


LVD TEST REPORT

Report No: PRMS2407109-04SR

Issued for

Jiangxi Liandi technology Co.,LTD

4 to 5 floors north of 6 Chuangzhi Science Park High-tech
Industrial Development Zone, Fuzhou City, Jiangxi
Province, China




Product Name:	Fast Charger
Trade Mark:	
Model Name:	LD-PQ20WEU, LD-PQS20WEU, LD-PD20WEU, LD-PDS20WEU, LD-QC18WEU, LD-PQ20WUK, LD-PQS20WUK, LD-PD20WUK, LD-PDS20WUK, LD-QC18WUK
Test Standard:	EN IEC 62368-1:2020+A11:2020


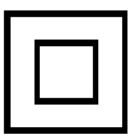



TEST REPORT

IEC 62368-1

Audio/video, information and communication technology equipment

Part 1: Safety requirements

Report Number.....	PRMS2407109-04SR
Date of issue.....	2024-09-30
Total number of pages.....	110 pages
Tested by (signature).....	Crystal Wen 
Approved by (signature).....	Kind Yang 
Name of Testing Laboratory preparing the Report.....	Shenzhen Promise Test Technology Co., Ltd.
Address.....	103, Building 1, Yibaolai Industrial City, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Applicant's name.....	Jiangxi Liandi technology Co.,LTD
Address.....	4 to 5 floors north of 6 Chuangzhi Science Park High-tech Industrial Development Zone, Fuzhou City, Jiangxi Province, China
Test specification:	
Standard.....	EN IEC 62368-1:2020+A11:2020
Test procedure.....	LVD Scheme
Non-standard test method.....	N/A
Test Report Form No.....	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	Fast Charger
Trade Mark	
Manufacturer.....	Same as applicant
Model/Type reference	LD-PQ20WEU, LD-PQS20WEU, LD-PD20WEU, LD-PDS20WEU, LD-QC18WEU, LD-PQ20WUK, LD-PQS20WUK, LD-PD20WUK, LD-PDS20WUK, LD-QC18WUK
Ratings	Input: 100-240V~, 50/60Hz, 0.5A Output: See table A for details

List of Attachments (including a total number of pages in each attachment):	
Attachment 1 report: 1 pages (EN 50075 report) Attachment 2 report: 4 pages (BS1363 report) Attachment 3 report: 15 pages (Photo)	
Summary of testing:	
Tests performed EN IEC 62368-1:2020+A11:2020	Testing location: ShenZhen Promise Test Technology Co., Ltd. 103, Building 1, Yibaolai Industrial City, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Summary of compliance with National Differences:	
<input checked="" type="checkbox"/> The product fulfils the requirements of EN IEC 62368-1:2020+A11:2020	
Copy of marking plate:	
<p>The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.</p> <p style="text-align: center;">Fast Charger</p> <p>Model: LD-PQ20WEU Input: 100-240V~ 50/60Hz 0.5A Output-A: 5.0V=3.0A ,9.0V=2.0A 12.0V=1.5A 18W MAX Output-C: 5.0V=3.0A ,9.0V= 2.22A 12.0V= 1.67A 20.04W MAX PPS: 3.3-5.9V =3.0A 3.3-11.0V=1.8A USB-A+USB-C: 5.0V = 3.0A 20W MAX</p> <div style="display: flex; justify-content: space-around; align-items: center;">      </div> <p>Made in China 2408 [Redacted]</p> <p>Jiangxi Liandi Technology Co.,LTD</p>	
Notes:	
The above labels are draft of an artwork for marking plate pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.	

TEST ITEM PARTICULARS:	
Classification of use by.....:	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input checked="" type="checkbox"/> Skilled person <input type="checkbox"/> Children likely to be present
Supply Connection.....:	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit - not Mains connected - <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance	<input checked="" type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +____%/ -____% <input type="checkbox"/> None
Supply Connection – Type	<input checked="" type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input checked="" type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input type="checkbox"/> other: ____
Considered current rating of protective device as part of building or equipment installation.....:	16A or 20A for building; 2A (for equipment) Installation location: <input checked="" type="checkbox"/> building; <input checked="" type="checkbox"/> equipment
Equipment mobility.....:	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input checked="" type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: ____
Class of equipment	<input type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III
Access location	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maxium operating ambient:	25°C
IP protection class	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP__
Power Systems	<input checked="" type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - _____ V L-L
Altitude during operation (m)	<input type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> _5000_____ m
Altitude of test laboratory (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> _____ m
Mass of equipment (kg)	<input checked="" type="checkbox"/> 0.05kg

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..... :	2024-08-22
Date (s) of performance of tests..... :	2024-08-22 to 2024-09-20

GENERAL REMARKS:

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

"(See appended table)" refers to a table appended to the report.

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

GENERAL PRODUCT INFORMATION:
Product Description:

1. This test report covers models are Class II Fast Charger (direct plug-in type) intended to be used for information technology and audio/video equipment, output terminal by output cord.
2. All electronic components are mounted on PWB and housed in a plastics enclosure which is secured by ultrasonic welding.
3. The specified Max. Ambient temperature is +25°C.
4. The equipment is operated up to 5000 m above sea level as declared by manufacturer. Clearance values have been evaluated for an operating altitude of max. 5000 meters, based on Table 17 altitude adjustment factor 1.48.

Model Description:

All models are identical to each other except the model name, output ratings, plug type, output port and some secondary components to adjust output rating.

Table A (Model list):

Model	Output port	Output rating
LD-PQ20WAB	USB-A+USB-C	USB-A: 5.0Vdc 3.0A or 9.0Vdc 2.0A or 12.0Vdc 1.5A USB-C: 5.0Vdc 3.0A or 9.0Vdc 2.22A or 12.0Vdc 1.67A USB-A + USB-C: 5.0Vdc 3.0A Output power max.20.04W.
LD-PQS20WAB	USB-A+USB-C	USB-A: 5.0Vdc 3.0A or 9.0Vdc 2.0A or 12.0Vdc 1.5A USB-C: 5.0Vdc 3A or 9.0Vdc 2.22A or 12.0Vdc 1.67A PPS:3.3Vdc-5.9Vdc 3.0A or 3.3Vdc-11.0Vdc 1.8A USB-A + USB-C: 5.0Vdc 3.0A Output power max.20.04W.
LD-PD20WAB	USB-C	USB-C: 5.0Vdc 3.0A or 9.0Vdc 2.22A or 12.0Vdc 1.67A Output power max.20.04W.
LD-PDS20WAB	USB-C	USB-C: 5.0Vdc 3.0A or 9.0Vdc 2.22A or 12.0Vdc 1.67A PPS:3.3Vdc-5.9Vdc 3.0A or 3.3V-11.0Vdc1.8A Output power max.20.04W.

LD-QC18WAB	USB-A	USB-A: 5.0Vdc 3.0A or 9.0Vdc 2.0A or 12.0Vdc 1.5A Output power max.18W.
AB=EU or UK, EU represents fixed European plug, UK represents fixed British plug.		

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 circuits except for secondary circuit after T1	Ordinary	N/A	N/A	Enclosure, See 5.4.2, 5.4.3, 5.4.5, 5.4.9, 5.5.3 and 5.5.4
ES1: Secondary circuit after T1	Ordinary	N/A	N/A	N/A
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
PS3 circuits	Enclosure	See 6.3	V-0	N/A
PS3 circuits	PCB	See 6.3	V-1 or better	N/A
PS2/PS3 circuits	All other components/materials	See 6.3	See 6.4.5, 6.4.6	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: Edges and corners of enclosure	Ordinary	N/A	N/A	N/A
MS1: Mass of the unit	Ordinary	N/A	N/A	N/A
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS3: Internal parts/circuits	Ordinary	N/A	N/A	Enclosure
TS1: Plastic enclosure	Ordinary	N/A	N/A	N/A
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A

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**

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment. See also Annex G	P
4.1.3	Equipment design and construction	Evaluation of safeguards regarding preventing access to ES3 parts, limiting the source supplying outputs to fulfill ES1, and protection in regard to risk of ignition, mechanical-caused injury and thermal burn considered.	P
4.1.4	Specified ambient temperature for outdoor use (°C) :	Not a outdoor use appliance.	N/A
4.1.5	Constructions and components not specifically covered	No such component and construction.	N/A
4.1.8	Liquids and liquid filled components (LFC)		N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness	See below	P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Clause T.2, T.4)	P
4.4.3.3	Drop tests	(See Annex T.7)	P
4.4.3.4	Impact tests		N/A
4.4.3.5	Internal accessible safeguard tests	The external enclosure cannot be opened without damaging the product.	N/A
4.4.3.6	Glass impact tests		N/A
4.4.3.7	Glass fixation tests	No such glass used.	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

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Clause	Requirement + Test	Result - Remark	Verdict
4.4.3.9	Air comprising a safeguard	(See Annex T)	P
4.4.3.10	Accessibility, glass, safeguard effectiveness	After tests of 4.4.3.2, 4.4.3.3, 4.4.3.8, 4.4.3.9 no safeguard damaged.	P
4.4.4	Displacement of a safeguard by an insulating liquid	No insulating liquid used in this equipment.	N/A
4.4.5	Safety interlocks		N/A
4.5	Explosion		P
4.5.1	General		P
4.5.2	No explosion during normal/abnormal operating condition	(See Clause B.2, B.3)	P
	No harm by explosion during single fault conditions	(See Clause B.4)	P
4.6	Fixing of conductors		N/A
	Fix conductors not to defeat a safeguard		N/A
	Compliance is checked by test.....:		N/A
4.7	Equipment for direct insertion into mains socket-outlets		P
4.7.2	Mains plug part complies with relevant standard... :	The dimension of the injection part of EU plug, UK plug were tested and comply with the relevant standard.	P
4.7.3	Torque (Nm)..... :	Max. 0.019Nm for EU model; max. 0.020Nm for UK model;	P
4.8	Equipment containing coin/button cell batteries		N/A
4.8.1	General	No batteries used in this appliance.	N/A
4.8.2	Instructional safeguard..... :		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	Likelihood of fire or shock due to entry of conductive object		P

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Clause	Requirement + Test	Result - Remark	Verdict
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..... :	No such single pulses generated in the EUT or applied to it. (See appended table 5.2)	N/A
5.2.2.5	Limits for repetitive pulses..... :	No such repetitive pulses within the EUT (See appended table 5.2)	N/A
5.2.2.6	Ringling signals	No such ringing signals within the EUT (See Annex H)	N/A
5.2.2.7	Audio signals	No such audio signals (See Clause E.1)	N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits	Accessible ES1 derived from ES3 circuits by double safeguard or reinforced safeguard, and the current or voltage levels complied with ES1/ES2 limits.	P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors	No multiple ES3 energy source in the same vicinity area during the equipment servicing conditions.	N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards	Only ES1 circuit and the enclosure (safeguard) was accessible to person.	P
	Accessibility to outdoor equipment bare parts	No opening of enclosure, no access with test probe (Figure V.1 and Figure V.2) to any ES3 circuit or parts.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.2.2	Contact requirements	No opening of enclosure, no access with test probe to any ES3 circuit or parts.	P
	Test with test probe from Annex V	No openings allowing entry of a probe. No access with test probe to any ES3 circuit or parts.	—
5.3.2.2 a)	Air gap – electric strength test potential (V)..... :		N/A
5.3.2.2 b)	Air gap – distance (mm) :	No opening in the enclosure.	N/A
5.3.2.3	Compliance		P
5.3.2.4	Terminals for connecting stripped wire	No stripped wire used.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	The choice and application have taken into account as specified in this Clause 5 and Annex T and natural rubber, hygroscopic materials or asbestos was not using as insulation.	P
5.4.1.3	Material is non-hygroscopic	No hygroscopic material used.	N/A
5.4.1.4	Maximum operating temperature for insulating materials..... :	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degrees..... :	2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	Pollution degree 2 is applied. No insulating compound applied (however see 5.5.4).	N/A
5.4.1.5.3	Thermal cycling test	See above	N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such transformer within the EUT	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such starting pulses within the EUT	N/A
5.4.1.8	Determination of working voltage..... :	(See appended table 5.4.1.8)	P
5.4.1.9	Insulating surfaces	Considered for accessible surface of enclosure.	P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	See only 5.4.1.10.3 below.	P
5.4.1.10.2	Vicat test..... :		N/A
5.4.1.10.3	Ball pressure test..... :	Phenolic bobbin material used in T1, which is acceptable without test. Other parts material see appended table 5.4.1.10.3	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.2	Clearances		P
5.4.2.1	General requirements	The highest value in Cl 5.4.2.2 and Cl 5.4.2.3 be used.	P
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance	Temporary overvoltage 2000V _{peak} assumed.	P
	Temporary overvoltage	(See appended table 5.4.2.2)	—
5.4.2.3	Procedure 2 for determining clearance	(See appended table 5.4.2.3)	P
5.4.2.3.2.2	a.c. mains transient voltage..... :	2500V _{pk} considered for Overvoltage Cat. II	—
5.4.2.3.2.3	d.c. mains transient voltage	No such transient	—
5.4.2.3.2.4	External circuit transient voltage..... :	No such transient	—
5.4.2.3.2.5	Transient voltage determined by measurement..... :	AC mains transient voltage considered.	—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages		N/A
5.4.2.6	Clearance measurement..... :	(See appended table 5.4.2)	P
5.4.3	Creepage distances		P
5.4.3.1	General		P
5.4.3.3	Material group..... :	IIIb	—
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 insulation applied.	N/A
5.4.4.4	Solid insulation in semiconductor devices		P
5.4.4.5	Insulating compound forming cemented joints	No such construction within the EUT	N/A
5.4.4.6	Thin sheet material		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	No such insulation used within the EUT.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Number of layers (pcs) :		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material..... :		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components	See G.5.3 and G.6.1	P
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P , K_R , d , V_{PW} (V)..... :	See appended table 5.4.4.9	P
	Alternative by electric strength test, tested voltage (V), K_R :		N/A
5.4.5	Antenna terminal insulation		P
5.4.5.1	General	The power supply will provide non-mains supply voltages to other equipment having antenna terminals.	P
5.4.5.2	Voltage surge test	Surge test with 50 discharges at a maximum rate of 12/min from a 1 nF capacitor charged to 10 kV performed.	P
5.4.5.3	Insulation resistance (M Ω)..... :	Measured 500M Ω between mains supply to output terminals.	P
	Electric strength test..... :	(See appended table 5.4.9)	P
5.4.6	Insulation of internal wire as part of supplementary safeguard	No such insulation of internal wire as part of supplementary safeguard.	N/A
5.4.7	Tests for semiconductor components and for cemented joints	No tests necessary –see only 5.4.4.4.	N/A
5.4.8	Humidity conditioning	Test was performed on product with each source of transformer listed in table 4.1.2	P
	Relative humidity (%), temperature (°C), duration (h)..... :	93%, 40°C, 120h per client requires.	—
5.4.9	Electric strength test	Compliance was checked immediately following temperature test in 5.4.1.4 and on a sample of the transformer raised to the relevant temperature as measured during that test.	P
5.4.9.1	Test procedure for type test of solid insulation..... :	(See appended table 5.4.9)	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.9.2	Test procedure for routine test	No routine tests considered. To be considered during the relevant national approval.	N/A
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	No such connections to external circuit as above.	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V)..... :		—
	Nominal voltage U_{peak} (V)..... :		—
	Max increase due to variation ΔU_{sp} :		—
	Max increase due to ageing ΔU_{sa} :		—
5.4.11.3	Test method and compliance..... :		N/A
5.4.12	Insulating liquid		N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid..... :		N/A
5.4.12.3	Compatibility of an insulating liquid..... :		N/A
5.4.12.4	Container for insulating liquid..... :		N/A
5.5	Components as safeguards		P
5.5.1	General	See below.	P
5.5.2	Capacitors and RC units	Approved Y capacitor provided. See G.11.1 for compliance and their application.	P
5.5.2.1	General requirement		P

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector..... :	(See appended table 5.5.2.2)	N/A
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See sub-clause 5.4 or Clause G.12)	P
5.5.5	Relays	No such component provided	N/A
5.5.6	Resistors	No such component provided	N/A
5.5.7	SPDs	No such component provided	N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable.....:	No such external circuits.	N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment	Indoor equipment only.	N/A
	RCD rated residual operating current (mA).....:		—
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6	Protective conductor	Class II equipment.	N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm ²) :		—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm ²)..... :		—
5.6.4.2	Protective current rating (A)..... :		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
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	Figure 4 and Figure 5 of IEC 60990:2016 was used in determining of the limit of ES1	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.....:		N/A
5.7.5	Earthed accessible conductive parts.....:		N/A
5.7.6	Requirements when touch current exceeds ES2 limits	No touch current exceeds the ES2 limits.	N/A
	Protective conductor current (mA).....:		N/A
	Instructional Safeguard.....:		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits	No external circuits.	N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	a) Equipment connected to earthed external circuits, current (mA).....:		N/A
	b) Equipment connected to unearthed external circuits, current (mA).....:		N/A
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES.....:		N/A
	Air gap (mm).....:		N/A
6	ELECTRICALLY- CAUSED FIRE		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.2	Classification of PS and PIS		P
6.2.2	Power source circuit classifications.....:	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS	(See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials.....:	No ignition and no such temperature attained within the equipment. (See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
	Combustible materials outside fire enclosure.....:		N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method	Method by control of fire spread applied, V-0 fire enclosure provided.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	Method by control of fire spread applied, V-0 fire enclosure provided.	N/A
6.4.3.1	Supplementary safeguards		N/A
6.4.3.2	Single Fault Conditions.....:	(See appended table B.4)	N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits	Compliance detailed as follows: – <u>Printed board</u> : rated min. V-1 – <u>All other components</u> : at least V-2 except for parts mounted on min. V-1 material or small parts of combustible material (with mass less than 4g) or components complying to relevant IEC standard. – <u>Isolating transformer</u> : complying with G.5.3.	P
6.4.5.2	Supplementary safeguards	– (See appended tables 4.1.2 and Annex G)	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.6	Control of fire spread in PS3 circuits	Compliance detailed as follows: – Parts as in 6.4.5 above – Fire enclosure rated V-0 used.	P
6.4.7	Separation of combustible materials from a PIS	V-0 fire enclosure provided.	N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	No specific barrier provided.	P
6.4.8.2	Fire enclosure and fire barrier material properties	See below.	P
6.4.8.2.1	Requirements for a fire barrier	No fire barrier used.	N/A
6.4.8.2.2	Requirements for a fire enclosure	The V-0 material is used for the fire enclosure (overall enclosure).	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	The V-0 fire enclosure is used. See above.	P
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
6.4.8.3.2	Fire barrier dimensions	No fire barrier used.	N/A
6.4.8.3.3	Top openings and properties	No openings in fire enclosure.	N/A
	Openings dimensions (mm)..... :	No openings	N/A
6.4.8.3.4	Bottom openings and properties		N/A
	Openings dimensions (mm)..... :	No 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	No opening in the side of fire enclosure.	N/A
	Openings dimensions (mm)..... :		N/A
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)..... :		N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating..... :	Fire enclosure is made of V-0 material.	P
6.4.9	Flammability of insulating liquid..... :	No insulating liquid used in the appliance.	N/A
6.5	Internal and external wiring		P
6.5.1	General requirements	Lead wires comply with UL 758, which has the equivalent requirement with IEC/TS 60695-11-21.	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.5.2	Requirements for interconnection to building wiring :	See appended tables 4.1.2.	N/A
6.5.3	Internal wiring size (mm ²) for socket-outlets..... :	No socket-outlets used.	N/A
6.6	Safeguards against fire due to the connection to additional equipment		P

7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards or personal protective equipment (PPE)		N/A
	Personal safeguards and instructions..... :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010)..... :		—
7.6	Batteries and their protection circuits		N/A

8	MECHANICALLY-CAUSED INJURY		P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners		P
8.4.1	Safeguards	Edges and corners of the enclosure are rounded.	P
	Instructional Safeguard..... :		N/A
8.4.2	Sharp edges or corners	Edges and corners of the enclosure are rounded.	P
8.5	Safeguards against moving parts		N/A
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	No moving parts.	N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard..... :		N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m)..... :		N/A
	Space between end point and nearest fixed mechanical part (mm)..... :		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly..... :		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts..... :		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N)..... :		N/A
8.5.4.3.5	Compliance		N/A
8.5.5	High pressure lamps		N/A
	Explosion test..... :		N/A
8.5.5.3	Glass particles dimensions (mm)..... :		N/A
8.6	Stability of equipment		N/A
8.6.1	General	Classification MS1 according to table 35, line 5 and no stability requirements.	N/A
	Instructional safeguard..... :		N/A
8.6.2	Static stability		N/A
8.6.2.2	Static stability test..... :		N/A
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm)..... :		—
	Tilt test		N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test..... :		N/A
8.7	Equipment mounted to wall, ceiling or other structure		N/A

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

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Clause	Requirement + Test	Result - Remark	Verdict
9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications		P
9.3	Touch temperature limits		P
9.3.1	Touch temperatures of accessible parts..... :	No part considered to be accessible other than enclosure and output cable. The equipment evaluated by temperature test (See appended table 5.4.1.4)	P
9.3.2	Test method and compliance		P
9.4	Safeguards against thermal energy sources		P
9.5	Requirements for safeguards		P
9.5.1	Equipment safeguard	Enclosure provided to limit the transfer of thermal energy of internal parts under normal operating conditions and abnormal operating conditions.	P
9.5.2	Instructional safeguard..... :	Instructional safeguard is not required.	N/A
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General	Not a wireless power transmitters	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
10.2.1	General classification	No such radiation generated from the equipment.	N/A
	Lasers.....:		—
	Lamps and lamp systems.....:		—
	Image projectors.....:		—
	X-Ray.....:		—
	Personal music player.....:		—
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s) comply.....:		N/A
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.4.1	General requirements	No such radiation generated from the equipment.	N/A
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and location..... :		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure..... :		N/A
10.4.3	Instructional safeguard..... :		N/A
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements	No such x-radiation generated from the equipment	N/A
	Instructional safeguard for skilled persons..... :		—
10.5.3	Maximum radiation (pA/kg)..... :		—
10.6	Safeguards against acoustic energy sources		N/A
10.6.1	General	Not such equipment.	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
	Max. acoustic output $L_{Aeq,T}$, dB(A)..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A)..... :		N/A

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.1	General		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.2	Normal operating conditions		P
B.2.1	General requirements..... :	(See summary of testing for tested models, each loaded according to its output ratings. See also appended table B.2.5.)	P
	Audio Amplifiers and equipment with audio amplifiers..... :	Not such equipment.	N/A
B.2.3	Supply voltage and tolerances	+10 % and -10 % considered.	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, B.4)	P
B.3.2	Covering of ventilation openings		N/A
	Instructional safeguard..... :		N/A
B.3.3	DC mains polarity test	The EUT is not connected to a D.C. mains	N/A
B.3.4	Setting of voltage selector	No voltage selector was used.	N/A
B.3.5	Maximum load at output terminals	(See appended table B.3, B.4)	P
B.3.6	Reverse battery polarity	No battery within the EUT	N/A
B.3.7	Audio amplifier abnormal operating conditions	Not such equipment.	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions..... :	All safeguards remained effective.	P
B.4	Simulated single fault conditions		P
B.4.1	General	(See appended table B.3, B.4)	P
B.4.2	Temperature controlling device	No such device used.	N/A
B.4.3	Blocked motor test	No motors used.	N/A
B.4.4	Functional insulation	See below.	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.3, B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.3, B.4)	P

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards used.	N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.3, B.4 for faults on electronic components)	P
B.4.6	Short circuit or disconnection of passive components	(See appended table B.3, B.4)	P
B.4.7	Continuous operation of components	The EUT is continuous operating type and no such components intended for short time operation or intermittent operation	N/A
B.4.8	Compliance during and after single fault conditions	(See appended table B.3, B.4)	P
B.4.9	Battery charging and discharging under single fault conditions	No battery involved in the EUT	N/A
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements	No UV generated from the equipment.	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		P
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		P
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)..... :	Not such equipment.	—
	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	Letter symbols for quantities and units are complied with IEC 60027-1.	P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010.	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	The required marking is located on the enclosure of the equipment and is easily visible.	P
F.3.2	Equipment identification markings	See copy of marking plate.	P
F.3.2.1	Manufacturer identification :	See copy of marking plate	P
F.3.2.2	Model identification :	See page 2	P
F.3.3	Equipment rating markings	See the following details.	P
F.3.3.1	Equipment with direct connection to mains	The equipment is direct connected to AC mains, see F.3.3.3 to F.3.3.6.	P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of the supply voltage..... :	~	P
F.3.3.4	Rated voltage..... :	See copy of marking plate.	P
F.3.3.5	Rated frequency..... :	See copy of marking plate.	P
F.3.3.6	Rated current or rated power..... :	See copy of marking plate.	P
F.3.3.7	Equipment with multiple supply connections	Only one mains supply connection provided.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.4	Voltage setting device	Auto range and no voltage selector provide within the equipment.	N/A
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings.....:	No outlet used.	N/A
F.3.5.2	Switch position identification marking.....:	No such switch on the equipment.	N/A
F.3.5.3	Replacement fuse identification and rating markings.....:	The fuse resistor is located within the equipment and not replaceable by an ordinary person, instructed person or a skilled person. The fuse resistor marked with: "FR1 2.2R/1W" on PCB.	P
	Instructional safeguards for neutral fuse.....:		N/A
F.3.5.4	Replacement battery identification marking.....:	No such battery on the equipment.	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	See below.	P
F.3.6.1	Class I equipment	Class II equipment.	N/A
F.3.6.1.1	Protective earthing conductor terminal.....:		N/A
F.3.6.1.2	Protective bonding conductor terminals.....:		N/A
F.3.6.2	Equipment class marking.....:	Symbol IEC60417-5172 used.	P
F.3.6.3	Functional earthing terminal marking.....:		N/A
F.3.7	Equipment IP rating marking.....:	IPX0.	—
F.3.8	External power supply output marking.....:	See copy of marking plate.	P
F.3.9	Durability, legibility and permanence of marking	Marking is considered to be legible and easily discernible. See also the following details.	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. And then again for 15 sec, with the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling and lifting of the label edge. After each test, the marking remained legible.	P
F.4	Instructions		P
	a) Information prior to installation and initial use		P
	b) Equipment for use in locations where children not likely to be present		N/A
	c) Instructions for installation and interconnection	The equipment is intended to be used for information technology equipment	P
	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	No such terminals provided.	N/A
	g) Protective earthing used as a safeguard		N/A
	h) Protective conductor current exceeding ES2 limits	No such terminals provided.	N/A
	i) Graphic symbols used on equipment		N/A
	j) Permanently connected equipment not provided with all-pole mains switch	Not permanently connected equipment.	N/A
	k) Replaceable components or modules providing safeguard function	No such markings.	N/A
	l) Equipment containing insulating liquid	No insulating liquid in this equipment.	N/A
	m) Installation instructions for outdoor equipment	Indoor used equipment.	N/A
F.5	Instructional safeguards		N/A
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General	No such component used.	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.1.3	Test method and compliance		N/A
G.2	Relays		N/A
G.2.1	Requirements	No such component used.	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	No such component used.	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	No such component used.	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	No such component used	N/A
G.3.4	Overcurrent protection devices	Fuse resistor (FR1) complying with the standards as overcurrent protection device.	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions..... :	See appended table B.3, B.4	N/A
G.4	Connectors		P
G.4.1	Spacings	No such connector with insulated surfaces accessible within the EUT	N/A
G.4.2	Mains connector configuration..... :	Mains plug complied with standard.	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	Output connector so designed that insert into a mains socket is unlikely to occur.	P
G.5	Wound components		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.1	Wire insulation in wound components	Approved triple insulated wire used as reinforced insulation for secondary winding of T1.	P
G.5.1.2	Protection against mechanical stress	Physical separation provided by insulation tube.	P
G.5.2	Endurance test		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Test time (days per cycle)..... :		—
	Test temperature (°C)..... :		—
G.5.2.3	Wound components supplied from the mains		N/A
G.5.2.4	No insulation breakdown		N/A
G.5.3	Transformers		P
G.5.3.1	Compliance method..... :	The transformer meets the requirements given in G.5.3.2 and G.5.3.3.	P
	Position..... :	T1	P
	Method of protection..... :	By protection circuit design.	P
G.5.3.2	Insulation	Primary windings and secondary windings are separated by Reinforced insulation (The core is considered as primary part as it is not isolated from Primary)	P
	Protection from displacement of windings..... :	The end-turn of each winding is fixed by insulating tape.	—
G.5.3.3	Transformer overload tests	(See appended table B.3)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment.	P
G.5.3.3.2	Winding temperatures	(See appended table B.3)	P
G.5.3.3.3	Winding temperatures - alternative test method	Alternative test method was not considered.	N/A
G.5.3.4	Transformers using FIW	No FIW used.	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 used.	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	Triple insulated wire used in T1 secondary windings used as reinforced safeguard in the isolating transformer that has separately complied with Annex J.	P
G.6.2	Enamelled winding wire insulation	Insulation does not rely on solvent-based enamel.	P
G.7	Mains supply cords		N/A
G.7.1	General requirements	Direct plug-in equipment	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		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	No IC current limiter provided within the equipment.	N/A
	IC limiter output current (max. 5A).....:		—
	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 such resistor used	N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
G.11	Capacitors and RC units		P
G.11.1	General requirements	Y Capacitor used in accordance with their rating and complied with subclasses of IEC 60384-14. (see appended table 4.1.2)	P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
G.12	Optocouplers		P
	Optocouplers comply with IEC 60747-5-5 with specifics	Approved optocouplers comply with IEC 60747-5-5 (see appended table 4.1.2)	P
	Type test voltage $V_{ini,a}$:	Min. 4000Vpeak	—
	Routine test voltage, $V_{ini,b}$:	Min. 4000Vpeak	—
G.13	Printed boards		P
G.13.1	General requirements	See the following details.	P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board or over the outer surface of coated printed boards complied with the minimum clearance and creepage requirements of 5.4.2 and 5.4.3.	P
G.13.3	Coated printed boards	No coated printed board or multilayer board applied for within the equipment.	N/A
G.13.4	Insulation between conductors on the same inner surface	See above.	N/A
G.13.5	Insulation between conductors on different surfaces	See above.	N/A
	Distance through insulation.....:		N/A
	Number of insulation layers (pcs)		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.13.6	Tests on coated printed boards	See above.	N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements	No coating on component terminals considered to affect creepage or clearances.	N/A
G.15	Pressurized liquid filled components		N/A
G.15.1	Requirements	No such device provided within the equipment.	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 used	N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test..... :		—
	Mains voltage that impulses to be superimposed on		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test..... :		—
G.16.3	Capacitor discharge test..... :		N/A
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
H.3.1	Ringing signal	No telephone ringing signal generated within the equipment.	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):.....		—
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.....	Triple insulated winding wiring used as reinforced safeguard in the isolating transformer that has been evaluated to Annex J, See Table 4.1.2 for details	—
	Solid round winding wire, diameter (mm).....	See above	P
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm ²).....	See above	P
J.2/J.3	Tests and Manufacturing		—
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard.....	No such device used	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

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Clause	Requirement + Test	Result - Remark	Verdict
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
K.7.4	Electric strength test		N/A
L	DISCONNECT DEVICES		P
L.1	General requirements	AC plug used to disconnect from AC mains.	P
L.2	Permanently connected equipment	Not permanently connected equipment.	N/A
L.3	Parts that remain energized	No accessible parts on the supply side of the disconnect device.	N/A
L.4	Single-phase equipment	The mains plug disconnects both poles simultaneously.	P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices	See above.	P
L.8	Multiple power sources	Only one a.c. mains connection.	N/A
	Instructional safeguard..... :		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Batteries and their cells comply with relevant IEC standards..... :	No battery used	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

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

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Clause	Requirement + Test	Result - Remark	Verdict
	Obtained hydrogen generation rate.....:		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%).....:		N/A
M.7.4	Marking.....:		N/A
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s)..... :		—
M.8.2.3	Correction factors..... :		—
M.8.2.4	Calculation of distance d (mm):		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse		N/A
	Instructional safeguard..... :		N/A
N	ELECTROCHEMICAL POTENTIALS		N/A
	Material(s) used..... :		—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Value of X (mm)..... :	Considered.	—
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECTS		P
P.1	General	No opening in the enclosure.	P
P.2	Safeguards against entry or consequences of entry of a foreign object		P
P.2.1	General	No opening in the enclosure.	P
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

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Clause	Requirement + Test	Result - Remark	Verdict
P.2.3.2	Consequence of entry test..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesives securing parts		N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T _c (°C)..... :		—
	Duration (weeks)..... :		—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources	See appended table Annex Q.1	P
Q.1.1	Requirements		P
	a) Inherently limited output		N/A
	b) Impedance limited output		P
	c) Regulating network limited output	A regulating network limits the output in compliance with table Q.1 both under normal operating conditions and after any single fault.	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..... :		N/A
	Current rating of overcurrent protective device (A) :		N/A
Q.2	Test for external circuits – paired conductor cable	No such circuit for connection to the EUT	N/A
	Maximum output current (A) :		N/A
	Current limiting method..... :		—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General	No such consideration.	N/A
R.2	Test setup		N/A
	Overcurrent protective device for test..... :		—
R.3	Test method		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Cord/cable used for test..... :		—
R.4	Compliance		N/A
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		P
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		P
	Samples, material..... :	Approved fire enclosure with V-0 material used.	—
	Wall thickness (mm)..... :		—
	Conditioning (°C)..... :		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material..... :		—
	Wall thickness (mm)..... :		—
	Conditioning (°C)..... :		—
S.3	Flammability test for the bottom of a fire enclosure		N/A
S.3.1	Mounting of samples		N/A
S.3.2	Test method and compliance		N/A
	Mounting of samples :		—
	Wall thickness (mm)..... :		—
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosure materials of equipment with a steady state power exceeding 4 000 W		N/A
	Samples, material..... :		—
	Wall thickness (mm)..... :		—
	Conditioning (°C)..... :		—
T	MECHANICAL STRENGTH TESTS		P
T.1	General		P
T.2	Steady force test, 10 N :	(See appended table T.2, T.3, T.4, T.5)	P
T.3	Steady force test, 30 N :	No internal enclosure.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
T.4	Steady force test, 100 N	(See appended table T.2, T.3, T.4, T.5)	P
T.5	Steady force test, 250 N		N/A
T.6	Enclosure impact test		N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test	(See appended table T.7)	P
T.8	Stress relief test.....	(See appended table T.8)	P
T.9	Glass Impact Test.....		N/A
T.10	Glass fragmentation test		N/A
	Number of particles counted.....		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)	No such antennas provided within the equipment.	N/A
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General		N/A
	Instructional safeguard :	Not such equipment	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	No access with test probes (figure V.1 and V.2) to any hazardous parts.	P
V.1.3	Openings tested with straight unjointed test probes		N/A
V.1.4	Plugs, jacks, connectors tested with blunt probe		NA
V.1.5	Slot openings tested with wedge probe		NA
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.....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		N/A
Y.1	General	Indoor equipment only.	N/A
Y.2	Resistance to UV radiation		N/A
Y.3	Resistance to corrosion		N/A
Y.3	Resistance to corrosion		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by.....:		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure.....:		N/A
Y.3.5	Compliance		N/A
Y.4	Gaskets		N/A
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests		N/A
	Alternative test methods.....:		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means		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						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾	
Test model: LD-PQS20WEU							
264Va.c. 60Hz	Primary circuits supplied by a.c., mains supply	Normal	264Vrms	--	SS	Frequency: 60Hz	ES3
		Abnormal	--	--	--	--	
		Single fault	--	--	--	--	
264Va.c. 60Hz	T1 secondary pin 6-7	Normal	32.8Vpk	--	SS	Frequency: 142kHz	ES1
		Abnormal:	--	--	--	--	--
		Single fault: SC T1 pin 6 to 7	--	--	SS	--	ES1
264Va.c. 60Hz	USB-A Output “+” to “-”	Normal	12.10Vdc	--	SS	--	ES1
		Abnormal Output overload	11.63Vdc	--	SS	--	ES1
		Single fault: SC/OC (Refer to fault condition on table B.3, B.4, output shutdown)	0Vdc	--	SS	--	ES1
		Single fault: SC/OC (Refer to fault condition on table B.3, B.4, fuse open)	0Vdc	--	SS	--	ES1
264Va.c. 60Hz	USB-C Output “+” to “-”	Normal	12.19Vdc	--	SS	--	ES1
		Abnormal Output overload	11.86Vdc	--	SS	--	ES1

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Clause	Requirement + Test			Result - Remark			Verdict
		Single fault: SC/OC (Refer to fault condition on table B.3, B.4, output shutdown)	0Vdc	--	SS	--	ES1
		Single fault: SC/OC (Refer to fault condition on table B.3, B.4, fuse open)	0Vdc	--	SS	--	ES1
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. 3) Supplementary information: SC=Short Circuit, OC=Open Circuit							

5.4.1.8	TABLE: Working voltage measurement				P
Location		RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments
Test model: LD-PQS20WEU					
T1 pin 1-6		200	340	142KHz	--
T1 pin 3-6		254	364	142KHz	--
T1 pin 5-6		224	420	142KHz	--
T1 pin 9-6		224	368	142KHz	--
T1 pin 1-7		200	356	142KHz	--
T1 pin 3-7		264	612	142KHz	Max. RMS and Max. Peak
T1 pin 5-7		226	448	142KHz	--
T1 pin 9-7		223	388	142KHz	--
CY1 primary to secondary		214	356	60	--
IC3 pin 1-3		223	364	60	--
IC3 pin 1-4		224	368	60	--
IC3 pin 2-3		223	372	60	--
IC3 pin 2-4		223	364	60	--
Supplementary information:					
Test voltage 240Vac, 60Hz					

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

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics				P
Allowed impression diameter (mm)..... :			≤ 2 mm		—
Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)	
Plug pin holder	SABIC JAPAN L L C / type: 945(GG)	2.5	125	1.1	
Supplementary information:					
Supplementary information: The bobbin materials of transformer are phenolic, no test is needed. No other parts applied.					

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)
L to N before Fuse resistor (BI)	420	240	60Hz	2.3 (1.5*1.48)	6.2	--	2.5	6.2
Different polarity of fuse resistor (BI)	420	240	60Hz	2.3 (1.5*1.48)	3.4	--	2.5	3.4
Primary circuit to accessible enclosure (RI)	420	240	60Hz	4.5 (3.0*1.48)	5.6	--	5.0	5.6
Two terminals of Y capacitor (RI)	420	240	60Hz	4.5 (3.0*1.48)	6.1	--	5.0	6.1
Two terminals of IC3 Optocoupler (RI)	420	240	60Hz	4.5 (3.0*1.48)	7.6	--	5.0	7.6
Primary to Secondary trace via PCB (RI)	420	240	60Hz	4.5 (3.0*1.48)	5.6	--	5.0	5.6
Transformer Primary to Secondary trace via PCB (RI)	612	264	142kHz	4.5 (3.0*1.48)	6.5	--	5.5	6.5
Transformer core to USB-C port	612	264	142kHz	4.5 (3.0*1.48)	7.6	--	5.5	7.6

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Clause	Requirement + Test				Result - Remark			Verdict
Transformer primary winding to secondary winding (RI)	612	264	142kHz	4.5 (3.0*1.48)	5.7	--	5.5	5.7
Transformer core to secondary winding (RI)	612	264	142kHz	4.5 (3.0*1.48)	7.6	--	5.5	7.6
Supplementary information:								
BI: Basic insulation; RI: Reinforced insulation. Note 1: Only for frequency above 30 kHz Note 2: See table 5.4.2.4 if this is based on electric strength test Note 3: Provide Material Group 1. Triple insulation wire used as secondary windings of T1. Core is considered as primary part. 2. Unless otherwise specified, the worst conditions of Cl. & Cr. in above mentioned locations have been considered and listed. 3. The equipment is intended to be operated under altitude up to 5000m, so the clearance is multiplied by the altitude correction factor (1.48, linear interpolation used), specified in table 16 of IEC 62368-1.								

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)	
Bobbin in transformer (T1)	612	Reinforce insulation	0.4	1)	
Enclosure	420	Reinforce insulation	0.4	1)	
Optocoupler	420	Reinforce insulation	0.4	1)	
Insulation tape used for transformer (T1)	612	Reinforce insulation	2 layers	2 layers	
Supplementary information:					
1) See appended table 4.1.2 for details.					

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz					P
Insulation material	E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)
Bobbin of transformer	17kV	142	0.71	0.51	Reinforced	612
Insulation tape used for transformer (T1)	--	142	0.46	0.1	Reinforced	612
Supplementary information:						
The mains frequency test voltage shall be as follows: for reinforced insulation: $1,2 \times 2 \times V_{PW} / K_R$ Bobbin: 2068Vpk or dc						

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Clause	Requirement + Test	Result - Remark	Verdict
Insulation tape: 3193Vpk or dc Above test voltage is lower than table 5.4.9, the electric strength tests according to table 5.4.9.			

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
L to N (fuse F1 opened)		DC	2500	No
Two poles of fuse F1 (On PCB)		DC	2500	No
Unit primary to secondary (output)		DC	4000	No
Unit primary to plastic enclosure (with metal foil)		DC	4000	No
Primary to secondary of transformer T1		DC	4000	No
Secondary to core of transformer T1		DC	4000	No
Insulation tape used in and around transformer T1 (single layer)		DC	4000	No
Supplementary information:				
Core of transformer T1 was considered as primary parts. Test after humidity treatment, heating test, and for unit primary to secondary, primary to plastic enclosure electric strength after each fault condition test. Test were performed on product with each source listed in table 4.1.2. The DC voltage source was performed on all testing once in forward and once in reverse.				

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 are: [] bleeding resistor rating: [] ICX: Notes: A. Test Location: Phase to Neutral; Phase to Earth; and/or Neutral to Earth B. Operating condition abbreviations: N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition						

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

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Clause	Requirement + Test	Result - Remark	Verdict
Supplementary information:			

5.7.4	TABLE: Unearthed accessible parts					P
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V_{rms} or V_{pk})	Current (A_{rms} or A_{pk})	Freq. (Hz)	
Output “+”/ “-” to earth	Normal	264Va.c. 60Hz	--	0.13mA _{pk}	--	ES1
	Abnormal Output overload	264Va.c. 60Hz	--	0.13mA _{pk}	--	ES1
	Single fault: SC/OC (Refer to fault condition on table B.3, B.4, output shutdown)	264Va.c. 60Hz	--	0.13mA _{pk}	--	ES1
	Single fault: SC/OC (Refer to fault condition on table B.3, B.4, fuse open)	264Va.c. 60Hz	--	0.15mA _{pk}	--	ES1
Plastic enclosure to earth	Normal	264Va.c. 60Hz	--	0.02mA _{pk}	--	ES1
	Abnormal Output overload	264Va.c. 60Hz	--	0.02mA _{pk}	--	ES1
	Single fault: SC/OC (Refer to fault condition on table B.3, B.4, output shutdown)	264Va.c. 60Hz	--	0.02mA _{pk}	--	ES1
	Single fault: SC/OC (Refer to fault condition on table B.3, B.4, fuse open)	264Va.c. 60Hz	--	0.02mA _{pk}	--	ES1
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						
Tested with CY1 used.						

5.7.5	TABLE: Earthed accessible conductive part		N/A
Supply voltage (V).....:	--		—

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Clause	Requirement + Test	Result - Remark	Verdict
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
--	--	--	--
Supplementary Information:			

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

6.2.2	TABLE: Power source circuit classifications					P
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power ¹⁾ (W)	Time (S)	PS class
USB-C 5.0V 3.0A Output + to -	Normal operation	4.98	3.53	17.61	After 5s	PS2
USB-C 9.0V 2.22A Output + to -	Normal operation	9.00	2.9	25.16	After 5s	PS2
USB-C 12.0V 1.67A Output + to -	Normal operation	11.86	1.95	23.17	After 5s	PS2
PPS 3.3V 3.0A Output + to -	Normal operation	4.63	3.15	14.58	After 3s	PS1
PPS 5.9V 3.0A Output + to -	Normal operation	5.54	3.0	16.65	After 5s	PS2
PPS 11.0V 1.8A Output + to -	Normal operation	11.00	1.8	19.84	After 5s	PS2
USB-A 5.0V 3.0A Output + to -	Normal operation	5.04	3.15	15.89	After 5s	PS2

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Clause	Requirement + Test			Result - Remark		Verdict
USB-A 9.0V 2.0A Output + to -	Normal operation	9.08	2.19	19.90	After 5s	PS2
USB-A 12.0V 1.8A Output + to -	Normal operation	11.63	1.77	20.61	After 5s	PS2
Output + to -	Single fault (IC3 pin 1-2 SC) @	0	0	0	After 3s	PS1
Output + to -	Single fault (IC3 pin 3-4 SC) @	0	0	0	After 3s	PS1
Output + to -	Single fault (IC3 pin 3 OC) @	0	0	0	After 3s	PS1
Output + to -	Single fault (R11 SC)#	0	0	0	After 3s	PS1
Supplementary information:						
Supplementary information: Supplementary Information: All above test data are measured from the output connector of the switching power supply. See also Table B.4 for fault condition results description. Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3. @: Unit shut down immediately, recoverable, no damaged, no hazards. #: Fuse resistor FR1 opened immediately, no hazards.						

6.2.3.1	TABLE: Determination of Arcing PIS				P
Location		Open circuit voltage after 3 s (Vpk)	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No
All circuits except for output		--	--	--	Yes (declared)
Supplementary information:					
Supplementary information: All primary circuits such as components DB1 and T1 having soldered pins in mains circuit (>50V peak) and secondary parts connected directly to secondary winding where $V_p \times I_{rms}$ greater than 15 are considered as arcing PIS.					
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			P
Location		Operating and fault condition	Dissipate power (W)	Arcing PIS? Yes / No
All circuits		--	--	Yes (declared)
Supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict
<p>Abbreviation: SC= short circuit; OC= open circuit</p> <p>All primary and secondary circuit are considered as resistive PIS</p> <p>A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.</p> <p>If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.</p> <p>A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.</p> <p>All conductors and devices are considered as PIS.</p>			

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

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

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Clause	Requirement + Test		Result - Remark		Verdict	
5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements				P	
	Supply voltage (V).....:		90V/60Hz		264V/60Hz	—
Ambient temperature during test T_{amb} (°C).....:		See below		See below		—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
Model: LD-PQS20WEU 12.0Vdc 1.67A		Horizontal	Vertical	Horizontal	Vertical	--
Plug holder inside		61.5	63.4	54.3	56.5	120
C1 body		88.1	86.6	75.5	73.2	105
C2 body		93.7	97.4	90.2	89.5	105
L1 winding		90.6	88.7	80.3	78.4	130
T1 coil		101.7	103.2	98.7	96.6	110
T1 core		96.6	98.1	94.8	94.7	110
CY1 body		91.4	93.3	89.9	87.7	125
C8 body		95.4	98.4	95.9	92.8	105
PCB near BD1		91.5	90.1	70.9	71.5	130
PCB near IC1		109.8	111.2	106.5	108.7	130
IC3 body		96.6	98.7	94.4	92.2	110
PCB near IC2		116.5	119.1	110.1	115.4	130
Enclosure inside near T1 top		71.5	74.6	67.9	67.7	120
Enclosure outside near T1 top		65.4	70.6	64.1	61.9	77
Enclosure inside under T1 bottom		76.5	77.6	73.6	73.9	120
Enclosure outside near T1 bottom		67.8	66.4	67.0	65.1	77
Ambient		25.0	25.0	25.0	25.0	--
Model: LD-PQS20WEU 9.0Vdc 2.22A		Horizontal	Vertical	Horizontal	Vertical	--
Plug holder inside		64.0	67.2	57.5	56.9	120
C1 body		89.4	87.3	74.9	75.6	105
C2 body		100.1	100.6	89.8	92.1	105
L1 winding		94.8	91.4	77.2	79.9	130
T1 coil		103.0	105.8	100.0	98.9	110
T1 core		98.3	100.7	96.1	96.0	110
CY1 body		93.5	95.6	91.1	89.8	125
C8 body		97.5	100.7	98.8	95.6	105
PCB near BD1		93.1	92.4	72.0	73.1	130

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Clause	Requirement + Test				Result - Remark		Verdict
PCB near IC1	115.1	118.4	108.7	110.1	130		
IC3 body	97.2	100.3	95.3	94.7	110		
PCB near IC2	118.7	121.9	114.2	117.9	130		
Enclosure inside near T1 top	72.1	75.7	70.6	69.2	120		
Enclosure outside near T1 top	66.2	71.4	65.5	64.0	77		
Enclosure inside under T1 bottom	78.0	78.4	75.7	74.7	120		
Enclosure outside near T1 bottom	69.6	68.7	68.3	66.8	77		
Ambient	25.0	25.0	25.0	25.0	--		
Model: LD-PQS20WEU 5.9Vdc 3.0A	Horizontal	Vertical	Horizontal	Vertical	--		
Plug holder inside	62.3	61.2	55.9	55.4	120		
C1 body	80.1	80.0	69.8	68.4	105		
C2 body	96.9	95.8	90.6	88.4	105		
L1 winding	84.8	83.9	74.2	72.5	130		
T1 coil	106.4	105.4	104.4	101.0	110		
T1 core	100.5	100.3	99.5	95.6	110		
CY1 body	94.0	94.7	91.0	90.0	125		
C8 body	98.5	99.2	97.4	96.0	105		
PCB near BD1	82.4	82.0	67.2	65.4	130		
PCB near IC1	112.8	112.4	111.7	108.8	130		
IC3 body	102.1	101.6	100.8	98.3	110		
PCB near IC2	114.1	113.6	113.4	110.5	130		
Enclosure inside near T1 top	77.6	75.0	71.2	70.0	120		
Enclosure outside near T1 top	72.4	71.8	68.9	66.8	77		
Enclosure inside under T1 bottom	74.1	72.6	72.7	69.7	120		
Enclosure outside near T1 bottom	65.2	63.5	63.1	60.9	77		
Ambient	25.0	25.0	25.0	25.0	--		
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
Supplementary information:							
Supplementary information: * Temperature limit for TS1 of accessible enclosure according to Table 38 to be measured at normal ambient temperature.							
Note 1: The apparatus was submitted and evaluated for maximum manufacturer's recommended ambient (T _{ma}) of 25°C.							
Note 2: The temperatures were measured under the worse case normal mode defined in clause B.2.1.							

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Clause	Requirement + Test	Result - Remark	Verdict
Note 3. Temperature limits are calculated as follows: Winding components providing safety isolation: Class B → T _{max} = 120 - 10 = 110°C			

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
90	50	0.472	--	25.72	--	FR1	0.472	Model: LD-PQS20WEU USB-C Max. normal load 9.0V, 2.22A
90	60	0.479	--	25.80	--	FR1	0.479	
100	50	0.432	0.5	25.65	--	FR1	0.432	
100	60	0.436	0.5	25.67	--	FR1	0.436	
240	50	0.214	0.5	25.17	--	FR1	0.214	
240	60	0.221	0.5	25.22	--	FR1	0.221	
264	50	0.198	--	25.19	--	FR1	0.198	
264	60	0.206	--	25.25	--	FR1	0.206	
90	50	0.465	--	25.48	--	FR1	0.465	Model: LD-PQS20WEU USB-C Max. normal load 12.0V, 1.67A
90	60	0.470	--	25.52	--	FR1	0.470	
100	50	0.433	0.5	25.21	--	FR1	0.433	
100	60	0.436	0.5	25.24	--	FR1	0.436	
240	50	0.212	0.5	24.66	--	FR1	0.212	
240	60	0.218	0.5	24.69	--	FR1	0.218	
264	50	0.195	--	24.68	--	FR1	0.195	
264	60	0.200	--	24.71	--	FR1	0.200	
90	50	0.435	--	23.55	--	FR1	0.435	Model: LD-PQS20WEU PPS Max. normal load 5.9V, 3.0A
90	60	0.439	--	23.60	--	FR1	0.439	
100	50	0.392	0.5	23.32	--	FR1	0.392	
100	60	0.402	0.5	23.38	--	FR1	0.402	
240	50	0.195	0.5	22.75	--	FR1	0.195	
240	60	0.204	0.5	22.79	--	FR1	0.204	
264	50	0.181	--	22.75	--	FR1	0.181	
264	60	0.186	--	22.81	--	FR1	0.186	
90	50	0.461	--	25.12	--	FR1	0.461	Model: LD-PQS20WEU PPS Max. normal load 11.0V, 1.8A
90	60	0.465	--	25.15	--	FR1	0.465	
100	50	0.421	0.5	24.81	--	FR1	0.421	
100	60	0.425	0.5	24.85	--	FR1	0.425	

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Clause		Requirement + Test				Result - Remark		Verdict
240	50	0.211	0.5	24.30	--	FR1	0.211	
240	60	0.217	0.5	24.34	--	FR1	0.217	
264	50	0.194	--	24.32	--	FR1	0.194	
264	60	0.197	--	24.36	--	FR1	0.197	
90	50	0.381	--	20.08		FR1	0.381	Model: LD-PQS20WEU USB-A+USB-C PPS Max. normal load 5.0V, 3.0A
90	60	0.387	--	20.12		FR1	0.387	
100	50	0.351	0.5	20.04		FR1	0.351	
100	60	0.359	0.5	20.09		FR1	0.359	
240	50	0.175	0.5	19.58		FR1	0.175	
240	60	0.180	0.5	19.61		FR1	0.180	
264	50	0.161	--	19.68		FR1	0.161	
264	60	0.163	--	19.73		FR1	0.163	
Supplementary information:								
The maximum measured current under rated voltage did not exceed 110% of the rated current.								

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Clause	Requirement + Test				Result - Remark	
B.3, B.4	TABLE: Abnormal operating and fault condition tests					P
Ambient temperature T_{amb} (°C)..... :					25°C, if not specified	—
Power source for EUT: Manufacturer, model/type, output rating.. :					--	—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
Test model: LD-PQS20WEU 9.0Vdc 2.22A						
Output	OL	264	3h30min	FR1	0.206 to 0.213 to 0.220 to 0.02	Output overload to 2.38A and unit shutdown at 2.4A, recoverable, no damage, no hazard. T1 winding:104.8°C, T1 core: 100.6°C, Enclosure outside near T1 top:68.2°C, Enclosure outside near T1 bottom:71.2°C, Ambient:25.0°C Output terminal: Uout= 9.0Vdc Max. Touch current: Output "+/-" to "earth": 0.12mApeak Plastic enclosure to earth: 0.02mApeak
T1	OL	264V	3h40min	FR1	0.206 to 0.215 to 0.223 to 0.02	Output overload to 0.2A and unit shutdown at 0.3A, recoverable, no damage, no hazard. T1 winding:107.3°C, T1 core: 104.2°C, Enclosure outside near T1 top:70.4°C, Enclosure outside near T1 bottom:71.8°C, Ambient:25.0°C Output terminal: Uout= 9.0Vdc Max. Touch current: Output "+/-" to "earth": 0.12mApeak Plastic enclosure to earth: 0.02mApeak
USB-C port	SC	264	10min	FR1	0.02	Unit shutdown immediately,

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Clause	Requirement + Test				Result - Remark	Verdict
						no damage, no hazard. Output terminal: Uout= 0Vdc. Touch current: Output "+/-" to "earth": 0.12mApeak Plastic enclosure to earth: 0.02mApeak
USB-A port	SC	264	10min	FR1	0.02	Unit shutdown immediately, no damage, no hazard. Output terminal: Uout= 0Vdc. Touch current: Output "+/-" to "earth": 0.12mApeak Plastic enclosure to earth: 0.02mApeak
BD1 pin AC to +	SC	264	1s	FR1	0	Fuse resistor FR1 opened immediately, replay 10 times, no damaged, no hazard. Output terminal: Uout= 0Vdc. Touch current: Output "+/-" to "earth": 0.15mApeak Plastic enclosure to earth: 0.02mApeak
C1	SC	264	1s	FR1	0	Fuse resistor FR1 opened immediately, replay 10 times, no damaged, no hazard. Output terminal: Uout= 0Vdc. Touch current: Output "+/-" to "earth": 0.15mApeak Plastic enclosure to earth: 0.02mApeak
R11	SC	264	1s	FR1	0	Fuse resistor FR1 opened immediately, replay 10 times, no damaged, no hazard. Output terminal: Uout= 0Vdc. Touch current: Output "+/-" to "earth": 0.15mApeak Plastic enclosure to earth: 0.02mApeak
IC1 pin 1-8	SC	264	1s	FR1	0	Fuse resistor FR1 opened immediately, replay 10 times, no damaged, no hazard. Output terminal: Uout= 0Vdc.

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Clause	Requirement + Test				Result - Remark	Verdict
						Touch current: Output "+/-" to "earth": 0.15mA _{peak} Plastic enclosure to earth: 0.02mA _{peak}
IC3 pin 1-2	SC	264	10min	FR1	0.02	Unit shutdown immediately, no damage, no hazard. Output terminal: U _{out} = 0V _{dc} . Touch current: Output "+/-" to "earth": 0.12mA _{peak} Plastic enclosure to earth: 0.02mA _{peak}
IC3 pin 3-4	SC	264	10min	FR1	0.02	Unit shutdown immediately, no damage, no hazard. Output terminal: U _{out} = 0V _{dc} . Touch current: Output "+/-" to "earth": 0.12mA _{peak} Plastic enclosure to earth: 0.02mA _{peak}
IC3 pin 3	OC	264	10min	FR1	0.02	Unit shutdown immediately, no damage, no hazard. Output terminal: U _{out} = 0V _{dc} . Touch current: Output "+/-" to "earth": 0.12mA _{peak} Plastic enclosure to earth: 0.02mA _{peak}
T1 pin 3-1	SC	264	10min	FR1	0.02	Unit shutdown immediately, no damage, no hazard. Output terminal: U _{out} = 0V _{dc} . Touch current: Output "+/-" to "earth": 0.12mA _{peak} Plastic enclosure to earth: 0.02mA _{peak}
T1 pin 5-9	SC	264	10min	FR1	0.02	Unit shutdown immediately, no damage, no hazard. Output terminal: U _{out} = 0V _{dc} . Touch current: Output "+/-" to "earth": 0.12mA _{peak} Plastic enclosure to earth: 0.02mA _{peak}
T1 pin 7-6	SC	264	10min	FR1	0.02	Unit shutdown immediately, no damage, no hazard.

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Clause	Requirement + Test				Result - Remark	
						Output terminal: Uout= 0Vdc. Touch current: Output “+/-” to “earth”: 0.12mApeak Plastic enclosure to earth: 0.02mApeak
IC2 pin 1-8	SC	264	10min	FR1	0.02	Unit shutdown immediately, no damage, no hazard. Output terminal: Uout= 0Vdc. Touch current: Output “+/-” to “earth”: 0.12mApeak Plastic enclosure to earth: 0.02mApeak
C8	SC	264	10min	FR1	0.02	Unit shutdown immediately, no damage, no hazard. Output terminal: Uout= 0Vdc. Touch current: Output “+/-” to “earth”: 0.12mApeak Plastic enclosure to earth: 0.02mApeak
Supplementary information:						
SC=short circuit, OL=overload, OC=open circuit. Test table is provided to record abnormal for all applicable energy sources including Thermal burn injury. Column “Abnormal/Fault.” Specify if test condition by indicating “Abnormal” then the condition for a Clause B.3 test. Specify if test condition by indicating “Single Fault” then the condition for Clause B.4. 1) The overloaded condition is applied according to annex G.5.3.3. Winding Limit for Transformer: 175-10=165°C. Enclosure outside: TS2=87°C. 2) The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; In addition all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions. 3) The test result showed no Class 1 or 2 energy source become Class 3 level during and after single fault condition. 4) All tests which current fuse opened were repeated with each source of fuse and same result observed. 5) Output voltage measured under abnormal or Single fault conditions were not increase by more than 10% or 3V of its rated output voltage under normal operating condition.						

M.3	TABLE: Protection circuits for batteries provided within the equipment		N/A
Is it possible to install the battery in a reverse polarity position?.....:		--	—
Equipment Specification	Charging		
	Voltage (V)	Current (A)	
	--	--	
Manufacturer/type	Battery specification		

IEC 62368-1							
Clause	Requirement + Test				Result - Remark		Verdict
	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
USB-C 5.0V 3.0A Output + to -	Normal operation	5.13	After 5s	3.53	8.0	17.61	100

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
USB-C 9.0V 2.22A Output + to -	Normal operation	9.22	After 5s	2.53	8	22.75	100
USB-C 12.0V 1.67A Output + to -	Normal operation	12.37	After 5s	1.96	8	23.17	100
PPS 3.3V 3.0A Output + to -	Normal operation	5.16	After 3s	3.15	8	14.58	100
PPS 5.9V 3.0A Output + to -	Normal operation	6.13	After 5s	3.0	8	16.65	100
PPS 11.0V 1.8A Output + to -	Normal operation	11.12	After 5s	1.8	8	19.84	100
USB-A 5.0V 3.0A Output + to -	Normal operation	5.12	After 5s	3.15	8	15.89	100
USB-A 9.0V 2.0A Output + to -	Normal operation	9.23	After 5s	2.19	8	19.90	100
USB-A 12.0V 1.8A Output + to -	Normal operation	12.20	After 5s	1.77	8	20.61	100
Output + to -	Single fault (IC3 pin 1-2 SC) @	0	After 5s	0	8	0	100
Output + to -	Single fault (IC3 pin 3-4 SC) @	0	After 5s	0	8	0	100
Output + to -	Single fault (IC3 pin 3 OC) @	0	After 5s	0	8	0	100
Output + to -	Single fault (R11 SC)#	0	After 5s	0	8	0	100
Supplementary Information: SC = short circuit; OC = open circuit.							

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
#: indicated fuse resistor FR1 opened, no hazard. @: indicated the unit shut down, recoverable, no hazard.			

T.2, T.3, T.4, T.5	TABLE: Steady force test						P
Location/Part	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation	
Enclosure top, closed to transformer (T.4)	Plastics	1)	--	100	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Enclosure side (T.4)	Plastics	1)	--	100	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Enclosure bottom, closed to transformer (T.4)	Plastics	1)	--	100	5	Enclosure remained intact, no crack/ opening developed. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Internal components near the gap between primary and secondary (T.2)	--	--	--	10	5	No reduction the clearances and creepage distances	
Supplementary information:							
1). See appended table 4.1.2. Each source of enclosure in table 4.1.2 was applied and passed the relevant tests.							

IEC 62368-1				
Clause	Requirement + Test		Result - Remark	Verdict
T.6, T.9	TABLE: Impact test			N/A
Location/Part	Material	Thickness (mm)	Height (mm)	Observation
--	--	--	--	--
Supplementary information:				

T.7	TABLE: Drop test				P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
Three sides of enclosure	1)	1)	1000	After the drop test, enclosure remained intact, no cracking/opening developed in the enclosure joint. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Supplementary information:					
1). See appended table 4.1.2. Each source of enclosure in table 4.1.2 was applied and passed the relevant tests.					

T.8	TABLE: Stress relief test					P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Enclosure	1)	1)	88	7	Enclosure remained intact, no cracking/opening developed in the enclosure joint. Internal ES3, TS3 were not accessible after test. No insulation breakdown.	
Supplementary information:						
1). See appended table 4.1.2.						
Each source of enclosure and mylar sheet in table 4.1.2 was applied and passed the relevant tests.						

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)		

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
--	--	--	--
Supplementary information:			

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

4.1.2	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾	
Plastic Enclosure	SABIC JAPAN L L C	945(GG)	V-0, 120 °C, min. thickness: 1.5mm	UL 94, UL 746C	UL E207780	
Plug holder, ISOD plug and pin sleeve	SABIC JAPAN L L C	945(GG)	V-0, 120 °C	UL 94, UL 746C	UL E207780	
PCB	XINFENGKANG DA ELECTRO NICS CO LTD	XFKD-2	Rated V-0, 130 °C	UL 796	UL E473511	
(Alternative)	Enping Guan Quan Electronics Co Ltd	GQ968(ASP1)	Rated V-0, 130 °C	UL 796, UL 94	UL E202354	
(Alternative)	Interchangeable	Interchangeable	Rated V-0, 130°C	UL 796	UL	
Fuse resistor (FR1)	SHENZHEN KAYOCOTA Electronics CO.,Ltd	FRKNP-1WS	2.2R, 1W	IEC/EN 62368- 1 UL 1412	VDE 40043957 UL E318056	
-Heat shrinkable tube	DONGGUAN LING FREE HARDWARE PLASTICS PRODUCT CO LTD	LFST-002	Min. 125°C, min. 600V, VW-1	UL 224	UL E352366	
(Alternative)	Interchangeable	Interchangeable	Min. 125°C, min. 600V, VW- 1	UL 2353	UL	
IC (IC1)	Dongguan Sansi Electronic Technology Co., Ltd	FT8493A	Min. 750V, min. 1.2ohm.	IEC/EN 62368-1	Test with appliance	
(Alternative)	Interchangeable	Interchangeable	Min. 750V, min. 1.2ohm.	IEC/EN 62368-1	Test with appliance	
Bridge Diodes (BD1)	SHENZHENXI NGHUANGQIE ELECTRONICC O.,LTD	FBS210	Min. 2A, Min. 1000V	IEC/EN 62368-1	Tested with appliance	
(Alternative)	Interchangeable	Interchangeable	Min 2A, Min. 1000V	IEC/EN 62368-1	Tested with appliance	
Electrolytic	Shenzhen	400V15UF	Each 15μF,	IEC/EN 62368-1	Tested with	

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Capacitor (C1, C2)	Xiaojin Technology Co., Ltd		min. 400 V, min.105°C		appliance
(Alternative)	Interchangeable	Interchangeable	Each 15μF, min. 400 V, min.105°C	IEC/EN 62368-1	Tested with appliance
Transformer (T1)	Shenzhen Zhiqin Electronic Co. , Ltd.	EE1710	Class B	Applicable parts of IEC/EN 62368-1 and according to IEC 60085	Tested with appliance
-Winding	GUANG ZHOU WANBO ENAMELLED WIRE CO LTD	XUEW-130	130°C	UL 1446	UL E167402
(Alternative)	Interchangeable	Interchangeable	Min.130°C	UL 1446	UL
-Bobbin	CHANG CHUN PLASTICS CO LTD	T375J(G5)(G6)	Phenolic, V-0, 150°C, min. 0.71mm thickness.	UL 94 UL 746C	UL E59481
-Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	CT-280B	130°C	UL 510A	UL E165111
-Triple insulation wire	SHANG HAI XIANG XIANG ELECTRON CO. , LTD	TKW-B	130°C	IEC/EN 62368-1 UL 2353	VDE 40026588 UL E308908
- Varnish	Tianyi Insulation Material (Shenzhen) Co Ltd	MG209-1	Min. 130°C	UL 1446	UL E527258
- Tube	DONGGUAN LING FREE HARDWARE PLASTICS PRODUCT CO	LING FREE PTFE TUBE	Min. 200°C, min. 300V, VW -1	UL 244	UL E352366
Opto-coupler (IC3)	SHENZHEN ORIENT COMPONENTS CO.,LTD.	OR1008,OR1009 for VDE, OR-1009, OR-1008 for UL	Dti>=0.4mm, ext. cr.>=8.0mm, ext. cl.>=8.0mm, min. 110°C	IEC/EN 60747-5-5 UL 1577	VDE 40029733 UL E323844
(Alternative)	Everlight	EL1018V,	Dti>=0.4mm,	IEC/EN 60747-	VDE

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	Electronics Co., Ltd.	EL1019V for VDE, EL1018H, EL1019H for UL	ext. cr.≥7.6mm, ext. cl.≥7.6mm, min. 110°C	5-5 UL 1577	40028391 UL E214129
(Alternative)	NingBo Qunxin Microelectronics Co., LTD	QX10yy-UNY-WVZZ, QX10xx-UMy-w	Dti>=0.4mm, ext. cr.≥7.6mm, ext. cl.≥7.6mm, min. 110°C	IEC/EN 60747-5-5 UL 1577	VDE 40051490
Bridge-Capacitor (CY1)	DongGuan QinHong(QNR) Electronic Technology Co LTD	CT7	Max. 470pF, Min. 250Vac, 125°C, Y1 type.	IEC/EN/UL 60384-14	VDE 40046285 UL E488626
(Alternative)	DONGGUAN CITY DAFU ELECTRONICS TECHNOLOGY CO.,LTD	CT7 Y1	Max. 470pF, Min. 250Vac, 125°C, Y1 type.	IEC/EN/UL 60384-14	VDE 40041523 UL E465278
Line Choke (L1)	Shenzhen Dengfeng Electrion Technology Co., Ltd	4701UH	Min. 470uH, 130°C	IEC/EN 62368-1	Tested with appliance
- Winding	GUANG ZHOU WANBO ENAMELLED WIRE CO LTD	XUEW-130	130°C	UL 1446	UL E167402
(Alternative)	Interchangeable	Interchangeable	130°C	UL 1446	UL
-Heat shrinkable tube	DONGGUAN LING FREE HARDWARE PLASTICS PRODUCT CO LTD	LFST-002	Min. 125°C, min. 600V, VW-1	UL 224	UL E352366
(Alternative)	Interchangeable	Interchangeable	Min. 125°C, min. 600V, VW-1	UL 2353	UL
Supplementary information: License available upon request.					
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

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

IEC62368_1E - 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			
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	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".		
	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		
1	Modification to Clause 3 .		
3.3.19	Sound exposure <i>Replace 3.3.19 of IEC 62368-1 with the following definitions:</i>		

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.19.1	<p>momentary exposure level, MEL</p> <p>metric for estimating 1 s sound exposure level from the HD 483-1 S2 test signal applied to both channels, based on EN 50332-1:2013, 4.2.</p> <p>Note 1 to entry: MEL is measured as A-weighted levels in dB.</p> <p>Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.</p>		N/A
3.3.19.3	<p>sound exposure, E</p> <p>A-weighted sound pressure (p) squared and integrated over a stated period of time, T</p> <p>Note 1 to entry: The SI unit is 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		



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.6	Safeguards against acoustic energy sources Replace 10.6 of IEC 62368-1 with the following:		N/A
10.6.1.1	Introduction 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: <ul style="list-style-type: none"> – is designed to allow the user to listen to audio or audiovisual content / material; and – uses a listening device, such as headphones or earphones that can be worn in or on or around the ears; and – has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.). EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment. Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3. NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360. 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. 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: <ul style="list-style-type: none"> – professional equipment; NOTE 3 Professional equipment is equipment sold	No such part in this equipment	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.</p> <p>– hearing aid equipment and other devices for assistive listening; – the following type of analogue personal music players:</p> <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> <p>– a player while connected to an external amplifier that does not allow the user to walk around while in use.</p> <p>For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply.</p> <p>The relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>		
10.6.1.2	<p>Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</p> <p>The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). 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>	Added. The equipment is a low power AC Adapter, it does not incorporate only non-intentional radiators, but does not contain radio transmitters; the typical usage, installation and physical characteristics make the equipment inherently compliant with all applicable EMF exposure levels (EN 62479:2010 clause 4.1 Route A).	N/A
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</p>	No such part in this equipment	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>(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.</p> <p>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>		
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. – 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 		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	interface) when playing the fixed “programme simulation noise” described in EN 50332-1. – The RS1 limits will be updated for all devices as per 10.6.3.2.		
10.6.2.3	RS2 limits (to be superseded, see 10.6.3.3) RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or when the combination of player and listening device is known by other means such as setting or automatic 130 detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 100 dB(A) when playing the fixed “programme simulation noise” as described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed “programme simulation noise” as described in EN 50332-1.		N/A
10.6.2.4	RS3 limits RS3 is a class 3 acoustic energy source that exceeds RS2 limits.		N/A
10.6.3	Classification of devices (new)		N/A
10.6.3.1	General Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given below.		N/A
10.6.3.2	RS1 limits (new) RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 80 dB when playing the fixed “programme simulation noise” described in EN 50332-1.		N/A

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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 ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1.</p>		
10.6.3.3	<p>RS2 limits (new)</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 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.</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 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.</p>		N/A
10.6.4	Requirements for maximum sound exposure		N/A
10.6.4.1	<p>Measurement methods</p> <p>All volume controls shall be turned to maximum during tests.</p> <p>Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.</p>		N/A
10.6.4.2	<p>Protection of persons</p> <p>Except as given below, protection requirements for parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3.</p> <p>NOTE 1 Volume control is not considered a safeguard.</p> <p>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</p>		N/A

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	<p>on the equipment, or on the packaging, or in the instruction manual.</p> <p>Alternatively, the instructional safeguard may be given through the equipment display during use.</p> <p>The elements of the instructional safeguard shall be as follows:</p> <div style="text-align: center;">  </div> <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	General requirements		N/A
	Personal music players shall give the warnings as		

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>provided below when tested according to EN 50332-3, using the limits from this clause.</p> <p>The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the safeguards. This allows the users to be informed in a method that best meets their physical capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration.</p> <p>The personal music player shall be supplied with easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.</p>		
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</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>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>		
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	<p>Corded listening devices with analogue input</p> <p>With 94 dB LAeq 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 LAeq,T 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 		N/A

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Clause	Requirement + Test				Result - Remark		Verdict																																																												
	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 $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.																																																																		
10.6.6.4	Measurement method <i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i>						N/A																																																												
3	Modification to the whole document																																																																		
	Delete all the “country” notes in the reference document according to the following list: <table><tr><td>0.2.1</td><td>Note 1 and 2</td><td>1</td><td>Note 4 and 5</td><td>3.3.8.1</td><td>Note 2</td></tr><tr><td>3.3.8.3</td><td>Note 1</td><td>4.1.15</td><td>Note</td><td>4.7.3</td><td>Note 1 and 2</td></tr><tr><td>5.2.2.2</td><td>Note</td><td>5.4.2.3.2.2 Table 12</td><td>Note c</td><td>5.4.2.3.2.4</td><td>Note 1 and 3</td></tr><tr><td>5.4.2.3.2.4 Table 13</td><td>Note 2</td><td>5.4.2.5</td><td>Note 2</td><td>5.4.5.1</td><td>Note</td></tr><tr><td>5.4.10.2.1</td><td>Note</td><td>5.4.10.2.2</td><td>Note</td><td>5.4.10.2.3</td><td>Note</td></tr><tr><td>5.5.2.1</td><td>Note</td><td>5.5.6</td><td>Note</td><td>5.6.4.2.1</td><td>Note 2 and 3 and 4</td></tr><tr><td>5.6.8</td><td>Note 2</td><td>5.7.6</td><td>Note</td><td>5.7.7.1</td><td>Note 1 and Note 2</td></tr><tr><td>8.5.4.2.3</td><td>Note</td><td>10.2.1 Table 39</td><td>Note 3 and 4 and 5</td><td>10.5.3</td><td>Note 2</td></tr><tr><td>10.6.4</td><td>Note 3</td><td>F.3.3.6</td><td>Note 3</td><td>Y.4.1</td><td>Note</td></tr><tr><td>Y.4.5</td><td>Note</td><td></td><td></td><td></td><td></td></tr></table>						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					N/A
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Y.4.5	Note																																																																		
4	Modification to Clause 1						P																																																												
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>						P																																																												
5	Modification to 4.Z1						N/A																																																												

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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		N/A
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>	No external circuits.	N/A
7	Modification to 10.2.1		N/A
10.2.1	<p>Add the following to ^{c)} and ^{d)} in table 39:</p> <p>For additional requirements, see 10.5.1.</p>	No such radiation from the equipment.	N/A
8	Modification to 10.5.1		N/A

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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		N/A
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		P

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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		P
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: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"</p>	Class II equipment	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	United Kingdom To the end of the subclause the following is added: 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
5.2.2.2	Denmark After the 2nd paragraph add the following: 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.	No high touch current.	N/A
5.4.11.1 and Annex G	Finland and Sweden To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either <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. 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 <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), and <ul style="list-style-type: none"> • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 	No TNV circuits.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>kV.</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; the additional testing shall be performed on all the test specimens as described in EN 60384-14; <p>the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</p>		
5.5.2.1	<p>Norway</p> <p>After the 3rd paragraph the following is added:</p> <p>Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).</p>		N/A
5.5.6	<p>Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.</p>	No such resistors.	N/A
5.6.1	<p>Denmark</p> <p>Add to the end of the subclause</p> <p>Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment.</p> <p><i>Justification:</i></p> <p>In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.4.2.1	Ireland and United Kingdom After the indent for pluggable equipment type A , the following is added: – the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.		N/A
5.6.4.2.1	France After the indent for pluggable equipment type A , the following is added: – in certain cases, the protective current rating of the circuit supplied from the mains is taken as 20 A instead of 16 A.		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm ² to 1,5 mm ² in cross-sectional area.		N/A
5.6.8	Norway To the end of the subclause the following is added: Equipment connected with an earthed mains plug is classified as class I equipment . See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.		N/A
5.7.6	Denmark To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high protective conductor current.	N/A
5.7.6.2	Denmark To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .		N/A
5.7.7.1	Norway and Sweden To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of	Not such system.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>“Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)”</p> <p>NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplede utstyr – og er tilkoplede 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:</p> <p>“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>		

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.3	United Kingdom Add the following after the 2 nd dash bullet in 3 rd paragraph: 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.		N/A
B.3.1 and B.4	Ireland and United Kingdom The following is applicable: 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	Considered. Use an external protective device rated 32A during single fault condition test, also see test report for details	P
G.4.2	Denmark To the end of the subclause the following is added: 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. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a 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. 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. Other current rating socket outlets shall be in		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>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
G.7.1	<p>United Kingdom</p> <p>To the first paragraph the following is added:</p> <p>Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc. (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations.</p> <p>NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		N/A
G.7.1	<p>Ireland</p> <p>To the first paragraph the following is added:</p> <p>Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard</p>		N/A

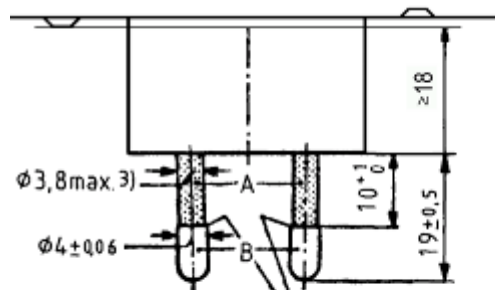
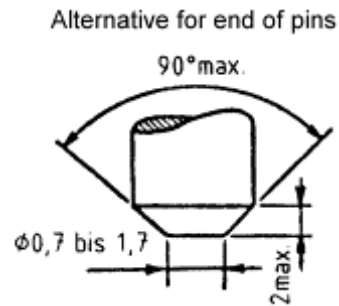
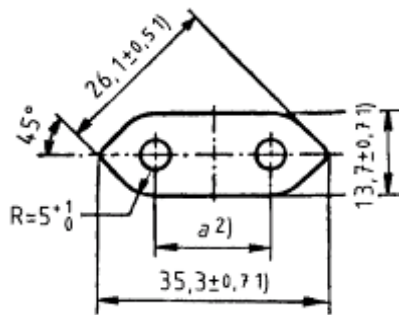
IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.2	Ireland and United Kingdom To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm ² is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		
10.5.2	Germany The following requirement applies: 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. <i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de	No CRT within the equipment.	N/A

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

ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)		
	Type of flexible cord	Code designations	
		IEC	CENELEC
	PVC insulated cords		
	Flat twin tinsel cord	60227 IEC 41	H03VH-Y
	Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F
	Ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 53	H05VV-F H05VVH2-F
	Rubber insulated cords		
	Braided cord	60245 IEC 51	H03RT-F
	Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F
	Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F
	Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F
	Cords having high flexibility		
	Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H
	Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H
	Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H
	Cords insulated and sheathed with halogen-free thermoplastic compounds		
	Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-F
	Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-F
			N/A

Appliance combined with European plug portion test

According to EN 50075:1990 - standard sheet and IEC 83 - standard C5

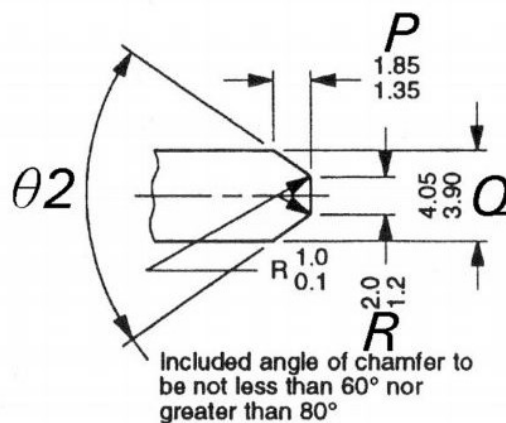
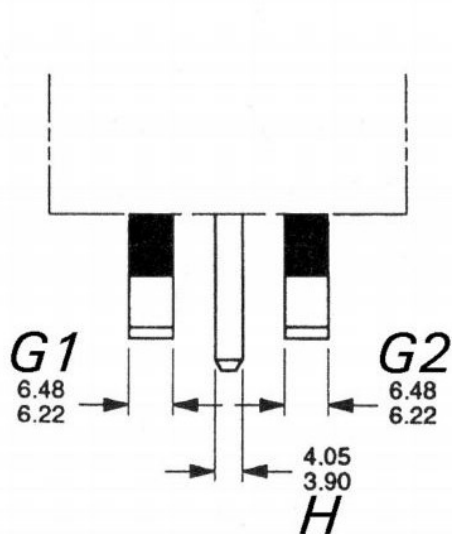
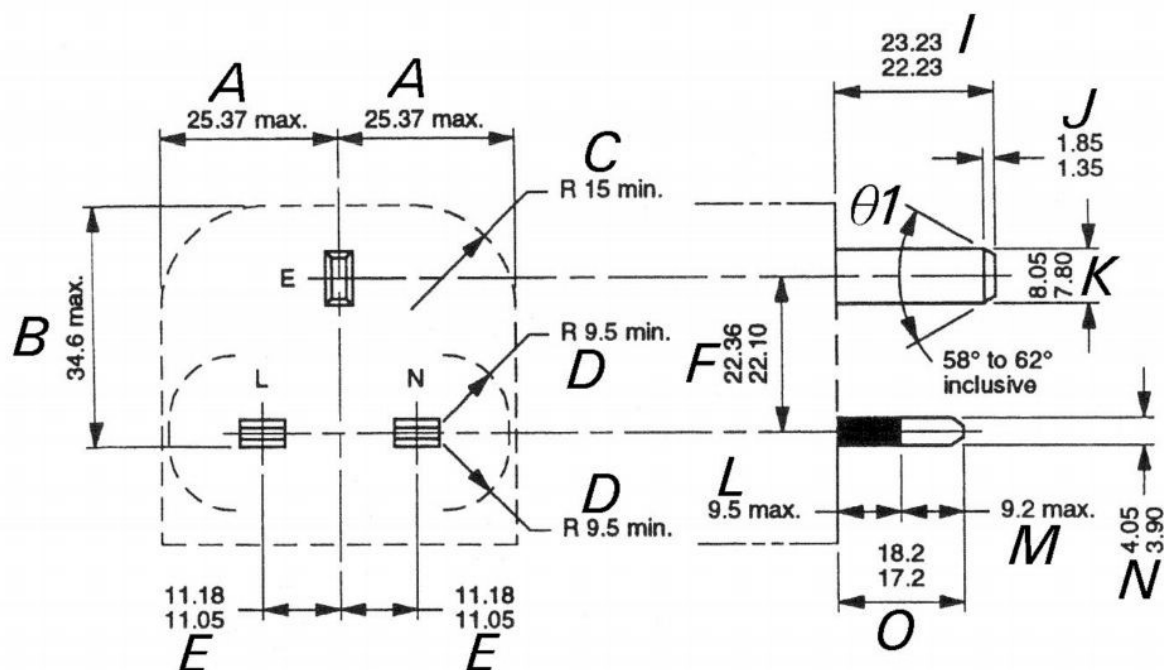


The edges of the metal parts shall be either chamfered or rounded off

7	Dimensions			P
	Plugs shall comply with Standard Sheet 1	(see attached drawing)		--
	Between two pins (pin base)	18.0 - 19.2 mm	19.01 mm	P
	Between two pins (pin top)	17.0 - 18.0 mm	17.42 mm	P
	Diameter of pin (metallic part)	4 ± 0.06 mm	4.03 mm	P
	Diameter of pin (pin base)	max. 4.0 mm	3.81 mm	P
	Diameter of pin (middle part)	max. 3.8 mm	3.28 mm	P
	Pin length	19 ± 0.5 mm	19.19 mm	P
	Length of pin except metal part	10 +1/0 mm	10.51 mm	P
	Shape of pin top	Round shape		P
	Length of plug base	35.3 ± 0.7 mm	35.34 mm	P
	Width of plug base	13.7 ± 0.7 mm	13.38 mm	P
	Diagonal dimension of plug base	26.1 ± 0.5 mm	26.08 mm	P
	within a distance of 18mm	≥ 18 mm	18.84 mm	P
	Angle	45°	45 °	P
	Radius	R 5 -0, +1 mm	5.89 mm	P

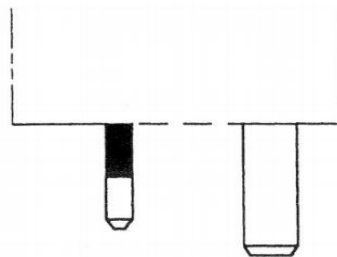
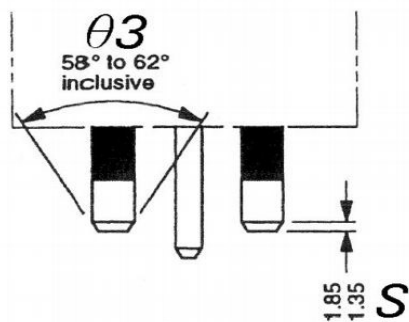
British plug portion test

Interchangeable UK plug portion for switching power adapter

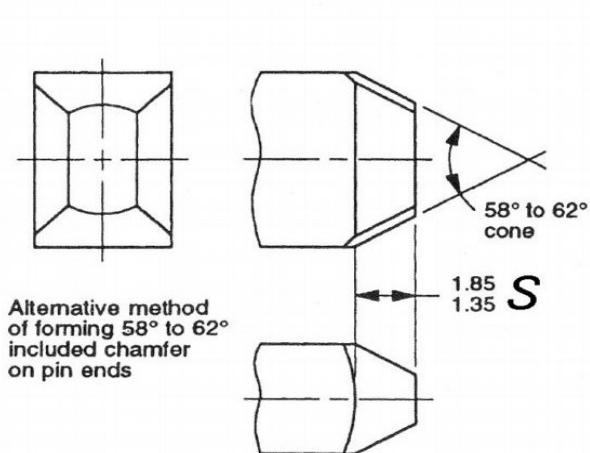


Pin end chamfer detail

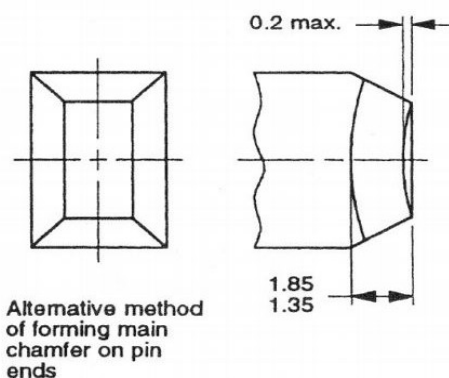
All dimensions are in millimetres.



Permitted additional chamfers on L and N pins
(if additional chamfer is used it has to be on both pins)



Alternative method
of forming 58° to 62°
included chamfer
on pin ends



Alternative method
of forming main
chamfer on pin
ends

All dimensions are in millimetres.

NOTE 1. External edges of pins are to be free from burrs or sharp edges and may have a radius not exceeding 1 mm.

NOTE 2. The surfaces of pins are to be flat within the specified tolerances.

Appendix 1 (Refer to 12.2)

13A Plug Portion Dimensions

Linear Dimensions (mm)	Measurement			Limit	Verdict
	Sample A	Sample B	Sample C		
A	25.12	24.88	24.66	25.37 max.	P
B	32.93	32.44	32.22	34.6 max.	P
C	1)	1)	1)	15 min.	P
D	11.47	11.50	11.52	9.5 min.	P
E (from L to E)	11.11	11.13	11.06	11.05 - 11.18	P
(from N to E)	11.12	11.11	11.08		P
F	22.18	22.20	22.31	22.10 - 22.36	P
G1	6.31	6.30	6.32	6.22 – 6.48	P
G2	6.34	6.32	6.32	6.22 – 6.48	P
H	3.98	3.97	3.98	3.90 – 4.05	P
I	22.38	22.43	23.44	22.23 – 23.23	P
J	1.69	1.71	1.72	1.35 – 1.85	P
K	7.98	7.96	7.98	7.80 - 8.05 (7.75 - 8.05 For ISOD)	P
L (line)	8.81	8.82	8.82	9.5 max.	P
(neutral)	8.80	8.81	8.80		P
M (line)	8.93	8.91	8.83	9.2 max.	P
(neutral)	8.94	8.91	8.93		P
N (line) (sleeve)	4.00	4.01	3.99	3.90 – 4.05	P
(neutral) (sleeve)	4.00	4.01	3.99		P
O (line)	17.79	17.73	17.75	17.20 – 18.20	P
(neutral)	17.75	17.73	17.85		P
P (line)	1.75	1.74	1.73	1.35 – 1.85	P
(neutral)	1.60	1.64	1.63		P
(earth)	1.62	1.61	1.60		P

<u>Linear Dimensions (mm)</u>	<u>Measurement</u>			<u>Limit</u>	<u>Verdict</u>
	<u>Sample A</u>	<u>Sample B</u>	<u>Sample C</u>		
Q (line) (metal)	4.01	3.97	3.96	3.90 – 4.05	P
(neutral) (metal)	3.97	3.97	3.96		P
(earth) (metal)	--	--	--		N/A
R (line)	1.75	1.79	1.71	1.2 – 2.0	P
(neutral)	1.76	1.79	1.72		P
(earth)	1.87	1.88	1.87		P
S (line/ neutral)	1.73 / 1.56	1.74 / 1.74	1.73 / 1.73	1.35 – 1.85	P
θ1	61.22°	61.25°	60.04°	58°– 62°	P
θ2 (line/ neutral)	71.45° / 71.35°	71.36° / 71.56°	71.08° / 71.18°	60°– 80°	P
(earth)	63.25°	62.33°	62.45°		P
θ3	60.21°	60.32°	60.53°	58°– 62°	P

¹⁾ The outline of the plug is different from shown in figure, but it can insert the gauge fully with a force less than 10 N. So the dimension C is not applicable for the case.

For solid insulated shutter opening device

<u>Linear Dimensions (mm)</u>	<u>Measurement</u>			<u>Limit</u>	<u>Verdict</u>
	<u>Sample A</u>	<u>Sample B</u>	<u>Sample C</u>		
T	8.01	7.92	7.96	7.75 – 8.05	P
U	3.95	3.96	3.95	3.90 – 4.05	P
V (E → L)	0.11	0.12	0.11	0.15 max.	P
(E → N)	0.11	0.11	0.11	0.15 max.	P
W (E → Top)	0.10	0.10	0.10	0.15 max.	P
(E → L&N)	0.10	0.10	0.10	0.15 max.	P

Photos



Figure 1 External view for UK plug

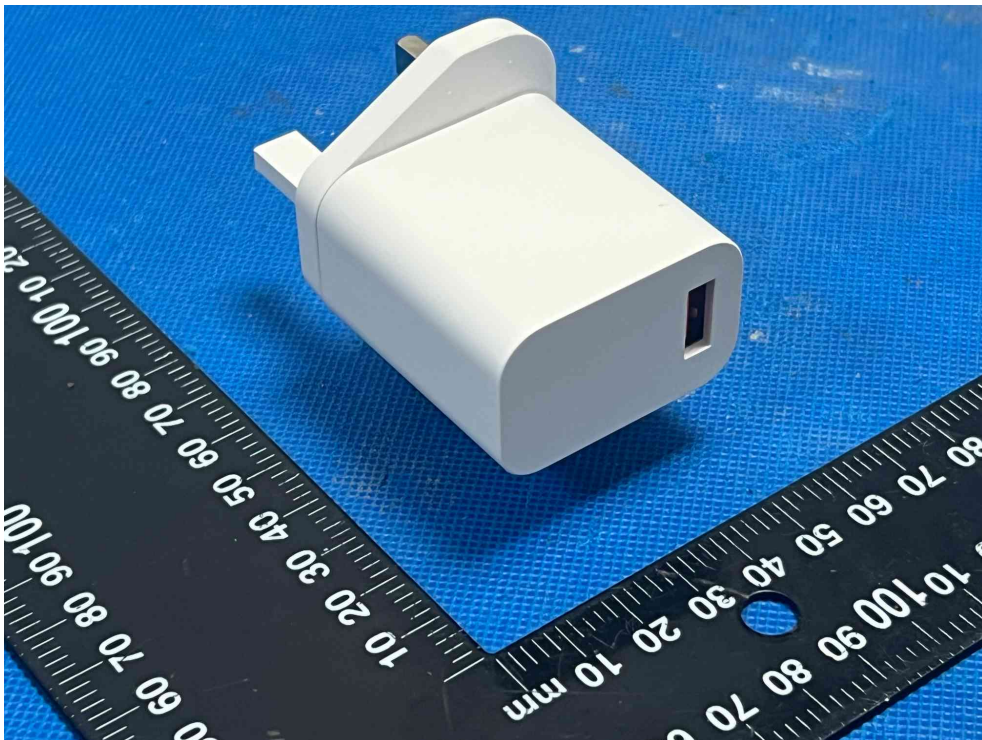


Figure 2 External view for UK plug USB-A

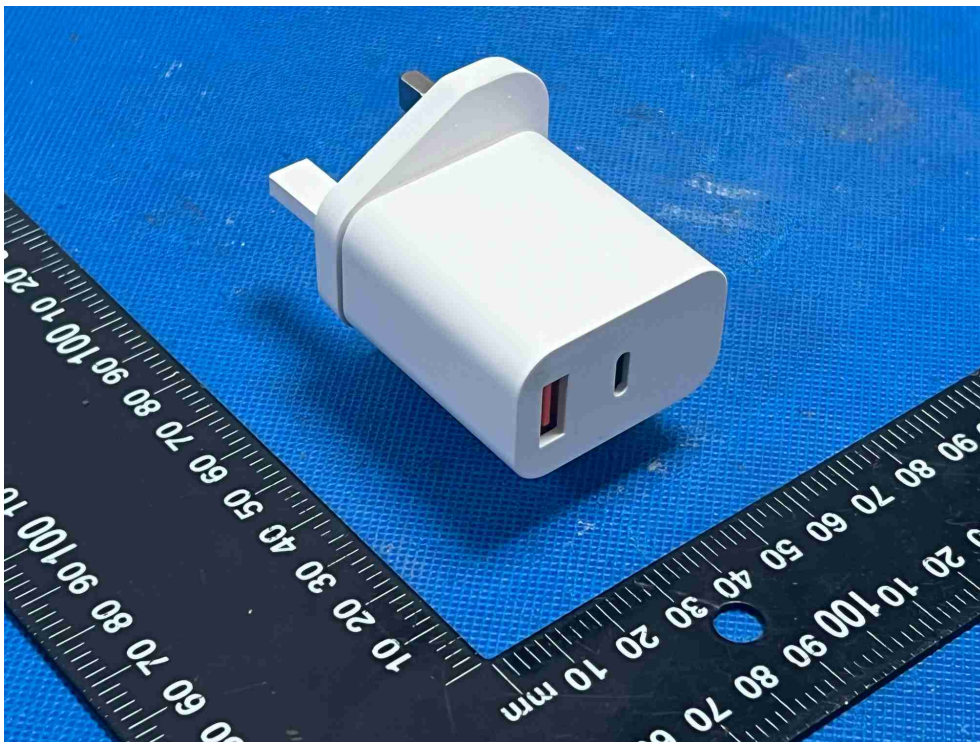


Figure 3 External view for UK plug USB-A+USB-C



Figure 4 External view for UK plug USB-C

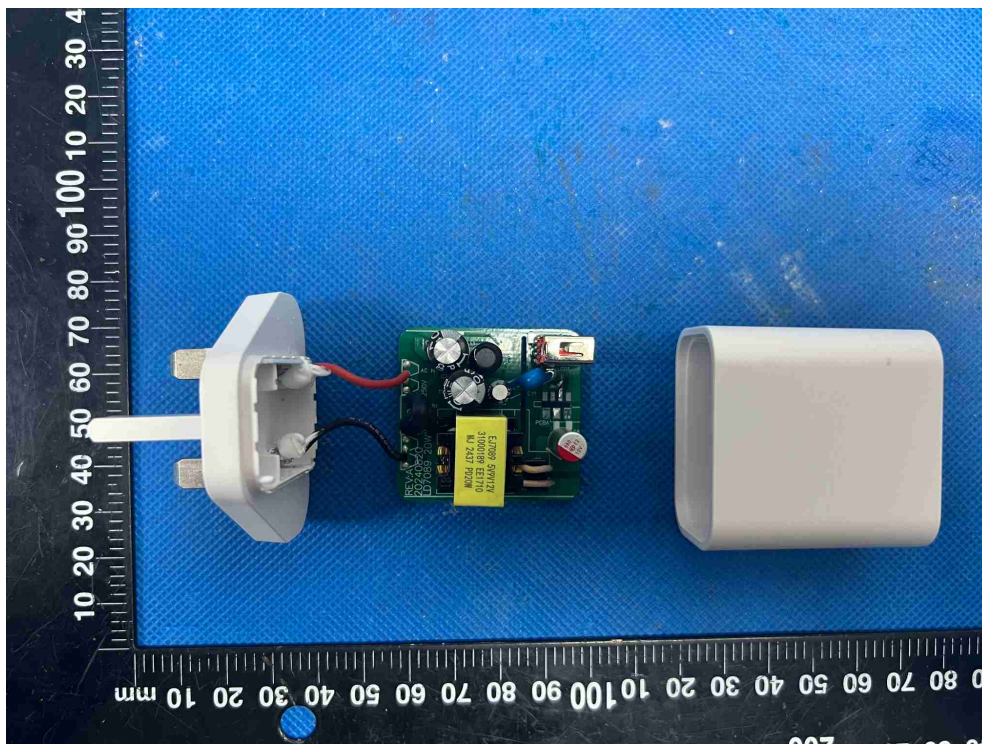


Figure 5 Internal view for UK plug USB-A

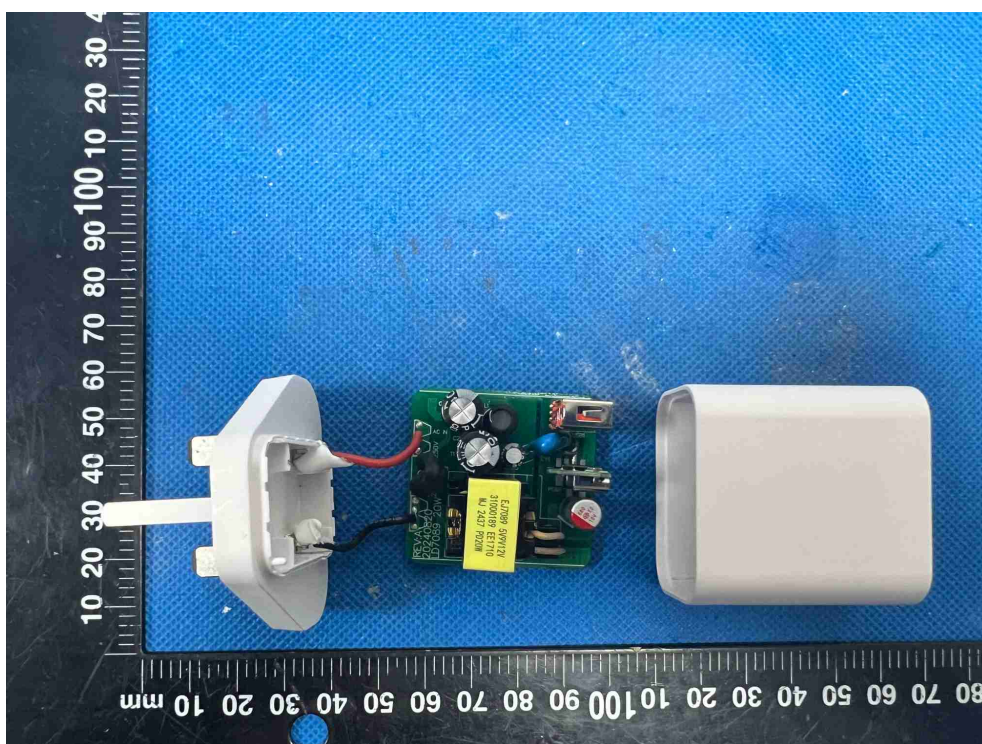


Figure 6 Internal view for UK plug USB-A+USB-C

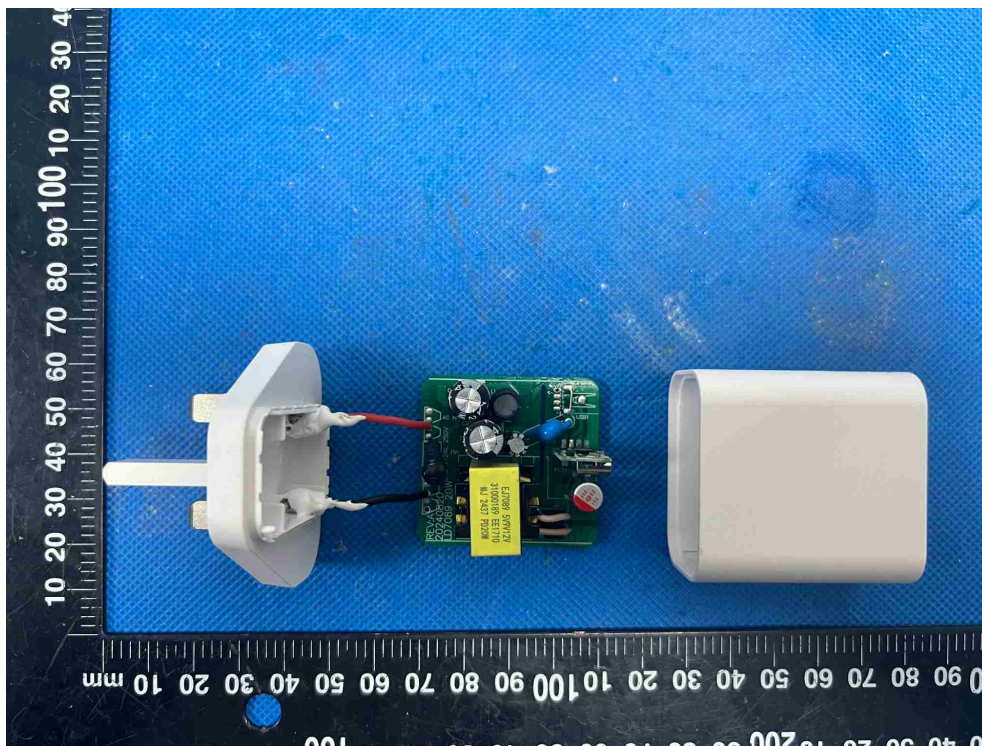


Figure 7 Internal view for UK plug USB-C



Figure 8 External view for EU plug

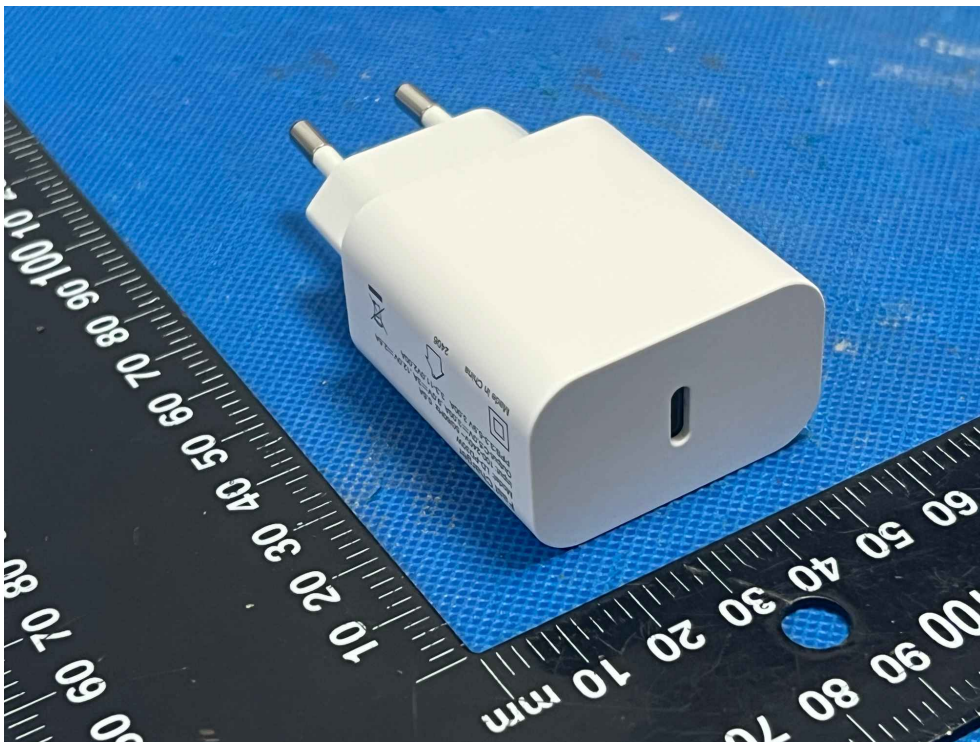


Figure 9 External view for EU plug USB-C

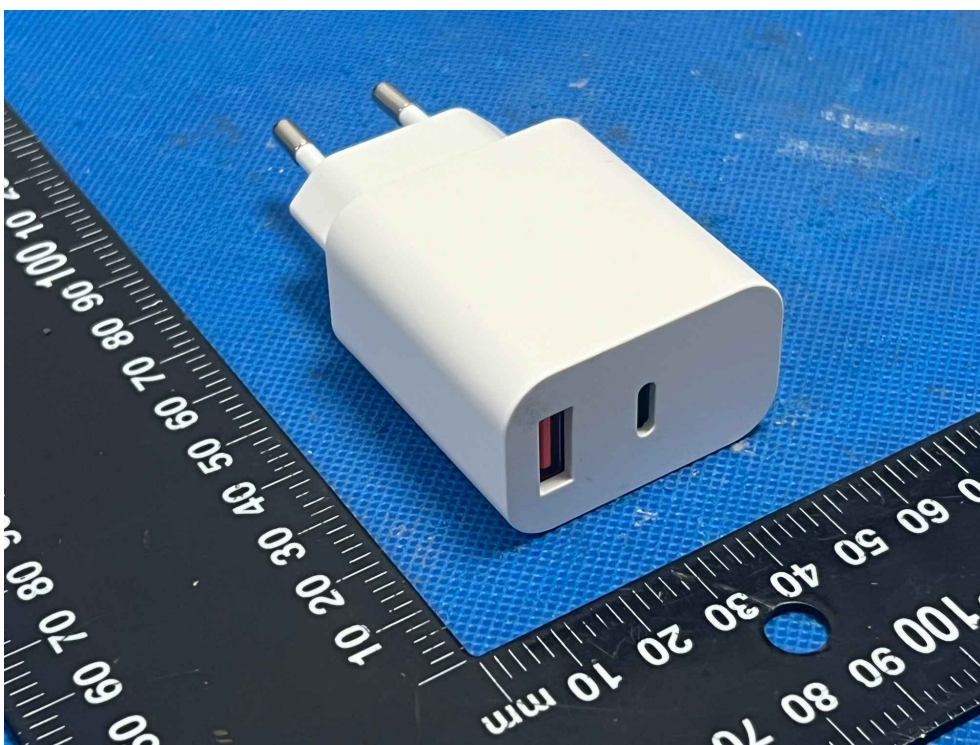


Figure 10 External view for EU plug USB-A+USB-C

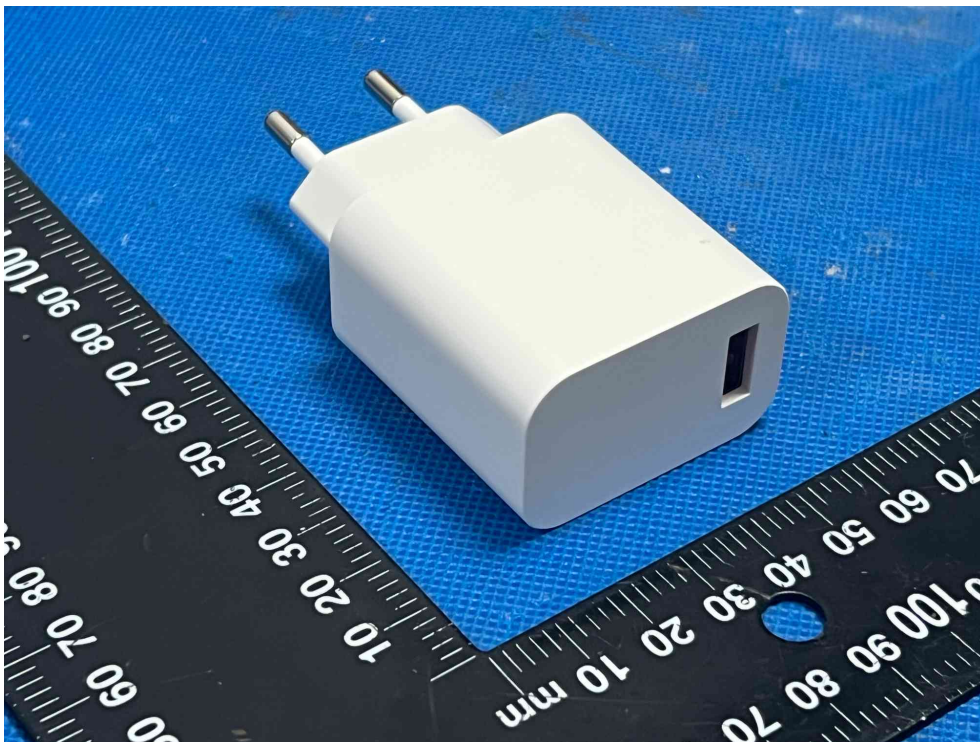


Figure 11 External view for EU plug USB-A

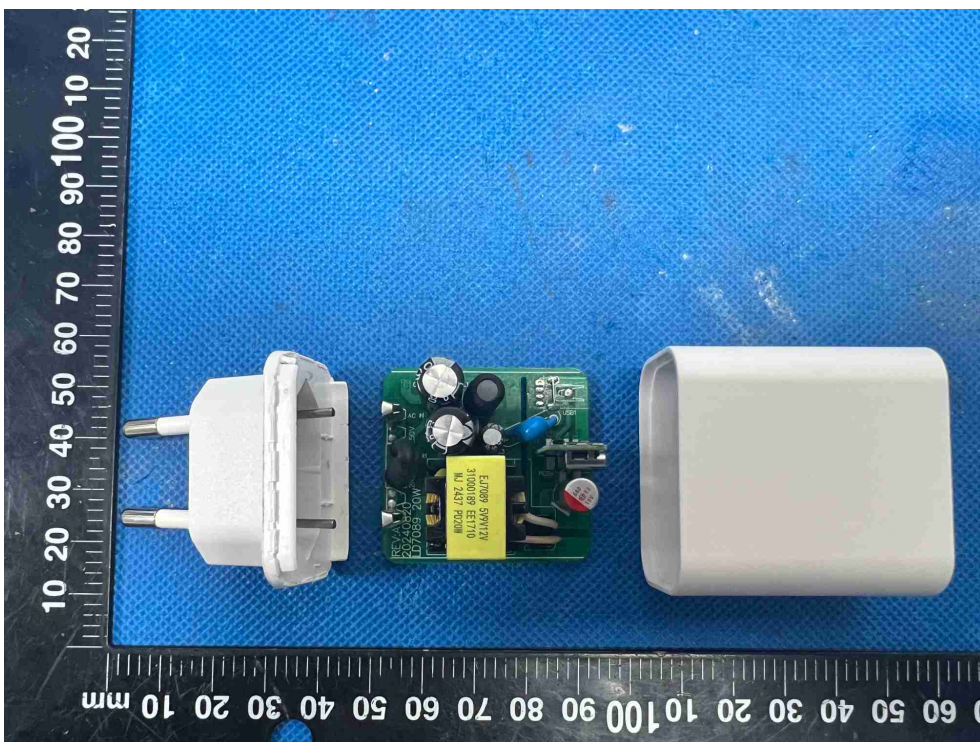


Figure 12 Internal view for EU plug USB-C

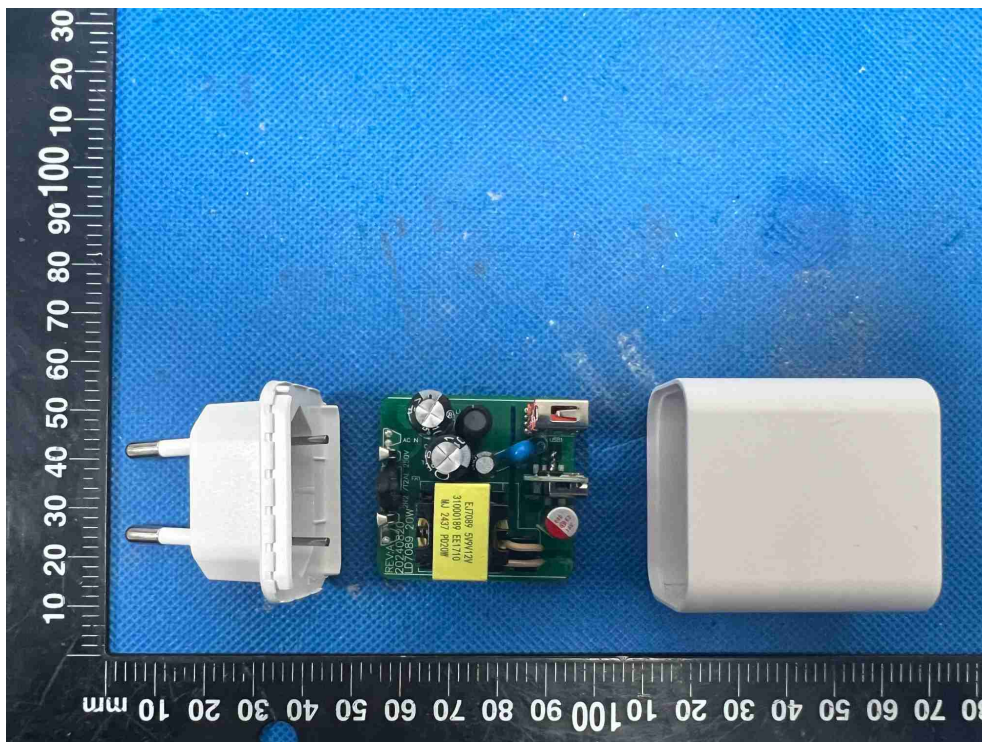


Figure 13 Internal view for EU plug USB-C+USB-A

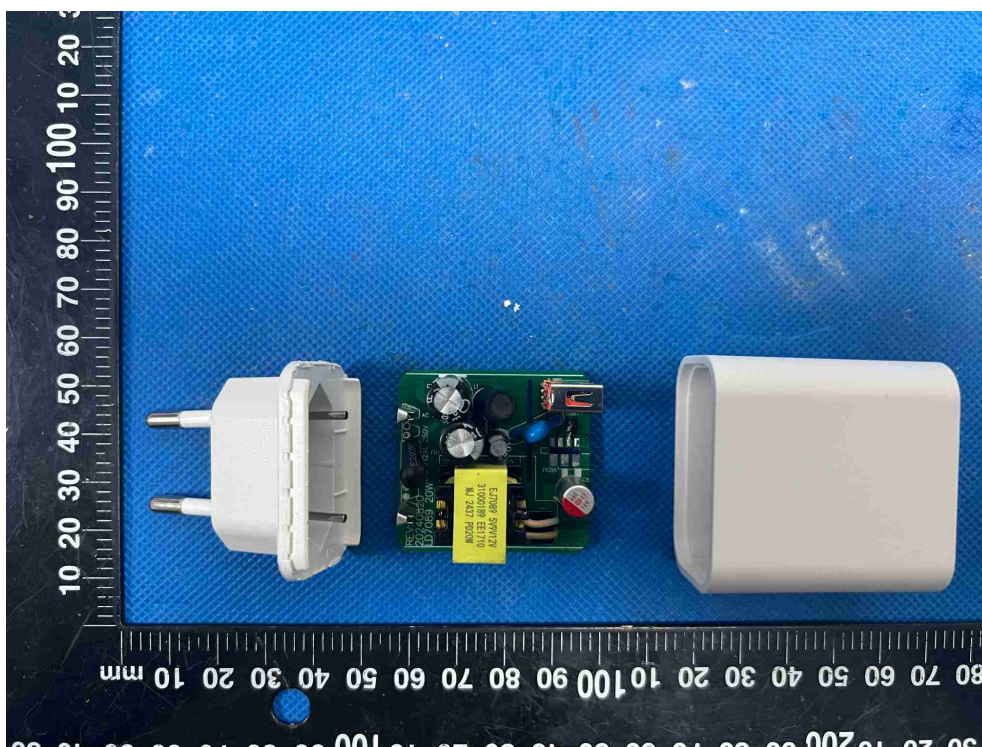


Figure 14 Internal view for EU plug USB-A

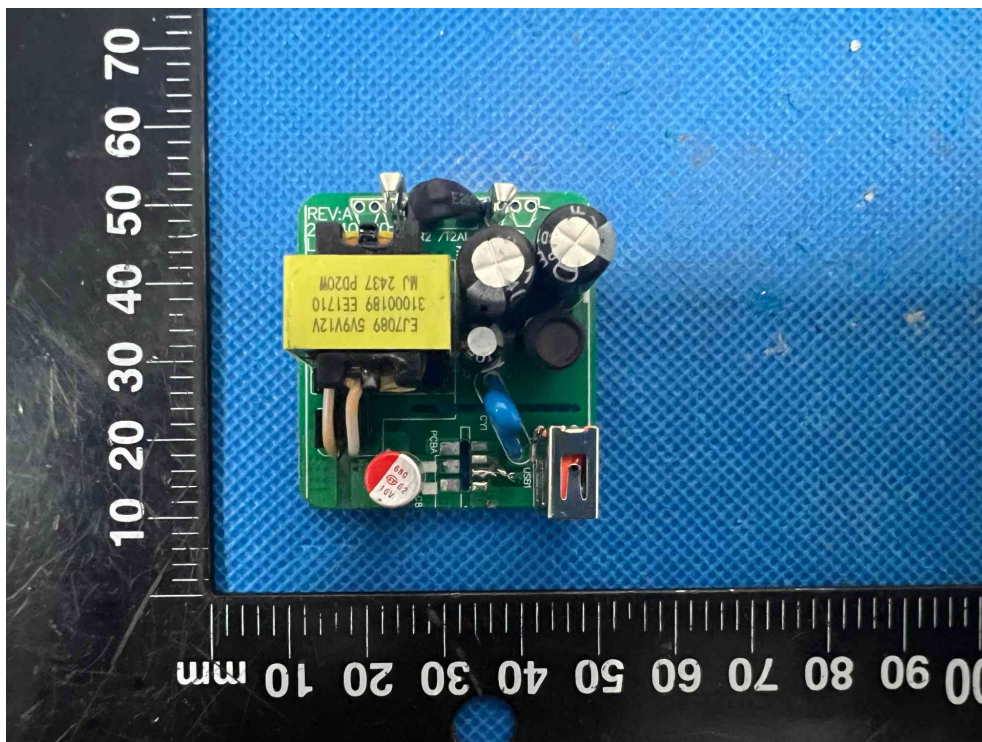


Figure 15 Internal view for USB-A

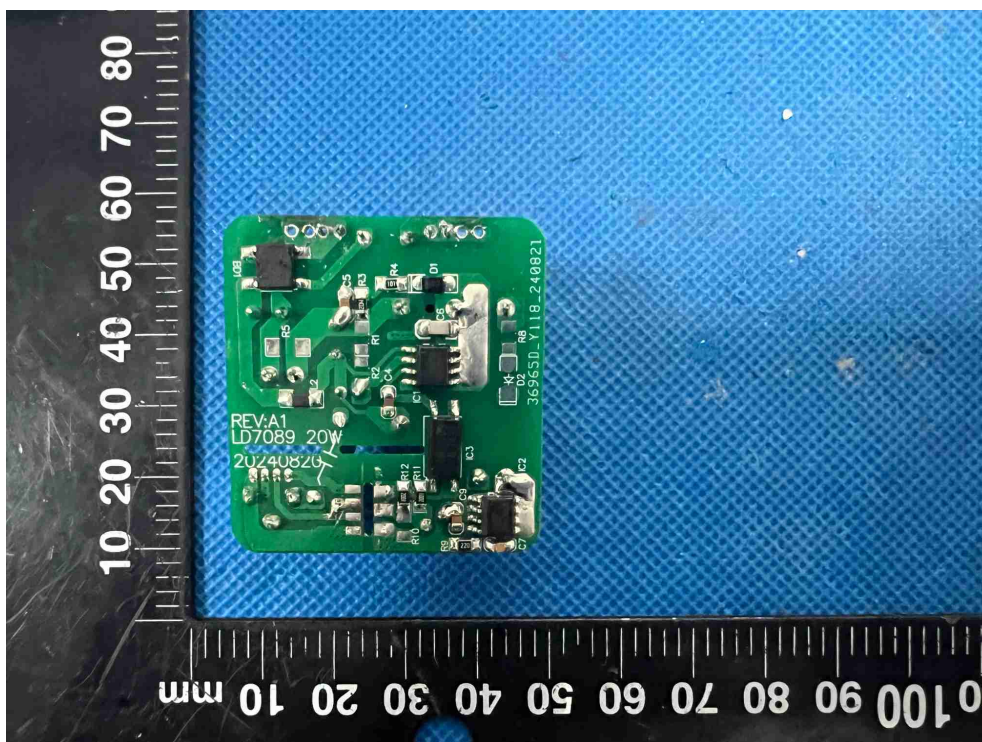


Figure 16 Internal view for USB-A

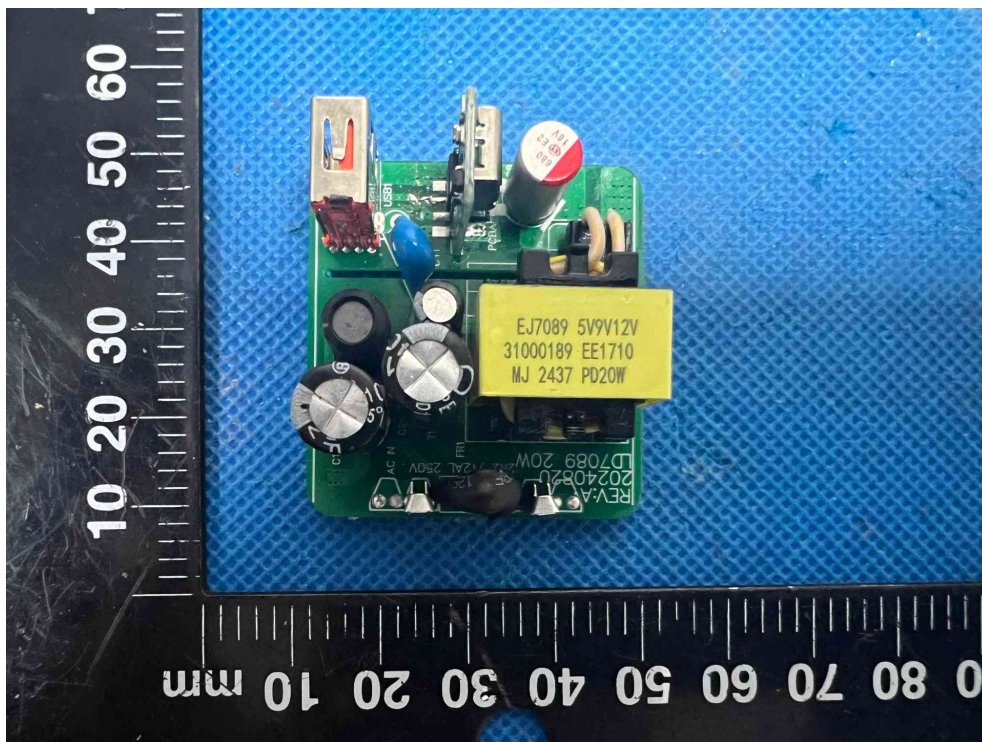


Figure 17 Internal view for USB-A+USB-C

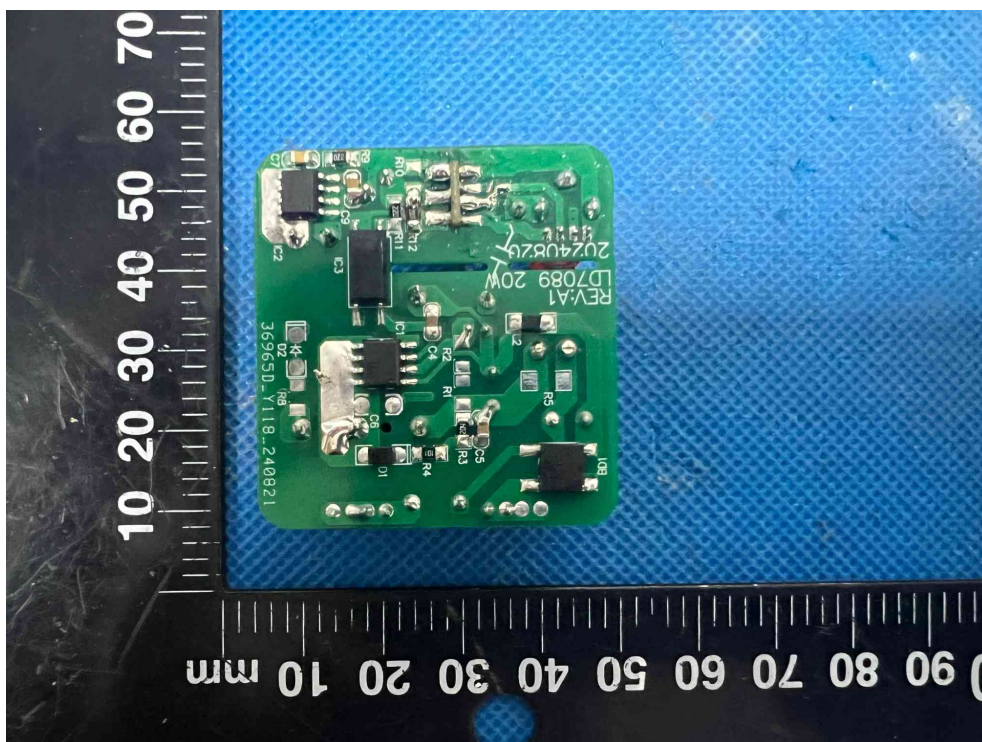


Figure 18 Internal view for USB-A+USB-C

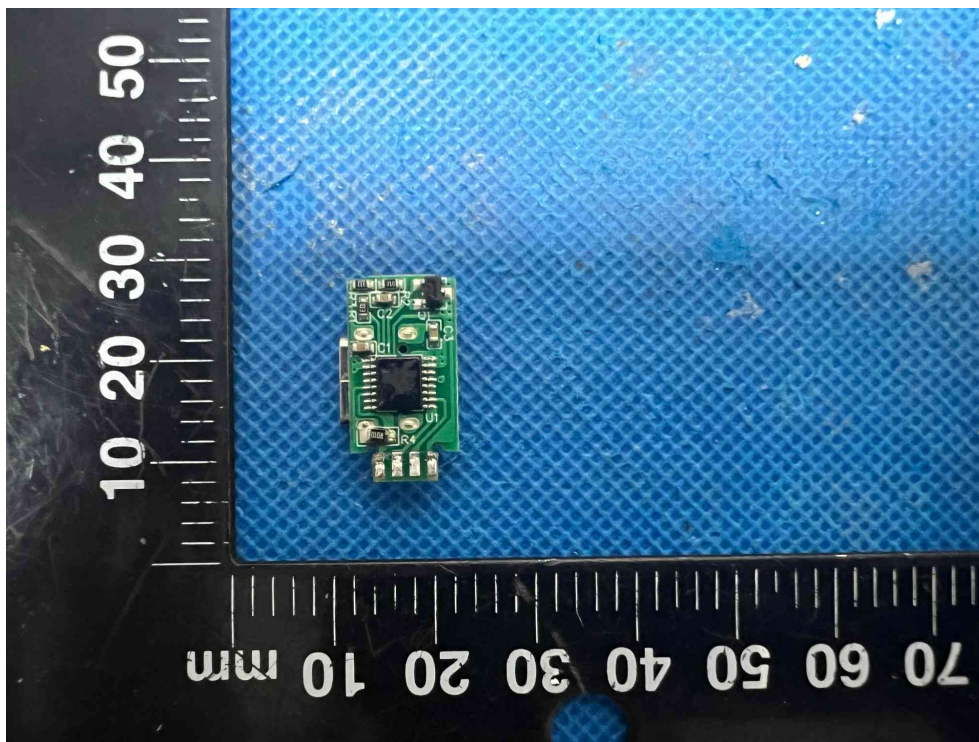


Figure 19 Internal view for USB-A+USB-C, USB-C

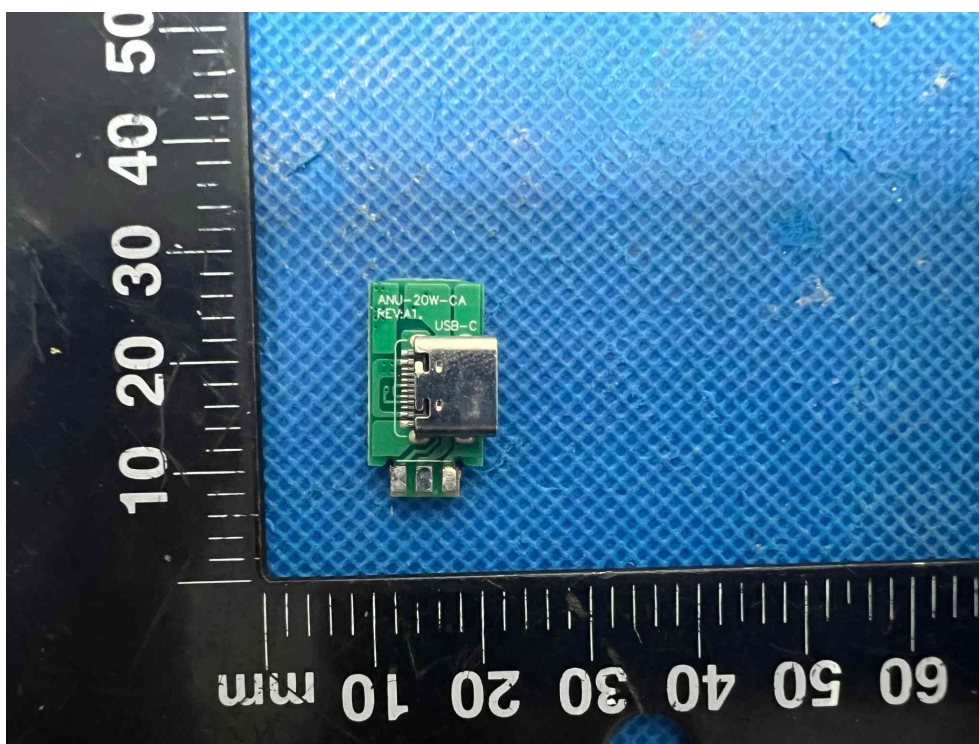


Figure 20 Internal view for USB-A+USB-C, USB-C

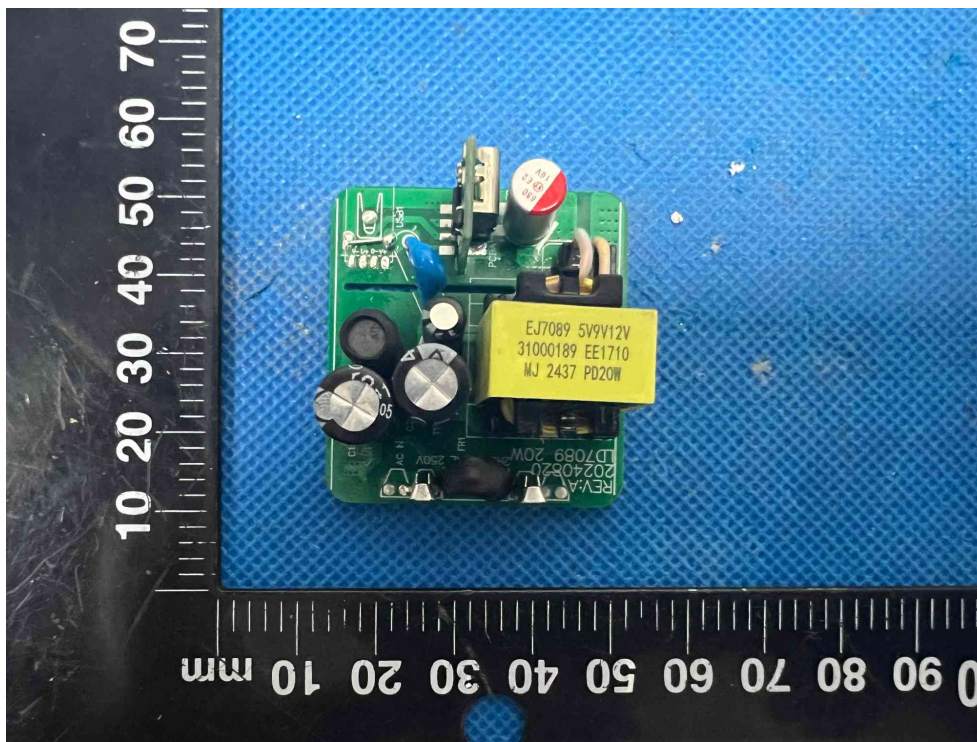


Figure 21 Internal view for USB-C

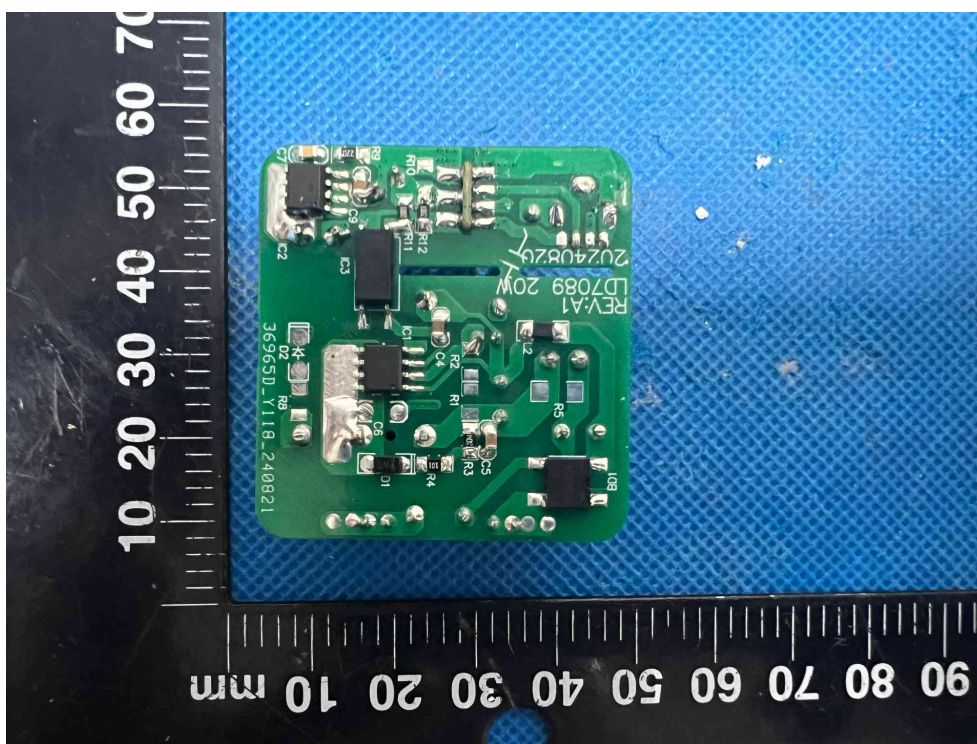


Figure 22 Internal view for USB-C

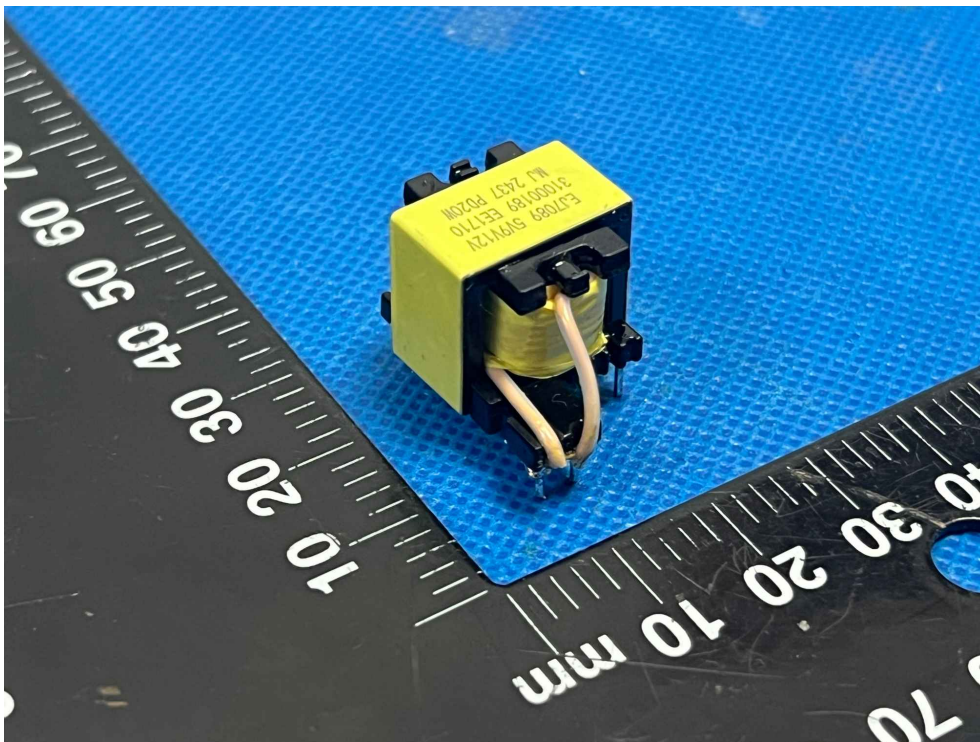


Figure 23 Transformer view

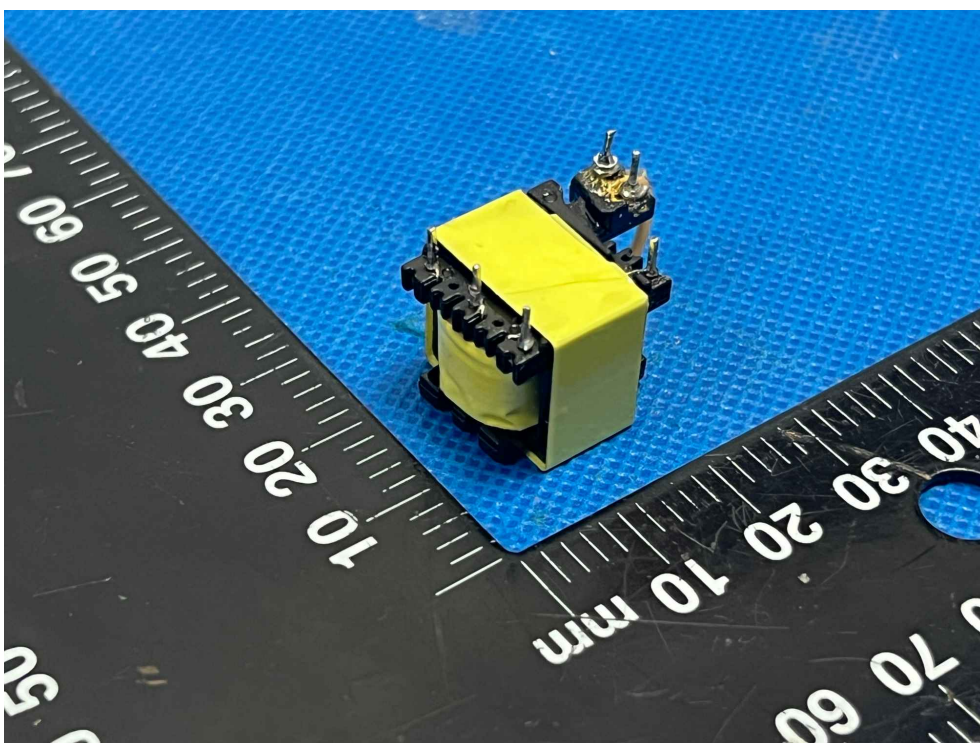


Figure 24 Transformer view

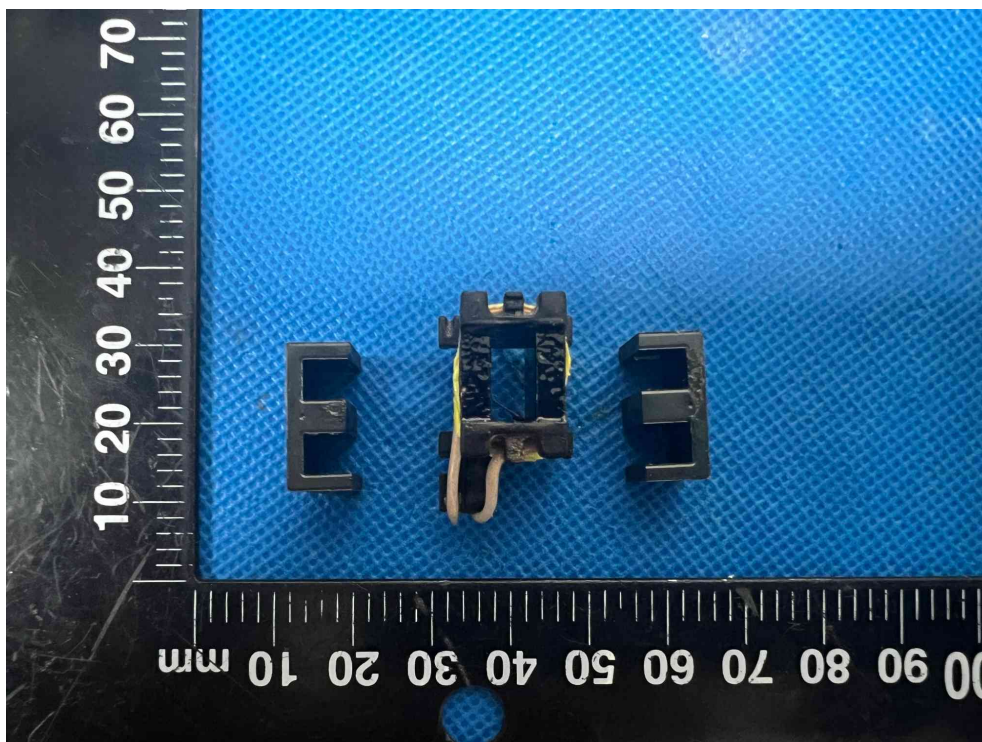


Figure 25 Transformer view

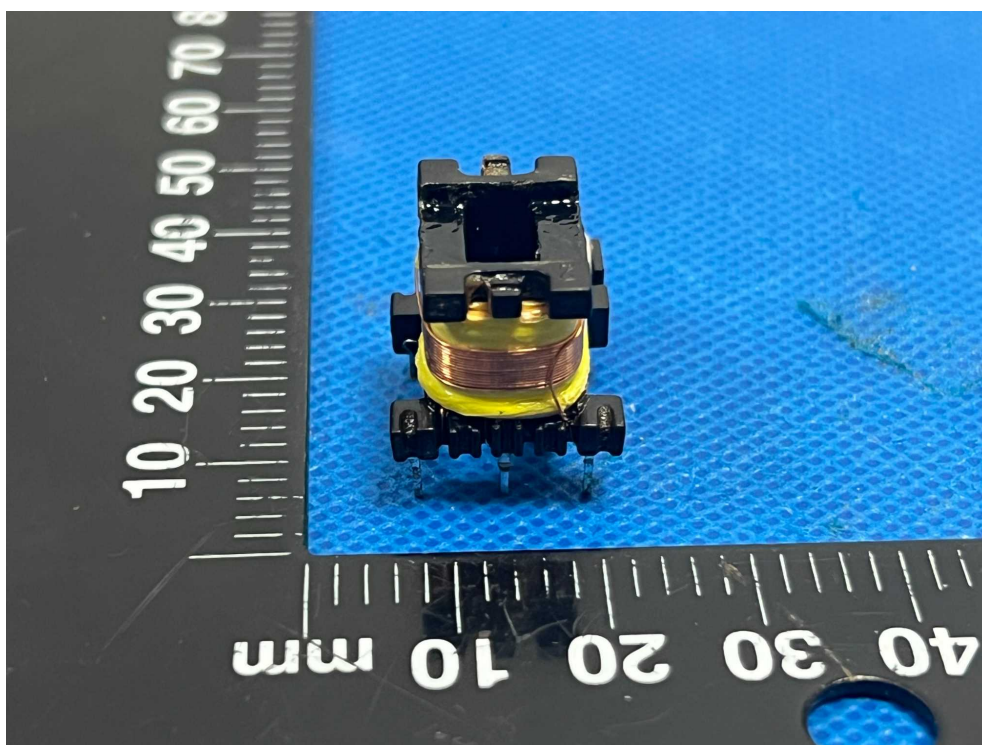


Figure 26 Transformer view

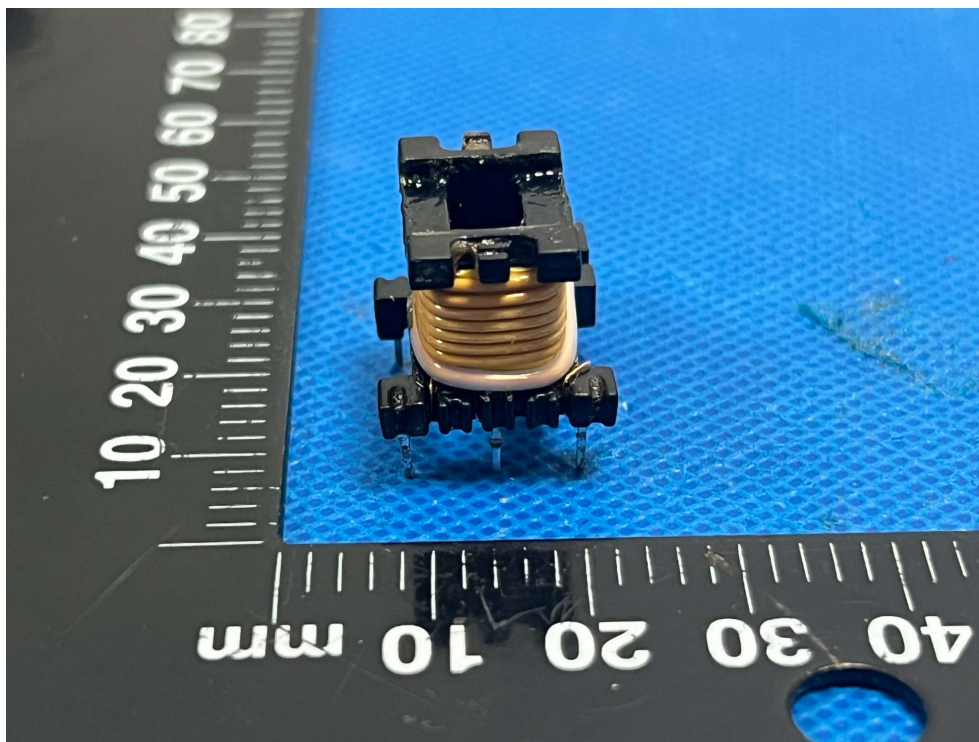


Figure 27 Transformer view

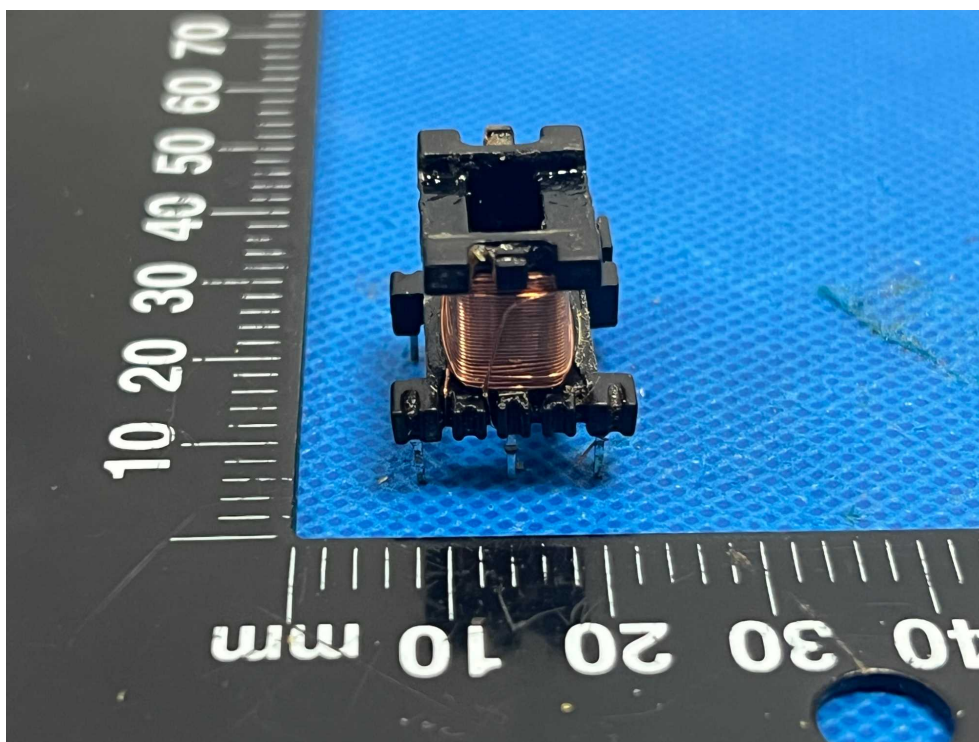


Figure 28 Transformer view

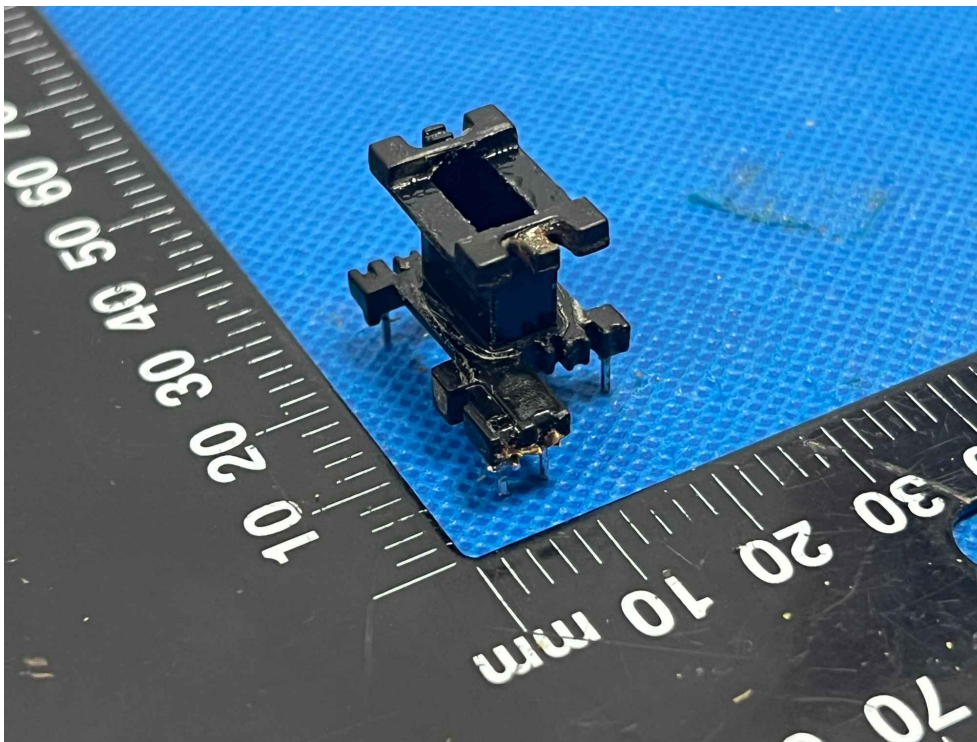


Figure 29 Transformer view

*****THE END OF REPORT*****