORTION		
J3.1	General		P
a)	For detachable plug portions intended for connection to the equipment in multiple orientations, the relevant tests are performed in the most onerous orientation.		P
b)	For Type A detachable plug portion, the relevant requirements of AS/NZS 3105 are applicable, in addition to conformance with relevant clauses of this Appendix		N/A
c)	For Type B detachable plug portions, the conformance is shown by the relevant clauses of this Appendix.		P
d)	For Type C detachable plug portions, conformance is shown by assessment to Section 2 of this Standard (plugs) and relevant clauses of this Appendix.		N/A
J3.2	Plug pins of plug portions		P
2.2	PLUG PINS		P
2.2.1	Material for pins Current-carrying parts of plug pins shall be of metal with, under the conditions occurring in the plug, sufficient mechanical strength, electrical conductivity and resistance to corrosion adequate for their intended use. Compliance is checked by inspection and, where in doubt, by chemical analysis.		P
	Plug pin material	(b)	P
2.2.2	Assembly of pins Pins that may become detachable from plug yet remain attached to cord conductors, not possible for plug to be assembled in correct manner.	No detachable pins and no cord.	N/A
	Plugs made of resilient insulation material; pins and terminals held securely in position	See also the material description in the list of safety critical components	P

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AS/NZS 3112:2017 Annex J Plugs and Socket outlets			
Clause	Requirement – Test	Result – Remark	Verdict
2.2.3	Form of pin The plug pins shall be adequately proportioned throughout, and the portion adjacent to the connection shall be designed to not introduce a stress concentration which may lead to a fracture of the pin, and shall be suitably shaped to prevent abrasion or cutting of conductor strands due to flexure in normal use.		P
	The exposed ends of plug pins shall have a bevel or radius to facilitate entry into socket- outlets and to operate shutters.	Tested, no sharp edges Figure 2.1, shape (h)	P
	Contact portion of the pins smooth and free from openings or indentations	No openings	P
	Flat pin plugs having a longitudinal seam or opening in the contact portion of one face; width not exceeding 0,3 mm		N/A
	Exposed portion of earthing pins and pins other than insulated pins free from any non-metallic covering or coatings.	Without earthing pin, both pins insulated	N/A
2.2.4	Insulation of plug pins Live parts of insulated pin plugs not exposed when plug is partially or fully engaged with associated socket		P
	Compliance by measurement to Figure 2.4	See appended table	P
	Lacquer, enamelled or sprayed insulating coating not considered to be insulated material	No Lacquer used	P
	Plugs up to 15 A complying with Figure 2.1 (a2) , 2.1 (b) or 2.1 (fg) (flat live pins) and of the insulated pin type need not comply with the R20.0 +/- 1 mm requirement of Figure 2.1 (e)		P
	All live pins on low voltage plugs except for those shown in Figure 2.1 (a2) , (b), and (g) of the insulated pin type	Both pins are insulated	P
	Colour green/ Yellow or Green not used for insulation of insulated pins		N/A
J.3.3	Ratings and dimensions for low voltage plug portions		P
	The requirements of Clauses 2.8.1 and 2.8.4 are applicable for ratings and dimensions		P
2.8.1	Low voltage flat- pin plugs and low voltage plugs having one round earth pin and two flat earth pin or two round live pins and one flat earth pin, having ratings up to and including 20 A; compliance with Figure 2.1	See enclosed test results	P
	Rating of Plug	10 A (nominal)	P
	Nominal dimensions covering disposition of pins checked by gauge of Appendix A		P
	Distance between live pin and edge of moulding to not less 9 mm.		P



AS/NZS 3112:2017 Annex J Plugs and Socket outlets			
Clause	Requirement – Test	Result – Remark	Verdict
	Measured distance	> 11 mm	P
	No point of plug face protrudes more than 0,5 mm		P
	Measured protrusion	0 mm (flat surface, without moulding irregularities or markings)	P
2.8.4	Low voltage plugs comply with the dimension of Figure 2.1	(see appended table 2.8.1)	P
	Disposition of pins checked by gauge complying with Appendix A, B or F as appropriate.	Gauge A1 (10 A, 250 V, three-pin flat-pin plugs)	P
	Low voltage plug having rating up to 15 A and of the Figure 2.1 (a1) , (c), (d) , (f) or (g) type ; comply with dimensional requirements of Figure 2.1 (e1 and e2)		P
	20 A plugs of the Figure 2.1 (a2) type shall comply with the dimensional requirements of Figure 2.1(e2).		N/A
	Plugs with insulated pins need not comply with dimension R20.0 +/- 1 mm requirement of Figure 2.1 (e)		P
J3.4	Internal connections for plug portions		P
	Requirements of Clause 2.9 apply for internal connections; unless		N/A
	Requirements contained in the relevant product Standard	To be evaluated within final product testing	N/A
2.9	INTERNAL CONNECTIONS		N/A
	Plug provided with earthed connections designed and constructed so, that when plug is correctly wired and assembled:		N/A
a)	a loose terminal screw or conductive material cannot bridge any live parts or earthing parts;		N/A
b)	the earthing parts are effectively isolated from contact with a live conductor that may become detached; and		N/A
c)	the live parts are effectively isolated from contact with any earthing conductor that may become detached.		N/A
	Any connections for auxiliary devices, such as radio interference suppressors or visual indicators, shall comply with the above requirements.		N/A
J3.5	Arrangement of earthing connection for plug portion		N/A
	Requirements of clause 2.10 apply for arrangement of earthed connections	No earth connection	N/A

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AS/NZS 3112:2017 Annex J Plugs and Socket outlets			
Clause	Requirement – Test	Result – Remark	Verdict
J3.6	Configuration of plug portions		P
	Requirements of clause 2.12.6 apply for configuration of the plug portion		P
2.12.6	Configuration of plugs		P
	Pins disposed so that configuration, as viewed from the pins, is earth, neutral and active in a clockwise direction.	Non-rewirable plug, without earthing	P
J4	TESTS		P
J4.1	General		P
	Plug portions of equipment with integral pins shall be subjected to the following tests and unless stated otherwise, shall comply with the requirements specified in Section 2 for each test. The number of test samples shall be in accordance with Table 2.2.		P
	Conformance for detachable plug portions shall be established by assessment with the plug portion fully assembled with the equipment.	Assesment together with power supply GT-41076	P
J.4.2	High voltage test		P
	The requirements of Clause 2.13.3 are applicable unless requirements are contained in the relevant product standard		P
2.13.3	High voltage test		P
	The plug shall withstand without failure an a.c. voltage of the value indicated in Table 2.3, applied between the parts set out in Items (a) and (c) of Clause 2.13.2 for 1 min in each case.	(see appended table)	P
	The plug shall further withstand, without failure, a voltage of 3000 V a.c. applied between the parts set out in Items (b) and (d) of Clause 2.13.2 for 1 min in each case.		P
	The insulation of insulated pin plugs shall withstand a voltage of 1250 V a.c. for 1 min applied in accordance with Clause 2.13.2(e)		P
J4.3	Mechanical strength of pin test		P
J4.3.1	Tumbling barrel test	No cracks of pins	P
2.13.7	Mechanical strength of pin tests		P
2.13.7.1	Tumbling barrel test	< 250 g; 500 x No damage	P



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Clause	Requirement – Test	Result – Remark	Verdict
	Following each test the samples shall comply with Clause 2.13.7.1		
J4.3.2	Pin Bending Test		P
	The pins of the plug portion of three samples not subjected to any of previous tests shall be tested for conformance with the pin bending test of Clause 2.13.7.2		P
2.13.7.2	Pin Bending Test	Pins did not break off after 20 operations.	F
J4.4	Temperature rise test		P
	The relevant requirements of Clause 2.13.8 are applicable for the temperature rise test, except that the test current shall be that specified in the relevant product standard.		P
	Test current	Measured with following power supply: GT-41076	P
	Temperature rise of the pins shall not exceed 45 K irrespective of the temperature rise of parts specified in end-product standard	Max. 8 K	P
	For detachable plug portions the temperature rise of terminals and contacts shall not exceed 45 K	See appended table	P
J4.5	Securement of pins of the plug portion		P
	Requirements of Clause 2.13.9 are applicable for securement of pins		P
2.13.9	Securement of Pins		P
2.13.9.1	Movement of pins		P
	Plug pins clamped 5 +/- 0,5 mm from pin face; test equipment and sample pre-conditioned for 1 h at 40 +/- 1 °C		P
	Force of 18 +/- 1 N applied to pin 14 +/- 0,5 mm from plug face ; applied gradually over 10 sec and maintained for 10 sec, applied in four directions.		P
	Maximum deflection during test not exceeding 2,0 mm		P
	Any distortion 5 minutes after test does not prevent insertion of plugs into standard gauge (s)		P
2.13.9.2	Fixing of pins		P
	Plug heating to 50 +/- 2 °C for 1 h		P
	Force 60 +/- 0,6 N applied to each pin over 10 sec. And maintained for 10 minutes; applied in two directions along the length of pins		P

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Clause	Requirement – Test	Result – Remark	Verdict
	Maximum displacement during test not exceeding 2,4 mm		P
	Maximum measured displacement	Max. 0,1 mm	P
	Pin returns to within 0,8 mm of nominal length within 5 minutes of removal of the test force		P
J4.6	Tests for insulation material of insulated pin-plug portions		P
	Requirements of Clause 2.13.13 are applicable for insulating material of insulated pins.		P
2.13.13	Tests for insulation material of insulated pins		P
2.13.13.1	The material of the pin insulation shall be resistant to the stresses to which it may be subjected at the high temperature likely to occur in conditions approaching the bad connection conditions and at low temperatures in particular conditions of service. Conformance is checked by the tests of Clauses 2.13.13.2 to 2.13.13.6.		P
2.13.13.2	Pressure test at high temperature		P
	Specimen tested as per Figure 2.5 with force of 2,5 N applied as specified; maintained for 2 h at 160 °C +/- 5 °C removed and cooled by immersion in water within 10 sec		P
	Thickness of insulation at point of impression not reduced by more than 50 %		P
	Initial thickness and thickness after test	Initial overall thickness of pin over insulation: 1,62 mm Initial thickness of insulation on one side of pin: 0,36 mm Reduction of thickness at point of impression: No impression (0 %)	P
	No visual cracks on insulation material		P
	Dimension of insulation material not below minimum size in Figure 2.4		P
2.13.13.3	Static Damp heat test		P
	Specimen subjected to two damp heat cycles in accordance with IEC60068-2-30 as specified; Db (12 + 12 h cycle), 95 % RH, 25 +/- 3 °C, 40 °C		P
	After this treatment and recovery to room temperature; specimen subjected to:		P
	Insulation resistance test in accordance with clause 2.13.2 (2)	(see appended table)	P
	High voltage test in accordance with clause 2.13.3	(see appended table)	P



AS/NZS 3112:2017 Annex J Plugs and Socket outlets			
Clause	Requirement – Test	Result – Remark	Verdict
	Abrasion test in accordance with clause 2.13.13.6		P
2.13.13.4	Low temperature test		P
	Plug maintained at -15 ± 2 °C for minimum of 24 h and returned to room temperature; after which specimen subjected to :		P
	Insulation resistance test in accordance with clause 2.13.2 (e)	(see appended table)	P
	High voltage test in accordance with clause 2.13.3	(see appended table)	P
	Abrasion test in accordance with clause 2.13.13.6	No damage of pin isolation	P
2.13.13.5	Impact test at low temperature		P
	Specimen maintained at -15 ± 2 °C for minimum of 24 h		P
	Specimen placed in position and subjected to impact test as per Figure 2.6 ; mass of 100 ± 1 g failing through 100 mm		P
	Four impacts applied; specimen rotated through 90 °C between impacts.		P
	After return to room temperature; no visible cracks of insulation material.		P
2.13.13.6	Abrasion test		P
	Plug held in clamp and tested as per Figure 2.7; pin loaded at 4 N; 20 000 Movements		P
	After test; pins show no damage affecting safety or impairing further use of the plug		P
	Insulation sleeve not punctured or rucked up		P
J4.7	Equipment with integral pins intended to be supported by contacts of socket- outlet		P
	Equipment with pins intended to be introduced into fixed socket – outlets not imposing undue strain on socket – outlet		P
	Applied torque not exceeding 0,25 Nm		P
	Measure torque	< 0,01 Nm	P
J4.8	Additional requirements for detachable plug portions		P
J4.8.1	Access to live parts		P
	The design and construction of the detachable plug portion shall be such that it is not possible to contact live parts with the small test finger of Figure 13 of IEC 61032.		P
	Conformance is checked by inspection and applying small test finger of Figure 13 of IEC 61032:1997 to the plug portion. If an opening does not allow entry of the test finger, a force on the test finger in the straight position is increased to 20 N.		P

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AS/NZS 3112:2017 Annex J Plugs and Socket outlets			
Clause	Requirement – Test	Result – Remark	Verdict
	It shall not be possible to incorrectly assemble the plug portion to the equipment allowing access to live parts.		P
J4.8.2	Construction of detachable contacts where the input current of the equipment exceeds 0.2 A		P
	Contacts of the equipment shall be such that they make and maintain, under normal service conditions, satisfactory electrical and mechanical contact with the corresponding contact of the detachable plug portion		P
	For connections intended to accommodate flat pins, contact shall be made with both sides of each pin, except that it shall be permissible to use spring-assisted single-sided contacts.		P
	These contacts shall not rely exclusively on the resilience of the contact material and shall have an opposite face of material other than thermoplastic or resilient insulating material.		P
	The alignment and contact making properties of contacts shall be independent of terminal screws.		P
	The effectiveness of the contacts shall be independent of pressure from any thermoplastic or resilient moulding.		P
	Conformance with the effectiveness of the contacts is checked by inspection and by the plug portion detachment requirements of Paragraph J4.8.3.		P
	A visual inspection is conducted to determine the existence of interference between the metal contacts and the thermoplastic or resilient moulding to provide supplementary contact pressure to the metal contacts.		P
J4.8.3	Plug portion detachment requirements		P
	For all Type B or C devices and for Type A devices where the outlet of the detachable plug portion is parallel to the plug supply pins, disengagement of the detachable plug portion from the equipment shall require at least two simultaneous independent actions or the use of a tool.	Type B	P
	Conformance is verified by inspection and the following test:		P
	The plug portion and the equipment/adaptor shall be connected and disconnected 50 times (100 strokes).		P



AS/NZS 3112:2017 Annex J Plugs and Socket outlets			
Clause	Requirement – Test	Result – Remark	Verdict
	The plug portion shall be securely held in position. A force which, over a period of 10 s, shall be increased steadily to 60 ±0.6 N and held at this value for a further 10 s, shall be applied evenly at the connecting equipment in a direction parallel to the pins. This procedure shall be conducted three times on the same plug portion, at intervals of 5 min, without disturbing the plug portions between tests.		P
	During the test period, the plug portion shall not separate from the equipment.		P
	The test of AS/NZS 3112 'temperature rise test' for plugs shall be conducted immediately after the above test without disturbing the sample.		P
J4.8.4	Resistance of insulating material to heat and fire		P
J4.8.4.1	Resistance to heat		P
	For Type B detachable plug portions parts of non-metallic material, parts of insulating material supporting live parts including connections, and parts of thermoplastic material providing supplementary insulation or reinforced insulation, shall be sufficiently resistant to heat if their deterioration could cause the appliance to fail to comply with this Standard.		P
	This requirement does not apply to the insulation or sheath of flexible cords or internal wiring.		N/A
	Conformance is checked by subjecting the relevant part to the ball pressure test of IEC 60695-10-2.		P
	The test is carried out at a temperature of 40 ±2°C plus the maximum temperature rise determined during the temperature test of Paragraph J4.4, but it shall be at least— (a) 75 ±2°C, for external parts; (b) 125 ±2°C, for parts supporting live parts.	125°C; Material: Sabic 945	P
J4.8.4.2	Resistance to fire		P
	Plug portions shall comply with the requirements for resistance to fire in accordance with AS/NZS 3100. The glow-wire test temperature 'T' shall be 750°C.	Sabic 945	P
J4.8	Additional requirements for detachable plug portions		P
	Where a plug portion is detachable, conformance shall be established by assessment with the plug portion fully assembled with the equipment.		P

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AS/NZS 3112:2017 Annex J Plugs and Socket outlets			
Clause	Requirement – Test	Result – Remark	Verdict
	Access to live parts shall be assessed for incorrect assembly of the plug portion.		P
	It shall not be possible to assemble the plug portion to the equipment resulting in a dangerous situation allowing access to live parts.		P
	The plug portion shall not expose live parts prior to assembly.		P
APPENDIX K - NON-DETACHABLE PARTS TEST			P
K1	SCOPE This Appendix sets out the method for determining non-detachable parts that protect against access to live parts, moisture or contact with moving parts.		P
K2	GENERAL Non-detachable parts shall be fixed in a reliable manner and withstand the mechanical stress occurring during normal use. Snap-in devices used for the fixing of non-detachable parts shall have an obvious locked position. The fixing properties of snap-in devices used in parts that are likely to be removed during installation or servicing shall be reliable. Conformance is checked by the following test.		P
K3	TEST		P
	Parts that are likely to be removed during installation or servicing shall be disassembled and assembled 10 times before the test is carried out.		P
	The test shall be carried out at room temperature. If conformance may be affected by the temperature of the equipment, the test is also carried out immediately after the equipment has been operated under the conditions specified in Clause 3.14.5.		P
	The test is applied to all parts that are likely to be detachable whether or not they are fixed by screws, rivets or similar parts.		P
	A force shall be applied without jerks for 10 s in the most unfavourable direction to parts likely to be weak as follows: (a) Push force, 50 N. (b) Pull force: (i) If the shape of the part is such that the fingertips cannot easily slip off, 50 N. (ii) If the projection of the part that is gripped is less than 10 mm in the direction of removal, 30 N.	50 N	P
	The push force shall be applied by test probe 11 of IEC 61032.		P



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AS/NZS 3112:2017 Annex J Plugs and Socket outlets			
Clause	Requirement – Test	Result – Remark	Verdict
	If the part is likely to be twisted, the following torque shall be applied at the same time as the pull or push force: (A) 2 Nm, for major dimensions up to 50 mm. (B) 4 Nm, for major dimensions over 50 mm.	2 Nm	P
	This torque is also applied when the test fingernail is pulled by means of the loop. If the projection of the part which is gripped is less than 10 mm, the torque is reduced by 50%.		P
	Parts shall remain in the locked position and not become detached.		P

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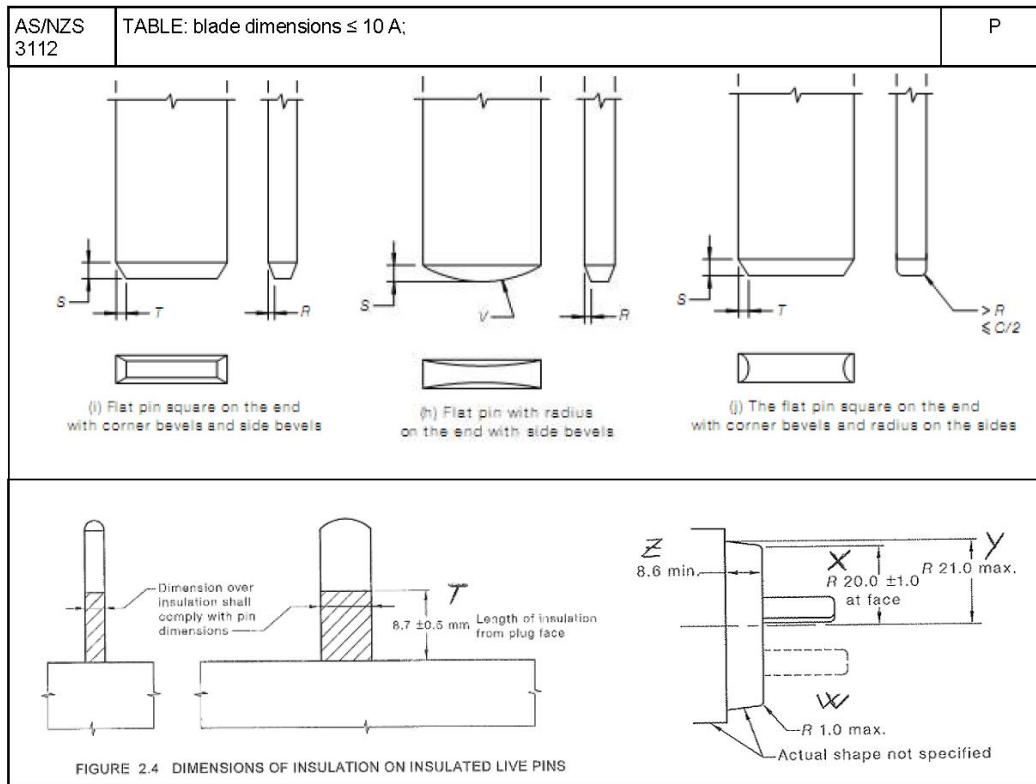


AS/NZS 3112:2017 Annex J Plugs and Socket outlets							
Clause	Requirement – Test			Result – Remark			Verdict
AS/NZS 3112	TABLE: blade dimensions (two pin plug) ≤ 10 A, 250 V max;						P
Reference	Measured (mm)	Limits (mm) 10 A or 15 A	verdict	Reference	Measured (mm)	Limits (mm)	verdict
A1 A2 A3 A4	21 21 21 52	21,9 max. or 27,0 min.	P	V	/	6 (nominal)	N/A
A	6,34	6,35 ± 0,15	P	H	/	6,35 ± 0,15	N/A
B	/	6,35 ± 0,15	N/A	L	/	1,63 ± 0,15	N/A
C	1,62)	1,63 +0,15/-0,05	P	J	/	6,35 (nominal)	N/A
D	By gauge	7,92 (nominal)	P	K	/	17,06 ± 0,4	N/A
E	/	10,31 (nominal)	N/A	M	/	12,7 (nominal)	N/A
F	17,03	17,06 ± 0,4	P	a	60°	60°	P
G	/	19,94 ± 0,8	N/A	W	< 1,0	1,0 max	P
P	/	4,75 ± 0,05	N/A	X	20,77	20,0 ± 1,0	P
R	0,30	0,35 ± 0,05	P	Y	21,0	21,0 max	P
S	0,86	0,90 ± 0,10	P	Z	8,8	11,6	P
T	-	≥ 0,60	P	∅	8,78	8,7 ± 0,5	P

(b) Two-pin plugs (10 A, 125 V max.)

(c) Two-pin plugs (up to 10 A, 250 V max.)

DIMENSIONS IN MILLIMETRES



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AS/NZS 3112:2017 Annex J Plugs and Socket outlets				
Clause	Requirement – Test	Result – Remark		Verdict
2.13.3	Table: Test No. 2 – High voltage test			P
	Test voltage applied between	Test voltage	Breakdown	-
	All poles of the plug; taken in pairs	1000 V a.c.	No	P
	Live poles of the plug and a flexible electrode	3500 V a.c.	No	P
	Live pole and metal foil applied around insulation on pins	1250 V a.c.	No	P
2.13.8	Table: Test No. 8 – Temperature rise test			P
	Ambient temperature	24°C		-
	Test Voltage	240 V		-
	Measured parts	DT measured (K)	DT allowed (K)	-
	Active phase or Neutral terminal (max.)	Max. 8	< 45	P

AS/NZS 3112:2017 Annex J Plugs and Socket outlets				
Clause	Requirement – Test	Result – Remark		Verdict
2.13.9.1	Table: Movement of pins			P
	Force direction	Measured deflection (mm)	Allowed deflection (mm)	-
Phase pin	in both directions along the line perpendicular to the plane of the pin, and passing through the centre of the pin;	Max. 0,95	2,0	P
	in that plane in both directions along a line at right angles to that specified in Item (a)	Max. 1,04	2,0	P
Neutral pin	in both directions along the line perpendicular to the plane of the pin, and passing through the centre of the pin;	Max. 0,84	2,0	P
	in that plane in both directions along a line at right angles to that specified in Item (a)	Max. 1,11	2,0	P
2.13.13.3	Table: Test No. 13 (b) – Insulation resistance test after static heat damp test			P
	Applied between	Insulation resistance (MΩ)	Minimum required (MΩ)	-
	All poles of the plug ; taken in pairs	> 100 MΩ	5 MΩ	P
	Live poles of the plug and a flexible electrode	> 100 MΩ	5 MΩ	P
	Live pole and metal foil applied around insulation on pins	> 100 MΩ	5 MΩ	P
2.13.13.3	Table: Test No. 13 (b) – High voltage test after static damp heat test			P
	Test voltage applied between	Test voltage	Breakdown	-
	All poles of the plug ; taken in pairs	1000 V a.c.	No	P
	Live poles of the plug and a flexible electrode	3500 V a.c.	No	P
	Live pole and metal foil applied around insulation on pins	1250 V a.c.	No	P
2.13.13.4	Table: Test No. 13 (b) – Insulation resistance test after low temperature test			P
	Applied between	Insulation resistance (MΩ)	Minimum required (MΩ)	-
	All poles of the plug ; taken in pairs	> 100 MΩ	5 MΩ	P
	Live poles of the plug and a flexible electrode	> 100 MΩ	5 MΩ	P
	Live pole and metal foil applied around insulation on pins	> 100 MΩ	5 MΩ	P

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AS/NZS 3112:2017 Annex J Plugs and Socket outlets				
Clause	Requirement – Test	Result – Remark		Verdict
2.13.13.3	Table: Test No. 13 (b) – High voltage test after low temperature test			P
	Test voltage applied between	Test voltage	Breakdown	-
	All poles of the plug; taken in pairs	1000 V a.c.	No	P
	Live poles of the plug and a flexible electrode	3500 V a.c.	No	P
	Live pole and metal foil applied around insulation on pins	1250 V a.c.	No	P



4. COMPONENT LIST (plug part)

AS/NZS 3112:2017 Annex J Plugs and Socket outlets					
Clause	Requirement – Test		Result – Remark		Verdict
TABLE: Components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity
Plug base material	Sabic	945(GG)	Rated 94V-0 at min. 1 mm; GWIT 800°C; GWFI 825°C	(QMFZ2) IEC 60695-2-12	UL E121562
Plug base material (alternative)	Sabic	SE1X	Rated 94V-1 at min. 1,5 mm; GWIT 700°C; GWFI 900°C	(QMFZ2) IEC 60695-2-12	UL E121562
Plug base material (alternative)	Sabic	C2950	Rated 94V-0 at min. 1,5 mm; GWIT 800°C; GWFI 960°C	(QMFZ2) IEC 60695-2-12	UL E121562
Plug base material (alternative)	Sabic	CX7211	Rated 94V-0 at min. 1 mm; GWIT 800°C; GWFI 960°C	(QMFZ2) IEC 60695-2-12	UL E121562
Pin insulation	Sabic	945(GG)	Rated 94V-0 at min. 1 mm; GWIT 800°C; GWFI 825°C	(QMFZ2) IEC 60695-2-12	UL E121562
Metal pin	/	/	Cu > 58%	/	Checked with the unit
1) An asterisk indicates a mark which assures the agreed level of surveillance					

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5. PHOTOS





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