Test Report issued under the responsibility of:

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

Report Number..... :	22110255HKG-001
Date of issue ..... :	2022-12-13
Total number of pages ..... :	95
Name of Testing Laboratory preparing the Report ..... :	Intertek Testing Services Hong Kong Limited
Applicant's name..... :	Shenzhen Chip Optech Co., Ltd
Address ..... :	5th Floor, Tower C, Baoshi Technological Park, Baoshi Road, Shiyan Street, Bao'an District, Shenzhen Guangdong 518108, China
Test specification:	
Standard ..... :	IEC 62368-1:2018
Test procedure..... :	CB Scheme
Non-standard test method..... :	N/A
TRF template used ..... :	IECEE OD-2020-F1:2021, Ed.1.4
Test Report Form No. ..... :	IEC62368_1E
Test Report Form(s) Originator.... :	UL(US)
Master TRF ..... :	Dated 2022-04-14

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Test item description .....:	LED Display Screen
Trade Mark(s) .....:	N/A
Manufacturer.....:	Same as applicant
Model/Type reference .....:	P0.9, P1.2, P1.5, P1.6, P1.8, P2, P2.5, P3, P4, P5
Ratings .....:	Input: 100-240VAC, 50-60Hz, 10A Class I
	Output: 100-240VAC, 50-60Hz, 9A

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	Intertek Testing Services Hong Kong Limited	
Testing location/ address ..... :		Intertek, 2/F Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong	
Tested by (name, function, signature) ..... :		Lai Yan Lo Project Engineer	Digitally signed by Yan Lo DN: cn=Yan Lo, o=Intertek Hong Kong, ou=ICT, email=laiyan@lo@intertek.com, c=HK
Approved by (name, function, signature) .. :		Henry Ho Mandated Reviewer	Digitally signed by Henry Ho DN: cn=Henry Ho, o=Intertek Hong Kong Limited, ou=ICT E&NA, email=henry.ho@intertek.com, c=HK
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Approved by (name, function, signature) .. :			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address ..... :			
Tested by (name, function, signature)			
Witnessed by (name, function, signature). :			
Approved by (name, function, signature) .. :			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Witnessed by (name, function, signature). :			
Approved by (name, function, signature) .. :			
Supervised by (name, function, signature) :			

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

Appendix I for European group differences and national differences (Page 61 to Page 82)

Appendix I for National difference for U.S.A. and Canada (page 83 to Page 89)

Appendix II for Photo (Page 90 to Page 95)

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
Refer to content of this test report	Intertek Testing Services Hong Kong Ltd.
General requirements (Clause 4)	2/F., Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong SAR, China
Classification of electrical energy sources (Clause 5.2)	
Accessibility to electrical energy sources and safeguards (Accessibility test) (Clause 5.3.2)	
Maximum operating temperature test (Heating test) (Clause 5.4.1.4, 6.3.2, 9.0, B.2.6)	
Determination of Working Voltage (Clause 5.4.1.8)	
Clearance and creepage distances measurement (Clause 5.4.2, 5.4.3)	
Solid insulation measurement (Clause 5.4.4)	
Humidity conditioning (Clause 5.4.8)	
Electric strength test (Clause 5.4.9)	
Safeguard against capacitor discharge after disconnection of a connector (Clause 5.5.2.2)	
Resistance of the protective bonding system (Ground continuity test) (Clause 5.6.6.2)	
Unearthed accessible parts (Clause 5.7.4)	
Earthed accessible conductive part test (Clause 5.7.5)	
Electrical Power Source (PS) measurements for classification (Clause 6.2.2)	
Determination of Potential Ignition Sources (Arcing PIS) (Clause 6.2.3.1)	
Determination of Potential Ignition Sources (Resistive PIS) (Clause 6.2.3.2)	
Static Stability test (Clause 8.6.2.2)	
Glass Slide test (Clause 8.6.4)	
Horizontal force test (Clause 8.6.5)	
Handle strength test (Clause 8.8)	
Equipment safeguard for thermal burn (heating test for thermal burn) (Clause 9.2.6)	

Safeguard against visible, infra-red, and ultra-violet radiation (Clause 10.4) Input test (Annex B.2.5) Simulated single fault conditions (Annex B.4) Test for the permanence of markings (Annex F.3.10) Steady force test, 30 N (Annex T.3) Steady force test, 250 N (Annex T.5) Stress Relief test (Annex T.8)	

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

European Group differences and National differences for CENELEC countries were checked.

National differences for countries U.S.A. and Canada were checked.

☒ **The product was compiled to the requirements of IEC 62368-1:2018 (3rd Edition) & EN IEC 62368-1:2020+A11:2020, CSA/UL 62368-1:2019.**

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

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

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

Information on uncertainty of measurement:

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

When determining of test conclusion, measurement uncertainty of tests have been considered. The decision rule is based on ILAC-G8:09/2019 clause 4.2.1 with complying the relevant requirements of environment and equipment mentioned in IECEE OD-5014.

The tested sample was submitted by client.

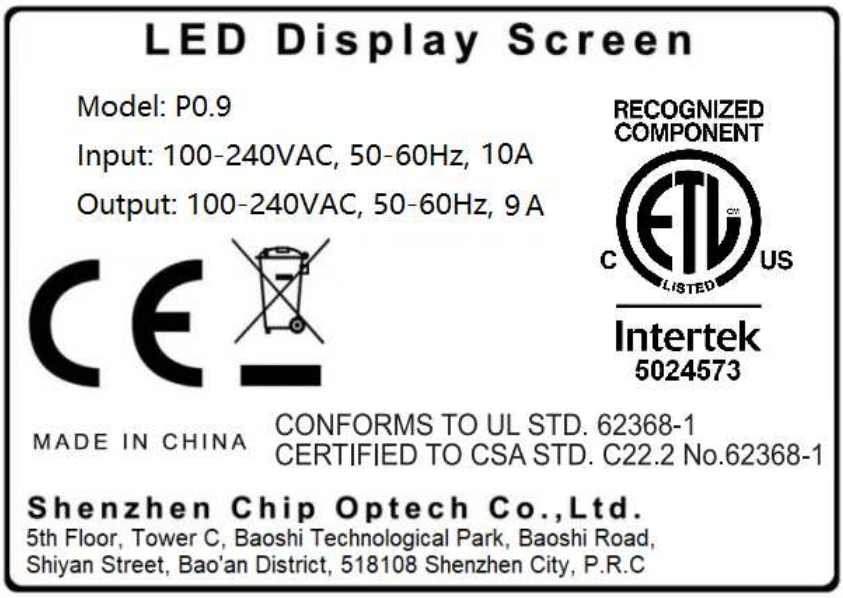
The circuit diagram, label/ marking artwork and bill of materials were provided by client.

The information on the certificate of critical components with mark of conformity was verified.

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

Copy of marking plate:

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



Remark:

- The above copy of marking plate as an example for the models covered into this report. All the other models will have the same marking plate except the differences of model type and product description.
- The above markings are the minimum requirements required by the safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.
- The height of WEEE symbol should be minimum 7mm high.
- Only trademark applied for CB certificate.

Information below was listed on user instruction:

- Make sure the product's protective ground is fully grounded.
  Assurer la protection de la terre entière

Ground installation instruction

2. External power switches or socket outlets used to supply Headers with power must be located near the product and easily acces sible so that the product can easily be disconnected from power.

- The socket for supplying power to the product must be installed close to the product, easily and convenient to cut off the product power supply.
  La prise d 'alimentation du produit doit être installée à proximité du produit afin de faciliter la coupure de l' alimentation du produit.

Disconnect Device Statements

Material、Cabinet Weight,module Weight	magnesium alloy、7.5kg/Cabinet

Instructional Safeguard of mass

- Make sure the product's protective ground is fully grounded.
  Assurer la protection de la terre entière

Protective Earthing Connection

Information below was listed on user instruction (Cont'd):

Warning!Avertissement

Please read the safety instruction before installing, powering, operating and debugging the products.

Avant d 'installer, de mettre en place, de faire fonctionner et de mettre à l' essai le produit, lisez les instructions de sécurité.

Following symbols are used to identify and explain important safety information in the manual.

Les symboles ci - après sont utilisés pour identifier et interpréter les informations de sécurité importantes contenues dans le manuel.

Warning!

Safety hazard, severe injury and even life-threatening.

La sécurité, les blessures graves et même la vie en danger.

Warning!

Installation, power supply and use of product should be in accordance with the manual.

L 'installation, l' alimentation et l 'utilisation des produits doivent être conformes aux spécifications.

Warning!

Dangerous voltage, fatal or serious electric shock.

Tension dangereuse, électrocution mortelle ou grave.

Warning!

Fire.

Feu

Warning!

Astigmatism can cause sight damage.

L 'astigmatisme nuit à la vue.

This product is only for professional use ! Not for family use!

Ce produit uniquement pour les professionnels!Pas pour la famille!

This product can cause serious injury or death as a result of burning, electric shock and dropping.

Ce produit peut causer des blessures graves ou la mort par brûlure, électrocution et chute.

Read user manual(Manuel de lecture):

Please read this manual carefully before installing, supplying, running and debugging this product.

Avant l 'installation, la fourniture, l' exploitation et la mise à l 'essai de ce produit, lisez attentivement ce manuel.

Follow the manuals and safety instructions on the product.

Suivre le manuel et les instructions de sécurité sur le produit.

If you have any questions, please contact Leyard Vteam for technical support.

Si vous avez des questions, contactez leyard vteam pour obtenir un appui technique.

Avoid electric shock(éviter le contact électrique):

- Power must be completely shut down before any installation or repair work.
  L'alimentation électrique doit être complètement désactivée avant toute installation ou maintenance.
- Disconnect the product from the AC before using the product or maintaining or installing any part of the product.
  Veuillez déconnecter le produit de la climatisation avant d 'utiliser ce produit ou d' entretenir ou d 'installer une partie quelconque du produit.
- Make sure the product's protective ground is fully grounded.
  Assurer la protection de la terre entière
- Use only DC power cord compatible with local residents, and have overload or leakage protection facilities.
  Seules des lignes d'alimentation en courant alternatif compatibles avec la population locale peuvent être utilisées et des installations de protection contre les surcharges ou les fuites d'électricité sont disponibles.
- The socket for supplying power to the product must be installed close to the product, easily and convenient to cut off the product power supply.
  La prise d 'alimentation du produit doit être installée à proximité du produit afin de faciliter la coupure de l' alimentation du produit.
- Use only wires supplied by Leyard Vteam or the same size wire for product and DC POWER.
  Seuls les fils ou produits fournis par leyard vteam et les fils électriques de la même taille que l 'alimentation en courant alternatif sont utilisés.
- Use only specified plugs of not less than 16A to connect the product and the AC POWER.
  Produit de connexion et alimentation en courant alternatif utilisant uniquement une fiche spécifique ne dépassant pas 16A
- Before using this product, carefully check all the power distribution equipment

Explanation of the Caution Symbol (ISO 7000, 0434 or 434b (2004-01)) and Dangerous Voltage Symbol (ISO 60417-5036 (2002-10))

Test item particulars:	
Product group .....:	☐ end product ☒ built-in component
Classification of use by .....:	☐ Ordinary person ☐ Children likely present ☒ Instructed person ☒ Skilled person
Supply connection.....:	☒ AC mains ☐ DC mains ☐ not mains connected: ☐ ES1 ☐ ES2 ☐ ES3
Supply tolerance .....:	☒ +10%/-10% ☐ +20%/-15% ☐ + %/ - % ☐ None
Supply connection – type .....:	☒ pluggable equipment type A - ☐ non-detachable supply cord ☐ appliance coupler ☐ direct plug-in ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☐ other:
Considered current rating of protective device.....:	☒ 16A (20A for US and Canada; 13A for UK) Location: ☒ building ☐ equipment ☐ N/A
Equipment mobility .....:	☐ movable ☐ hand-held ☐ transportable ☐ direct plug-in ☐ stationary ☒ for building-in ☐ wall/ceiling-mounted ☐ SRME/rack-mounted ☐ other:
Overvoltage category (OVC) .....:	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other:
Class of equipment .....:	☒ Class I ☐ Class II ☐ Class III ☐ Not classified ☐
Special installation location .....:	☒ N/A ☐ restricted access area ☐ outdoor location☐
Pollution degree (PD) .....:	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified T_{ma}.....:	35 °C ☐ Outdoor: minimum °C
IP protection class .....:	☒ IPX0 ☐ IP___
Power systems .....:	☒ TN ☐ TT ☐ IT - V_{L-L} ☐ not AC mains
Altitude during operation (m) .....:	☒ 2000 m or less ☒ m
Altitude of test laboratory (m) .....:	☒ 2000 m or less ☒ ____ m
Mass of equipment (kg) .....:	7.74 kg

Possible test case verdicts:	
- test case does not apply to the test object....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement....:	F (Fail)
Testing:	
Date of receipt of test item .....:	2022-11-18
Date (s) of performance of tests.....:	2022-11-18 to 2022-12-08

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.

This Test Report Form is the modification of original Test Report Form No. IEC62368_1E dated 2022-04-14.

The test report only allows to be revised within the retention period unless further standard or the requirement was noticed.

When determining of test conclusion, measurement uncertainty of tests have been considered. The decision rule is based on ILAC-G8:09/2019 clause 4.2.1 with complying the relevant requirements of environment and equipment mentioned in IECEE OD-5014.

The tested sample was submitted by client.

The circuit diagram, label/ marking artwork and bill of materials were provided by client.

The information on the certificate of critical components with mark of conformity was verified.

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The test report only allows to be revised within the retention period unless further standard or the requirement was noticed.

According to the standard, instruction sheets and other texts required by the standard should be written in the official language(s) of the country in which the appliance is to be sold. The applicant should ensure that the sample in future production fulfil with the requirement.

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

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

Name and address of factory (ies) ..... :	Huizhou Chip Optech Co., Ltd Tower 12, Xinhua Av. No 6, Chenjiang Street, Zhongkai Hi-Tech District, Huizhou Guangdong 516006, China

General product information and other remarks:

The product covered by this report is LED Display Screen for indoor use, as build-in equipment installing in a restricted access locations.

This product is supplied by one approved built-in switching power supply module via one approved inlets for the connection of detachable power supply cord and classified a Class I apparatus.

This product is fixed as stationary type for end use by professional service worker.

The LEDs of product is classified as Exempt Group according to IEC 62471.

The dimension of the EUT is: approx. 640mm x 480mm x 70mm.

The max. working temperature is 35°C.

Model Differences:

All the models covered in this report are identical to each other except for the lattice distances of LEDs and the model designation, by the following description of models in details:

Model P0.9: Distance of pixel pitch 0.9mm;

Model P1.2: Distance of pixel pitch 1.2mm;

Model P1.5: Distance of pixel pitch 1.5mm;

Model P1.6: Distance of pixel pitch 1.6mm;

Model P1.8: Distance of pixel pitch 1.8mm;

Model P2: Distance of pixel pitch 2.0mm;

Model P2.5: Distance of pixel pitch 2.5mm;

Model P3: Distance of pixel pitch 3.0mm;

Model P4: Distance of pixel pitch 4.0mm;

Model P5: Distance of pixel pitch 5.0mm;

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

Condition of Acceptability:

The products covered in this report are incomplete in construction features or limited in performance capabilities, the tests relied on the protective bonding conductor, the LED luminance and the mechanical constructions should be evaluated in the end-system. The additional consideration should be given to the following when it will intend to use in or with the final system, if applicable.

1. Suitability of the enclosure should be evaluated when installed in the end product. End System Enclosure should be compliance of protection for the Electrical , Mechanical, Flammability requirements.
2. Temperature Testing should be performed on this component when installed in the end product.

Clause 5.6.6.2 Resistance of the protective bonding system (Ground continuity test)

Clauses 5.7.2.2, 5.7.4 Earthed accessible conductive part test

Clause 8.6.2.2 Static stability test

Clause 8.6.2.3 Downward force test

Clause 8.6.3 Relocation stability test

Clause 8.6.4 Glass slide test

Clause 8.6.5 Horizontal force test

Clause 8.7.2 Wall or ceiling mount loading test

Clause 8.9.2 Wheels or casters attachment test

Clause 8.10.3 Cart, stand or carrier loading test

Clause 8.10.4 Cart, stand or carrier impact test

Clause 8.10.5 Mechanical stability test

Clause 10.2 Light emitting diode (Based on IEC62471)

Clause Annex B 2.5 Input Test

Clause Annex B.3 Simulated abnormal operating conditions

Clause Annex V Determination of accessible parts test

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: Mains circuit for Models supplied by AC mains input	Instructed Person, Skilled Person	1. Certified components used 2. Creepage distance and clearance	1. Protective Earthing 2. Instructional safeguard: “Please specify the connection to socket-outlet with earthing connection ” mention in the manual	1. Enclosure 2. Creepage distance and clearance
ES3: Mains circuit for Models supplied to AC mains output	Instructed Person, Skilled Person	1. Certified components used 2. Creepage distance and clearance	1. Protective Earthing 2. Instructional safeguard: “Please specify the connection to socket-outlet with earthing connection ” mention in the manual	1. Enclosure 2. Creepage distance and clearance
ES1: Accessible LED panel surface	Instructed Person, Skilled Person	N/A	N/A	N/A
ES1: Accessible earthed metal parts	Instructed Person, Skilled Person	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	1st S	2nd S
PS3: Mains AC Input Circuit	Apparatus enclosure	No parts exceeding 90% of its spontaneous Ignition temperature	1. V-0 grade PCB 2. Components complied with IEC	N/A

			standard 3. Separation from PIS Metal Fire enclosure	
PS3: Mains AC Output Circuit	Apparatus enclosure	No parts exceeding 90% of its spontaneous Ignition temperature	1. V-0 grade PCB 2. Components complied with IEC standard 3. Separation from PIS 4. Metal Fire enclosure	N/A
PS3: All internal circuits in the unit	Apparatus enclosure	No parts exceeding 90% of its spontaneous Ignition temperature	1. Min. V-1 PCB 2. Wiring insulation comply with IEC standard 3. Components mounted on min. V-1 PCB 4. Components complied with IEC standard Metal Fire enclosure	N/A
PS1: Signal port	Printed board	N/A	N/A	N/A
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
-	-	-	-	-
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Sharp edges and corners	Instructed Person, Skilled Person	N/A	N/A	N/A
MS2: Apparatus mass (for 1 panel module only)	Instructed Person, Skilled Person	N/A	Instructional safeguard	N/A

9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: Accessible part	Ordinary, Instructed, Skilled	N/A	N/A	N/A
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
RS1: LED display	Ordinary, Instructed, Skilled	N/A	N/A	N/A
Supplementary Information: "B" – Basic Safeguard; "S" – Supplementary Safeguard; "R" – Reinforced Safeguard				

ENERGY SOURCE DIAGRAM
Optional. Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems. Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings
☐ **ES** ☐ **PS** ☐ **MS** ☐ **TS** ☐ **RS**

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

4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies	See Table – Critical Components	P
4.1.2	Use of components	See Table – Critical Components	P
4.1.3	Equipment design and construction		P
4.1.4	Specified ambient temperature for outdoor use (°C) .....:	Indoor use only	N/A
4.1.5	Constructions and components not specifically covered		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.3, T.5)	P
4.4.3.3	Drop tests		N/A
4.4.3.4	Impact tests	(See Annex T.6)	P
4.4.3.5	Internal accessible safeguard tests		N/A
4.4.3.6	Glass impact tests	No glass material used	N/A
4.4.3.7	Glass fixation tests		N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests	(See Annex T.8)	P
4.4.3.9	Air comprising a safeguard	(See Annex T)	P
4.4.3.10	Accessibility, glass, safeguard effectiveness	All safeguards remain effective. Built-in component, accessibility to energy sources should be also considered in end system.	P
4.4.4	Displacement of a safeguard by an insulating liquid		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**		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Fix conductors not to defeat a safeguard		P
	Compliance is checked by test ..... :	(See Clause T.2)	P
4.7	**Equipment for direct insertion into mains socket–outlets**		N/A
4.7.2	Mains plug part complies with relevant standard .. :		N/A
4.7.3	Torque (Nm) ..... :		N/A
4.8	**Equipment containing coin/button cell batteries**		N/A
4.8.1	General	No coin/ button cell batteries	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
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 single pulse	N/A
5.2.2.5	Limits for repetitive pulses .....:	No repetitive pulses introduced	N/A
5.2.2.6	Ringing signals	No analogue telephone network ringing signals	N/A
5.2.2.7	Audio signals	No audio amplifiers	N/A
5.3	**Protection against electrical energy sources**		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	Shall be considered in end system	P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits		P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements		P
	Test with test probe from Annex V	The appropriate test probe from Annex V cannot contact a bare internal conductive part	—
5.3.2.2 a)	Air gap – electric strength test potential (V) .....:		N/A
5.3.2.2 b)	Air gap – distance (mm) .....:	Min. 0.2mm	P
5.3.2.3	Compliance		P
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	**Insulation materials and requirements**		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Material is non-hygroscopic	(See appended table 5.4.8)	P
5.4.1.4	Maximum operating temperature for insulating materials.....:	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degrees .....:	Pollution degree 2	P
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling test		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage .....:	(See appended table 5.4.2, 5.4.3)	P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A
5.4.1.10.2	Vicat test.....:		N/A
5.4.1.10.3	Ball pressure test .....:	Certified power supply transformer used	N/A
5.4.2	Clearances		P
5.4.2.1	General requirements		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance	(See appended table 5.4.2)	P
	Temporary overvoltage .....:	2000V_{peak}	—
5.4.2.3	Procedure 2 for determining clearance	(See appended table 5.4.2)	P
5.4.2.3.2.2	a.c. mains transient voltage.....:	2500V_{peak}	—
5.4.2.3.2.3	d.c. mains transient voltage .....:	No such transient voltage	—
5.4.2.3.2.4	External circuit transient voltage.....:	No such transient voltage	—
5.4.2.3.2.5	Transient voltage determined by measurement .....:	No need to conduct this test	—
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 .....:	Up to 2000m above sea level, Multiplication factor is 1.0	P
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 .....:	Material Group IIIb	—
5.4.3.4	Creepage distances measurement .....:	(See appended table 5.4.3)	P
5.4.4	Solid insulation		N/A
5.4.4.1	General requirements		N/A
5.4.4.2	Minimum distance through insulation .....:	Evaluated in approved built-in switching power supply	N/A
5.4.4.3	Insulating compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices	Evaluated in approved built-in switching power supply	N/A
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material	Evaluated in approved built-in switching power supply	N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) .....:		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
	Number of layers (pcs) .....:		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material .....:		N/A
5.4.4.6.5	Mandrel test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.7	Solid insulation in wound components	Evaluated in approved built-in switching power supply	N/A
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P, K_R, d, V_{PW} (V) ..... :	Evaluated in approved built-in switching power supply	N/A
	Alternative by electric strength test, tested voltage (V), K_R ..... :		N/A
5.4.5	Antenna terminal insulation	No such antenna terminal used.	N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance (MΩ)..... :		N/A
	Electric strength test .....:		N/A
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	Evaluated in approved built-in switching power supply	N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%), temperature (°C), duration (h) ..... :	93%, 40°C, 120 hours	—
5.4.9	Electric strength test		P
5.4.9.1	Test procedure for type test of solid insulation.....:	(See appended table 5.4.9)	P
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 ..... :	No such external circuit within the EUT	N/A
5.4.11	Separation between external circuits and earth	No such external circuit within the EUT	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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		P
5.5.2	Capacitors and RC units	(See appended table 4.1.2)	P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector ..... :	(See appended table 5.5.2.2)	P
5.5.3	Transformers	Evaluated in approved built-in switching power supply	N/A
5.5.4	Optocouplers	Evaluated in approved built-in switching power supply	N/A
5.5.5	Relays	No such component	N/A
5.5.6	Resistors		N/A
5.5.7	SPDs	Evaluated in approved built-in switching power supply	N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable ..... :		N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA) ..... :		—
5.6	**Protective conductor**		P
5.6.2	Requirement for protective conductors		P
5.6.2.1	General requirements		P
5.6.2.2	Colour of insulation	Green-and-yellow strips	P
5.6.3	Requirement for protective earthing conductors	PE pin of AC inlet were considered as protective earthing conductors	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Protective earthing conductor size (mm^2) ..... :	(See appended table 4.1.2)	—
	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		P
5.6.4.1	Protective bonding conductors		P
	Protective bonding conductor size (mm^2). ..... :	Min. 12AWG, complies with the requirement of 5.6.6	—
5.6.4.2	Protective current rating (A)..... :	16 A (20A for US and Canada, 13A for UK)	P
5.6.5	Terminals for protective conductors		P
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)..... :	Approved AC inlet used	P
	Terminal size for connecting protective bonding conductors (mm) .....:	PB terminal diameter: min. 5.3mm	P
5.6.5.2	Corrosion		P
5.6.6	Resistance of the protective bonding system		P
5.6.6.1	Requirements		P
5.6.6.2	Test Method..... :	(See appended table 5.6.6)	P
5.6.6.3	Resistance (Ω) or voltage drop..... :	(See appended table 5.6.6)	P
5.6.7	Reliable connection of a protective earthing conductor	Not permanently connected equipment.	N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm^2)..... :		N/A
	Class II with functional earthing marking ..... :		N/A
	Appliance inlet cl & cr (mm)..... :		N/A
5.7	**Prospective touch voltage, touch current and protective conductor current**		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current	(See appended table 5.2)	P
5.7.2.2	Measurement of voltage	(See appended table 5.2)	P
5.7.3	Equipment set-up, supply connections and earth connections		P
5.7.4	Unearthed accessible parts..... :	(See appended table 5.7.4)	P
5.7.5	Earthed accessible conductive parts..... :	(See appended table 5.7.5)	P
5.7.6	Requirements when touch current exceeds ES2 limits	Not exceed ES2 limits	N/A
	Protective conductor current (mA)..... :		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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
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.....:	No materials outside enclosure except for marking label.	N/A
6.4	**Safeguards against fire under single fault conditions**		P
6.4.1	Safeguard method	Method by control of fire spread applied. Fire enclosure shall be provided in final system.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	Supplementary safeguards		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.3.2	Single Fault Conditions ..... :		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits	Signal port	P
6.4.5	Control of fire spread in PS2 circuits	PS3 circuits inside.	N/A
6.4.5.2	Supplementary safeguards	PS3 circuits inside.	N/A
6.4.6	Control of fire spread in PS3 circuits	Metal Enclosure act as the Fire enclosure provided. All internal wirings are located within a fire enclosure. There are no combustible materials which are not part of a PS2 or PS3 exceeding volume of 1750 mm^3 within fire enclosure. See sub-clause 6.4.8 for fire enclosure.	P
6.4.7	Separation of combustible materials from a PIS	The materials did not ignite during single fault conditions (See appended tables B.4). All components are mounted on min. V-1 PCB.	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		P
6.4.8.2	Fire enclosure and fire barrier material properties	Front panel: min. V-0 Other parts: metal material	P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	Front panel: min. V-0 Other parts: metal material	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	No openings	P
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties		N/A
	Openings dimensions (mm)..... :	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.....:	No openings	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.3.5	Side openings and properties		N/A
	Openings dimensions (mm)..... :	No openings	N/A
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)..... :	Shall be considered in end system	N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating ..... :	Flammability rating: Front panel: min. V-0 Other parts: metal material	P
6.4.9	Flammability of insulating liquid.....:		N/A
6.5	**Internal and external wiring**		P
6.5.1	General requirements	VW-1 output wires used, which considered to equivalent to IEC/TS 60695-11-21.	P
6.5.2	Requirements for interconnection to building wiring ..... :		N/A
6.5.3	Internal wiring size (mm^2) for socket-outlets..... :		N/A
6.6	**Safeguards against fire due to the connection to additional equipment**		N/A

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**		N/A
8.4	**Safeguards against parts with sharp edges and corners**		N/A
8.4.1	Safeguards	The sharp edges and corners of the equipment are considered as MS1, no safeguard required.	N/A
	Instructional Safeguard.....:	No need for MS1	N/A
8.4.2	Sharp edges or corners		P
8.5	**Safeguards against moving parts**		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts		N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard.....:	No moving parts	N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m).....:		N/A
	Space between end point and nearest fixed mechanical part (mm) .....:		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly .....:		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts .....:		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N).....:		N/A
8.5.4.3.5	Compliance		N/A
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**		P
8.6.1	General		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Instructional safeguard.....:	Provided	P
8.6.2	Static stability		P
8.6.2.2	Static stability test .....:	75 for vertical; 19.5 for horizontal	P
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		P
8.6.5	Horizontal force test.....:	No need for MS2	N/A
8.7	**Equipment mounted to wall, ceiling or other structure**		N/A
8.7.1	Mount means type .....:	Built-in component, considered in end system	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**		P
8.8.1	General	Equipment mass (≤ 25kg): MS2	P
8.8.2	Handle strength test		P
	Number of handles.....:	One handle	—
	Force applied (N) .....:	232.2N	—
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) .....:		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.10.6	Thermoplastic temperature stability		N/A
8.11	**Mounting means for slide-rail mounted equipment (SRME)**		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard.....:		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied.....:		N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	**Telescoping or rod antennas**		N/A
	Button/ball diameter (mm) .....:		—
9	**THERMAL BURN INJURY**		P
9.2	**Thermal energy source classifications**		P
9.3	**Touch temperature limits**		P
9.3.1	Touch temperatures of accessible parts.....:	(See appended table)	P
9.3.2	Test method and compliance		P
9.4	**Safeguards against thermal energy sources**		N/A
9.5	**Requirements for safeguards**		N/A
9.5.1	Equipment safeguard		N/A
9.5.2	Instructional safeguard.....:		N/A
9.6	**Requirements for wireless power transmitters**		N/A
9.6.1	General		N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance .....:		N/A
10	**RADIATION**		P
10.2	**Radiation energy source classification**		P
10.2.1	General classification		P
	Lasers..... :	No such parts	—
	Lamps and lamp systems..... :	RS1: LED display	—
	Image projectors..... :	No such parts	—
	X-Ray..... :	No such parts	—
	Personal music player ..... :	No such parts	—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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)**		P
10.4.1	General requirements	RS1: LED display	P
	Instructional safeguard provided for accessible radiation level needs to exceed	No instructional safeguard need for RS1	N/A
	Risk group marking and location .....:	RS1. Exempt Group	N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure .....:	No UV radiation	N/A
10.4.3	Instructional safeguard ..... :		N/A
10.5	**Safeguards against X-radiation**		N/A
10.5.1	Requirements	No X-radiation	N/A
	Instructional safeguard for skilled persons ..... :		—
10.5.3	Maximum radiation (pA/kg)..... :		—
10.6	**Safeguards against acoustic energy sources**		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, dB(A).....:		N/A
	Unweighted RMS output voltage (mV).....:		N/A
	Digital output signal (dBFS).....:		N/A
10.6.3	Requirements for dose-based systems		N/A
10.6.3.1	General requirements		N/A
10.6.3.2	Dose-based warning and automatic decrease		N/A
10.6.3.3	Exposure-based warning and requirements		N/A
	30 s integrated exposure level (MEL30) .....:		N/A
	Warning for MEL ≥ 100 dB(A) .....:		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards ..... :		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV)..... :		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.6.2	Corded listening devices with digital input		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A) .....:		N/A
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A) .....:		N/A

B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.1	**General**		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.2	**Normal operating conditions**		P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers ..... :		N/A
B.2.3	Supply voltage and tolerances	Rated voltage ±10 %	P
B.2.5	Input test..... :	(See appended table B.2.5)	P
B.3	**Simulated abnormal operating conditions**		N/A
B.3.1	General		N/A
B.3.2	Covering of ventilation openings	No openings	N/A
	Instructional safeguard ..... :		N/A
B.3.3	DC mains polarity test		N/A
B.3.4	Setting of voltage selector		N/A
B.3.5	Maximum load at output terminals		N/A
B.3.6	Reverse battery polarity	No batteries	N/A
B.3.7	Audio amplifier abnormal operating conditions		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions ..... :		N/A
B.4	**Simulated single fault conditions**		P
B.4.1	General		P
B.4.2	Temperature controlling device		N/A
B.4.3	Blocked motor test		N/A
B.4.4	Functional insulation	(See appended table B.4)	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.4)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors	Evaluated in approved built-in switching power supply	N/A
B.4.6	Short circuit or disconnection of passive components	(See appended table 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 ..... :	During and after a single fault condition, a class 1 or class 2 energy sources did not become a class 3 energy source. For a class 3 energy source, during and after a single fault condition, at least one safeguard continued to comply with the relevant safeguard requirements.	P
B.4.9	Battery charging and discharging under single fault conditions	No battery charging circuit.	N/A
C	**UV RADIATION**		N/A
C.1	**Protection of materials in equipment from UV radiation**		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	**UV light conditioning test**		N/A
C.2.1	Test apparatus..... :	No UV radiation	N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure test		N/A
C.2.4	Xenon-arc light-exposure test		N/A
D	**TEST GENERATORS**		N/A
D.1	**Impulse test generators**		N/A
D.2	**Antenna interface test generator**		N/A
D.3	**Electronic pulse generator**		N/A
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		N/A
E.1	**Electrical energy source classification for audio signals**		N/A
	Maximum non-clipped output power (W)..... :		—
	Rated load impedance (Ω) ..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Open-circuit output voltage (V)..... :		—
	Instructional safeguard ..... :		—
E.2	**Audio amplifier normal operating conditions**		N/A
	Audio signal source type ..... :		—
	Audio output power (W)..... :		—
	Audio output voltage (V)..... :		—
	Rated load impedance (Ω) ..... :		—
	Requirements for temperature measurement		N/A
E.3	Audio amplifier abnormal operating conditions		N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	**General**		P
	Language ..... :	English version provided	—
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	Equipment marking is located on its exterior surface and is readily visible	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification ..... :	See copy of marking plate	P
F.3.2.2	Model identification ..... :	See Model/Type reference on page 2 for details	P
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains	AC Mains connected	N/A
F.3.3.3	Nature of the supply voltage..... :	IEC 60417-5032 for AC symbol used.	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	Single supply	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.4	Voltage setting device	No such device	N/A
F.3.5	Terminals and operating devices	See below	N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings ..... :	No mains appliance outlet or socket-outlet provided.	N/A
F.3.5.2	Switch position identification marking..... :	No disconnect switch.	N/A
F.3.5.3	Replacement fuse identification and rating markings ..... :	Evaluation of the approved power supply.	N/A
	Instructional safeguards for neutral fuse ..... :		N/A
F.3.5.4	Replacement battery identification marking ..... :		N/A
F.3.5.5	Neutral conductor terminal		N/A
F.3.5.6	Terminal marking location		P
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I equipment	See below for details	P
F.3.6.1.1	Protective earthing conductor terminal..... :	Symbol ⏚ provided, protective earthing symbol marked on the appliance inlet.	P
F.3.6.1.2	Protective bonding conductor terminals ..... :		N/A
F.3.6.2	Equipment class marking ..... :	Class I equipment.	N/A
F.3.6.3	Functional earthing terminal marking ..... :		N/A
F.3.7	Equipment IP rating marking ..... :	IPX0, no marking is needed	N/A
F.3.8	External power supply output marking ..... :		N/A
F.3.9	Durability, legibility and permanence of marking	Marking is considered to be legible and easily discernible. See also the following details.	P
F.3.10	Test for permanence of markings	The label was subjected to the permanence of marking test, 15 sec. for water and 15 sec. for petroleum spirit. After each test, the marking remained legible.	P
F.4	**Instructions**		P
	a) Information prior to installation and initial use	Built-in component, considered in end system	N/A
	b) Equipment for use in locations where children not likely to be present	Safety related instructions prior to instruction for installation and initial use	P
	c) Instructions for installation and interconnection	Built-in component, considered in end system	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	d) Equipment intended for use only in restricted access area	Built-in component, considered in end system	N/A
	e) Equipment intended to be fastened in place	Built-in component, considered in end system	N/A
	f) Instructions for audio equipment terminals		N/A
	g) Protective earthing used as a safeguard	Statement “Equipment is connected to a socket-outlet with earthing connection by means of a power cord.“ marked	P
	h) Protective conductor current exceeding ES2 limits		N/A
	i) Graphic symbols used on equipment	Warning explanation provided.	P
	j) Permanently connected equipment not provided with all-pole mains switch		N/A
	k) Replaceable components or modules providing safeguard function		N/A
	l) Equipment containing insulating liquid		N/A
	m) Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		P
G	**COMPONENTS**		P
G.1	**Switches**		N/A
G.1.1	General	No such switch provided and no specific disconnect device provided within the equipment	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance		N/A
G.2	**Relays**		N/A
G.2.1	Requirements	No such parts	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**		N/A
G.3.1	Thermal cut-offs		N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links		N/A
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N/A
	b) Thermal links tested as part of the equipment		N/A
G.3.2.2	Test method and compliance		N/A
G.3.3	PTC thermistors		N/A
G.3.4	Overcurrent protection devices	Evaluated in approved built-in switching power supply.	N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions..... :		N/A
G.4	**Connectors**		P
G.4.1	Spacings	Fixed to the equipment.	P
G.4.2	Mains connector configuration ..... :	Approved AC inlet/outlet used	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	Insertion into a mains socket-outlet or appliance coupler is unlikely to occur.	P
G.5	**Wound components**		N/A
G.5.1	Wire insulation in wound components	Evaluated in approved built-in switching power supply.	N/A
G.5.1.2	Protection against mechanical stress		N/A
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	Evaluated in approved built-in switching power supply.	N/A
G.5.3.1	Compliance method..... :		N/A
	Position..... :		N/A
	Method of protection..... :		N/A
G.5.3.2	Insulation		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Protection from displacement of windings..... :		—
G.5.3.3	Transformer overload tests		N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding temperatures		N/A
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW		N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter..... :		—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation ..... :		N/A
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A
G.5.3.4.7	Routine test		N/A
G.5.4	Motors	No motors.	N/A
G.5.4.1	General requirements		N/A
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4.2	Locked-rotor overload test		N/A
	Test duration (days) ..... :		—
G.5.4.5	Running overload test for DC motors		N/A
G.5.4.5.2	Tested in the unit		N/A
G.5.4.5.3	Alternative method		N/A
G.5.4.6	Locked-rotor overload test for DC motors		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature ..... :		N/A
G.5.4.6.3	Alternative method		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage ..... :		—
G.6	**Wire Insulation**		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.6.1	General	Evaluated in approved built-in switching power supply.	N/A
G.6.2	Enamelled winding wire insulation		N/A
G.7	**Mains supply cords**		N/A
G.7.1	General requirements		N/A
	Type..... :	No power supply cord provided.	—
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, *D* (mm) ..... :		—
	Radius of curvature after test (mm)..... :		—
G.7.6	Supply wiring space		N/A
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	**Varistors**		N/A
G.8.1	General requirements	Evaluated in approved built-in switching power supply.	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.9.1	Requirements		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
G.10.1	General		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**		N/A
G.11.1	General requirements	Evaluated in approved built-in switching power supply.	N/A
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
G.12	**Optocouplers**		N/A
	Optocouplers comply with IEC 60747-5-5 with specifics	Evaluated in approved built-in switching power supply.	N/A
	Type test voltage $V_{ini,a}$ ..... :		—
	Routine test voltage, $V_{ini,b}$ ..... :		—
G.13	**Printed boards**		P
G.13.1	General requirements	(See appended table 4.1.2)	P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board is compliant with the minimum requirements of clearances (5.4.2) and creepage distances (5.4.3)	P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation ..... :		N/A
	Number of insulation layers (pcs) ..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance		N/A
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements ..... :		N/A
G.15	**Pressurized liquid filled components**		N/A
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
G.16	**IC including capacitor discharge function (ICX)**		N/A
G.16.1	Condition for fault tested is not required		N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test..... :		—
	Mains voltage that impulses to be superimposed on ..... :		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test ..... :		—
G.16.3	Capacitor discharge test..... :		N/A
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	**General**		N/A
H.2	**Method A**		N/A
H.3	**Method B**		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) ..... :		—
H.3.1.2	Voltage (V) ..... :		—
H.3.1.3	Cadence; time (s) and voltage (V) ..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
H.3.1.4	Single fault current (mA): ..... :		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) ..... :		N/A
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		N/A
J.1	**General**		N/A
	Winding wire insulation..... :	Evaluated in approved built-in switching power supply.	—
	Solid round winding wire, diameter (mm) ..... :		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm^2)..... :		N/A
J.2/J.3	Tests and Manufacturing	Evaluated in approved built-in switching power supply.	—
K	**SAFETY INTERLOCKS**		N/A
K.1	**General requirements**		N/A
	Instructional safeguard ..... :		N/A
K.2	**Components of safety interlock safeguard mechanism**		N/A
K.3	**Inadvertent change of operating mode**		N/A
K.4	**Interlock safeguard override**		N/A
K.5	**Fail-safe**		N/A
K.5.1	Under single fault condition		N/A
K.6	**Mechanically operated safety interlocks**		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance ..... :		N/A
K.7	**Interlock circuit isolation**		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm)..... :		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm)..... :		N/A
	Electric strength test before and after the test of K.7.2 ..... :		N/A
K.7.2	Overload test, Current (A) ..... :		N/A
K.7.3	Endurance test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
K.7.4	Electric strength test		N/A
L	**DISCONNECT DEVICES**		P
L.1	**General requirements**	The equipment is a building-in type, evaluation is to be made during the final system approval.	N/A
L.2	**Permanently connected equipment**		N/A
L.3	**Parts that remain energized**	When AC inlet is disconnected, no hazardous voltage in the equipment.	P
L.4	**Single-phase equipment**	The AC as 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**		N/A
L.8	**Multiple power sources**		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 ..... :		N/A
M.3	**Protection circuits for batteries provided within the equipment**		N/A
M.3.1	Requirements		N/A
M.3.2	Test method		N/A
	Overcharging of a rechargeable battery		N/A
	Excessive discharging		N/A
	Unintentional charging of a non-rechargeable battery		N/A
	Reverse charging of a rechargeable battery		N/A
M.3.3	Compliance		N/A
M.4	**Additional safeguards for equipment containing a portable secondary lithium battery**		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance ..... :		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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
	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) ..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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**		P
	Material(s) used..... :	Metal alloy utilized and electrochemical potential is less than 0.6 V.	—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		P
	Value of *X* (mm)..... :	Considered. The equipment is a building-in type, evaluation is to be made during the final system approval.	—
P	**SAFEGUARDS AGAINST CONDUCTIVE OBJECTS**		P
P.1	**General**	No opening	P
P.2	**Safeguards against entry or consequences of entry of a foreign object**		N/A
P.2.1	General		N/A
P.2.2	Safeguards against entry of a foreign object		N/A
	Location and Dimensions (mm) ..... :	The equipment is a building-in type, evaluation is to be made during the final system approval.	—
P.2.3	Safeguards against the consequences of entry of a foreign object		N/A
P.2.3.1	Safeguard requirements		N/A
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment		N/A
	Transportable equipment with metalized plastic parts..... :		N/A
P.2.3.2	Consequence of entry test ..... :		N/A
P.3	**Safeguards against spillage of internal liquids**		N/A
P.3.1	General		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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**		N/A
Q.1	**Limited power sources**		N/A
Q.1.1	Requirements		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output		N/A
	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**		N/A
	Maximum output current (A) ..... :		N/A
	Current limiting method ..... :		—
R	**LIMITED SHORT CIRCUIT TEST**		N/A
R.1	**General**	The equipment is a building-in type, evaluation is to be made during the final system approval.	N/A
R.2	**Test setup**		N/A
	Overcurrent protective device for test ..... :		—
R.3	**Test method**		N/A
	Cord/cable used for test ..... :		—
R.4	**Compliance**		N/A
S	**TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
S.1	**Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W**		N/A
	Samples, material..... :		—
	Wall thickness (mm) ..... :		—
	Conditioning (°C) ..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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)	P
T.3	**Steady force test, 30 N ..... :**	(See appended table T.3)	P
T.4	**Steady force test, 100 N ..... :**		N/A
T.5	**Steady force test, 250 N ..... :**	(See appended table T.5)	P
T.6	**Enclosure impact test**	(See appended table T.6)	P
	Fall test		P
	Swing test		P
T.7	**Drop test ..... :**		N/A
T.8	**Stress relief test..... :**	(See appended table T.8)	P
T.9	**Glass Impact Test ..... :**	No glass act as safeguard	N/A
T.10	**Glass fragmentation test**		N/A
	Number of particles counted ..... :		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
T.11	**Test for telescoping or rod antennas**		N/A
	Torque value (Nm) ..... :		N/A
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION**		N/A
U.1	**General**		N/A
	Instructional safeguard **:**		N/A
U.2	**Test method and compliance for non-intrinsically protected CRTs**		N/A
U.3	**Protective screen**		N/A
V	**DETERMINATION OF ACCESSIBLE PARTS**		P
V.1	**Accessible parts of equipment**		P
V.1.1	General	The equipment is a building-in type, evaluation is to be made during the final system approval.	P
V.1.2	Surfaces and openings tested with jointed test probes	The equipment is a building-in type, evaluation is to be made during the final system approval.	P
V.1.3	Openings tested with straight unjointed test probes		P
V.1.4	Plugs, jacks, connectors tested with blunt probe		P
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		P
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
Y	**CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES**		N/A
Y.1	**General**		N/A
Y.2	**Resistance to UV radiation**		N/A
Y.3	**Resistance to corrosion**		N/A
Y.3	**Resistance to corrosion**		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by ..... :		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure ..... :		N/A
Y.3.5	Compliance		N/A

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

IEC 62368-1			
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)]	
264V/60Hz	Built-in SPS Output	Normal	4.31 Vrms	--	SS	DC	ES1
		Abnormal:	--	--	--	--	
		Single fault – SC/OC:	--	--	--	--	
264V/60Hz	Plastic enclosure to earth	Normal	--	0.05mApk	SS	DC	ES1
		Abnormal:	--	--	--	--	
		Single fault – SC/OC: SPS output	--	0.05mApk	SS	DC	
		Single fault – SC: E open	--	0.05mApk	SS	DC	
264V/60Hz	Metal enclosure to earth	Normal	--	--	--	--	ES1
		Abnormal:	--	--	--	--	
		Single fault – SC: E open	--	1.36mApk	SS	DC	
264V/60Hz	AC input	Normal	264 Vpeak	--	SS	AC	ES3
		Abnormal:	--	--	--	--	
		Single fault – SC/OC:	--	--	--	--	
264V/60Hz	AC output	Normal	264 Vpeak	--	SS	AC	ES3
		Abnormal:	--	--	--	--	
		Single fault – SC/OC:	--	--	--	--	
Supplementary information:							

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

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) #: Current (U2 / 500 peak value) is measured using the measuring network specified in Figure 4, IEC 60990:2016.

@: Current (U3 / 500 peak value) is measured using the measuring network specified in Figure 5, IEC 60990:2016.

5.4.1.8	**TABLE: Working voltage measurement**			P
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments
L/N to accessible part of AC output terminal	340	240	60	--
Primary live parts to secondary circuits/parts	340	240	60	--
Supplementary information:				

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**				N/A
Allowed impression diameter (mm).....:		≤ 2 mm			—
Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)	
--	--	--	--		
Supplementary information:					
--					

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/N to accessible part of AC input terminal	340	240	0.06	1.27	6.55	--	2.4	6.55

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

L/N to accessible part of AC output terminal	340	240	0.06	1.27	4.45	--	2.4	4.45
Primary live parts to secondary circuits/parts	340	240	0.06	3.0	38.02	--	4.8	38.02
Internal primary terminal to metal enclosure	340	240	0.06	1.27	22.36	--	2.4	22.36

Supplementary information:

1) Only for frequency above 30 kHz

2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied)

Note 1: Provide Material Group IIIb.

Note 2: FI=Functional insulation; BI=Basic insulation; SI=Supplementary insulation; RI=Reinforced insulation.

Note 3: Clearance was evaluated for altitude up to 5000m above sea level, correction factor for clearance is 1.48.

5.4.4.2	**TABLE: Minimum distance through insulation**				N/A
Distance through insulation (DTI) at/of		Peak voltage (V)	Insulation	Required DTI (mm)	Measured DTI (mm)
--		--	--	--	

Supplementary information:

--

5.4.4.9	**TABLE: Solid insulation at frequencies >30 kHz**						N/A
Insulation material		E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)
--		--	--	--	--	--	--

Supplementary information:

--

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
Input L/N and earthed metal enclosure		DC	2500V	No
Input L/N and plastic enclosure		DC	4000V	No
AC input to accessible output ports		DC	4000V	No
AC output to earthed metal enclosure		DC	2500V	No

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

AC output to plastic enclosure	DC	4000V	No
Supplementary information:			
--			

5.5.2.2	TABLE: Stored discharge on capacitors				P
Location	Supply voltage (V)	Operating and fault condition [1)]	Switch position	Measured voltage (Vpk)	ES Class
Phase to Neutral	264VAC/60Hz	Normal	-	6V	ES1
Phase to Earth		Normal	-	20V	ES1
Neutral to Earth		Normal	-	32V	ES1
Supplementary information:					
X-capacitors installed for testing: provided in the approved SPS module. [x] bleeding resistor rating: provided in the approved SPS module. [ ] ICX: 1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit					

5.6.6	TABLE: Resistance of protective conductors and terminations			P
Location	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)
Metal enclosure to inlet protective earthing conductor	32	2	0.16	0.005
Metal enclosure to inlet protective earthing conductor	40	2	0.24	0.006
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)	
Plastic Enclosure of LED board to earth	Normal Condition	264	--	0.05	60	ES1
	Fault Condition: SPS output	264	--	0.05	60	ES1
	Fault Condition: earth opened	264	--	0.05	60	ES1
Supplementary information:						

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

Abbreviation: SC= short circuit; OC= open circuit

Current (U2 / 500 peak value) is measured using the measuring network specified in Figure 4, IEC 60990:2016.

5.7.5	**TABLE: Earthed accessible conductive part**			P
Supply voltage (V) ..... :	264V/60Hz			—
Phase(s) ..... :	[X] Single Phase; [ ] Three Phase: [ ] Delta [ ] Wye			
Power Distribution System ..... :	[X] TN [X]TT [ ] IT			
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	
Metal enclosure to earth	1	1.46	< 25mA (ES2 Limit)	
	2*	--	--	
	3	--	--	
	4	--	--	
	5	--	--	
	6	--	--	
	8	--	--	
Supplementary Information:				
[1] Supply voltage is the anticipated maximum Touch Voltage.				
[2] Earthed neutral conductor [Voltage differences less than 1% or more].				
[3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3.				
[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.				
[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.				

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:						

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

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

All internal circuits	--	--	--	--	--	PS3 (Declared)
LED module	Normal	0.032	3.2	0.01	>3s	PS1
Signal port	Normal	0	0	0	>3s	PS1
AC output port	--	--	--	--	--	PS3 (Declared)
Supplementary information:						
1. Abbreviation: SC= short circuit; OC= open circuit 2. Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3. 3. Manufacturer declare: All internal circuits are declared as PS3. 4. The signal port is no voltage and current output, only used for data transmission.						

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 signal port)	> 50Vpk	--	> 15VA	Yes
Supplementary information:				
An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15.				

6.2.3.2	**TABLE: Determination of resistive PIS**		P
Location	Operating and fault condition	Dissipate power (W)	Arcing PIS? Yes / No
All circuits (except for signal port)	--	>15	Yes
Supplementary information:			
Abbreviation: SC= short circuit; OC= open circuit			

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

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

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

5.4.1.4, 9.3, B.1.5, B.2.6	**TABLE: Temperature measurements**				
Supply voltage (V) .....:	90Vac, 60Hz	264Vac, 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)
AC inlet (inside, near L pin)	47.8	35.0	--	--	70
AC outlet (inside, near L pin)	43.8	46.4	--	--	70
Internal primary wires between AC input connector and AC output connector	52.0	43.0	--	--	105
Internal primary wires between AC input connector and SPS module	50.7	50.3	--	--	105
SPS module enclosure near transformer	43.8	49.1	--	--	Ref
SPS module terminal block	50.1	45.0	--	--	Ref
LED Panel (inside) near SPS module	42.8	48.9	--	--	130
PCB near U9 on HUB board	44.6	42.5	--	--	130
CE3 body on HUB board	44.5	44.6	--	--	130
CD1 body on HUB board	40.8	44.4	--	--	130
T3 terminal	41.2	40.8	--	--	Ref
Internal wire	42.8	43.1	--	--	105
Ambient	35.0	35.0	--	--	105
Below accessible parts test at Tamb = 25°C					
LED light (front panel)	30.9	30.8	--	--	77

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

Metal enclosure near SPS moddule	33.5	33.0	--	--	60	
Ambient	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:

B.2.5	**TABLE: Input test**							P
U (V)	Hz	I (A)	I rated (A)	P (KW)	P rated (W)	Fuse No	I fuse (A)	Condition/status
90	50	9.228	-	0.8287	--	--	--	Display white picture, operated with max. power consumption and AC output loaded 9.0A.
100	50	9.214	10	0.9193	--	--	--	
240	50	9.199	10	2.1780	--	--	--	
264	50	9.191	-	2.3939	--	--	--	
90	60	9.226	-	0.8285	--	--	--	
100	60	9.213	10	0.9191	--	--	--	
240	60	9.196	10	2.1779	--	--	--	
264	60	9.190	-	2.3938	--	--	--	
90	50	0.228	-	0.0187	--	--	--	Display white picture, operated with max. power consumption and NO AC outlet output
100	50	0.214	10	0.0193	--	--	--	
240	50	0.199	10	0.018	--	--	--	
264	50	0.191	-	0.0179	--	--	--	
90	60	0.226	-	0.0185	--	--	--	
100	60	0.213	10	0.0191	--	--	--	
240	60	0.196	10	0.0179	--	--	--	
264	60	0.190	-	0.0178	--	--	--	

Supplementary information:

B.3, B.4	**TABLE: Abnormal operating and fault condition tests**						**P**
Ambient temperature T_{amb} (°C) ..... :					See below		—
Power source for EUT: Manufacturer, model/type, outputrating .. :					--		—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation	

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

Output of SPS module	SC	264	10 mins	--	--	EUT shut down by protection, No hazard.
C1	SC	264	10 mins	--	--	EUT shut down by protection, No hazard.

Supplementary information:

1) SC: shirt circuit.

2) The Hi-pot test conducted successfully after the completion of fault condition test.

3) Output terminal does not exceed ES1 limits.

4) Test condition: Display white picture, operated with max. power consumption and AC output loaded 6.7A.

M.3	**TABLE: Protection circuits for batteries provided within the equipment**	N/A
Is it possible to install the battery in a reverse polarity position? ..... :	--	—

Equipment Specification	Charging	
	Voltage (V)	Current (A)
	--	--

Manufacturer/type	Battery specification					
	Non-rechargeable batteries		Rechargeable batteries			
	Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)
			Voltage (V)	Current (A)		
--	--	--	--	--	--	--

Note: The tests of M.3.2 are applicable only when above appropriate data is not available.

Specified battery temperature (°C) ..... :		

Component No.	Fault condition	Charge/ discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
--	--	--	--	--	--	--	--

Supplementary information:

Abbreviation: SC= short circuit; 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**

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

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)**						N/A
Output Circuit	Condition	U_{oc} (V)	Time (s)	I_{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
--	--	--	--	--	--	--	
--	--	--	--	--	--	--	
Supplementary Information:							

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
All internal components	--	--	--	10	5	Clearance and creepage distances were not reduced below their required values
Front panel	Plastic	Min. 3.0	Test probe	30	5	No damage, no hazard.
Side enclosure	Metal	Min. 1.5	Test probe	30	5	No damage, no hazard.
Top enclosure	Metal	Min. 1.5	Test probe	30	5	No damage, no hazard.
Back enclosure	Metal	Min. 1.5	Test probe	30	5	No damage, no hazard.

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

Front panel	Plastic	Min. 3.0	Circular plane surface 30 mm in diameter	250	5	No damage, no hazard.
Side enclosure	Metal	Min. 1.5	Circular plane surface 30 mm in diameter	250	5	No damage, no hazard
Top enclosure	Metal	Min. 1.5	Circular plane surface 30 mm in diameter	250	5	No damage, no hazard
Back enclosure	Metal	Min. 1.5	Circular plane surface 30 mm in diameter	250	5	No damage, no hazard
Supplementary information:						
During and after the application of the test force, clearance and creepage distances were not reduced below their required values; there was no rupture, leaks or loosening of any connection or part.						

T.6, T.9	**TABLE: Impact test**				P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
Front panel	Plastic	Min. 3.0	1300	Enclosure remained intact, no damage, no hazard	
Side enclosure	Metal	Min. 1.5	1300	Enclosure remained intact, no damage, no hazard	
Top enclosure	Metal	Min. 1.5	1300	Enclosure remained intact, no damage, no hazard	
Back enclosure	Metal	Min. 1.5	1300	Enclosure remained intact, no damage, no hazard	
Supplementary information:					
During and after the tests, the energy source did not become accessible. During and after the tests, equipment safeguards were not defeated. There was no indication of a dielectric breakdown.					

T.7	**TABLE: Drop test**				N/A
Location/Part	Material	Thickness (mm)	Height (mm)	Observation	
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Supplementary information:					
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T.8	**TABLE: Stress relief test**				P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation

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

Front panel	Plastic	Min. 3.0	78	7	No damage, no hazard
Supplementary information:					
There was no softening of the enclosure, shrinkage, warping, cracking or other signs of deterioration that would result in exposure of internal parts. Creepage and Clearance spacings were not reduced.					

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)
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Supplementary information:			

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict

4.1.2	TABLE: Critical components information				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1)]
Switching power supply	SHENZHEN HWAWAN POWER CO. LTD.	HWA604V6FSD-SS	Input: 100-240VAC; 50/60Hz, 4A Max. Output: 4.2-4.6Vdc, 0-60A.	IEC 62368-1:2014	CB Certificate DK-90572-UL issued by UL (Demko)
Plastic enclosure	KINGFA SCI & TECH CO LTD	JH960 HT (M1) (sr), JH960 HT (M1) (ccc) (##)(sr), JH960-HT (M1) (ccc) (##)(sr)	For LED panel, PC/ABS, min. V-0, 80°C, min. thickness 3.0mm	UL 94	UL Recognized
AC mains appliance inlet	YFC-BONEAGLE ELECTRIC CO LTD	SF-81	Rated 250VAC, 10A, 70℃. IEC C14 configuration.	IEC 60320-1: 2015/ AMD1:2018	VDE 40033151
AC Outlet	YFC-BONEAGLE ELECTRIC CO LTD	SF-82F, SF-83F	Rated 250VAC, 10A, 70℃. IEC C13 configuration.	IEC 60320-1: 2015/ AMD1:2018	VDE 40051804
Input wire (AC input connector to Power supply)	ECHU SPECIAL CABLE & WIRE (KUNSHAN) CO LTD	1015	Rated min. AC 300V, 105℃, VW-1, 12AWG	UL 758	UL Recognized
(Alternative)	Interchangeable	Interchangeable	Rated min. AC 300V, 105℃, VW-1, 12AWG	UL 758	UL Recognized
Output wire (AC output connector to Power supply)	ECHU SPECIAL CABLE & WIRE (KUNSHAN) CO LTD	1015	Rated min. AC 300V, 105℃, VW-1, 12AWG	UL 758	UL Recognized
(Alternative)	Interchangeable	Interchangeable	Rated min. AC 300V, 105℃, VW-1, 12AWG	UL 758	UL Recognized
Earth wire	ECHU SPECIAL CABLE & WIRE (KUNSHAN) CO LTD	1015	Rated min. AC 300V, 105℃, VW-1, 12AWG	UL 758	UL Recognized

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict

(Alternative)	Interchangeable	Interchangeable	Rated min.AC300V, 105℃, VW-1, 12AWG, coloured in Green	UL 758	UL Recognized
Protective Earthing Terminal	Interchangeable	Interchangeable	Terminal: 7.0Φmm,Zn coated Iron; Screw head with washer Φ5.3mm x 9.0mm, Zn coated Iron.	IEC 62368-1:2018	Tested in appliance
Secondary wire (Power supply output to main board)	ECHU SPECIAL CABLE & WIRE (KUNSHAN) CO LTD	1015	80°C, 300V, VW-1, min.24AWG,	UL 758	UL Recognized
(Alternative)	Interchangeable	Interchangeable	105°C, 300V, VW-1, min.12AWG,	UL 758	UL Recognized
All PCB	LONG YAN JINSHIYU ELECTRONIC LTD	JSY-1	V-0, 130°C	UL 796	UL Recognized
(Alternative)	Interchangeable	Interchangeable	Min. V-1, min.130 °C	UL 796	UL Recognized
LED lamp	FOSHAN NATIONSTAR OPTOELECTRONICS CO., LTD	IMD-M09T	Rated 10mA, 1.6-2.4V,24mW for red LED; 2.2-3.2V,32mW for green LED, 2.3-3.2V,32mW for blue LED.	IEC 62471: 2006	Tested in appliance in CNAS report: AGC12429221101SS01 by Attestation of Global Compliance (Shenzhen) Co,, Ltd.
Metal enclosure	Interchangeable	Interchangeable	Min. thickness 1.5mm, secured by clips and screws. Measured 640mm by 480mm by 70mm.	IEC 62368-1:2018	Tested in appliance
Metal Handle	Interchangeable	Interchangeable	One Provided. Min. thickness 1.5mm. With overall dimension: 108 x 26 x 44mm. Secured on Metal enclosure.	IEC 62368-1:2018	Tested in appliance
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

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)	P
	Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2020+A11:2020. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2018. Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2018 are prefixed "Z".	P
	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords	P

1	**Modification to Clause 3.**		N/A
3.3.19	**Sound exposure** *Replace 3.3.19 of IEC 62368-1 with the following definitions:*		N/A
3.3.19.1	**momentary exposure level, MEL** metric for estimating 1 s sound exposure level from the HD 483-1 S2 test signal applied to both channels, based on EN 50332-1:2013, 4.2. Note 1 to entry: MEL is measured as A-weighted levels in dB. Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.	Not such equipment	N/A
3.3.19.3	**sound exposure, E** A-weighted sound pressure (*p*) squared and integrated over a stated period of time, *T* Note 1 to entry: The SI unit is Pa^2 s. $E = \int_0^T p(t)^2 \, \mathrm{d}t$		N/A

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict
3.3.19.4	**sound exposure level, SEL** logarithmic measure of sound exposure relative to a reference value, E_0, typically the 1 kHz threshold of hearing in humans. Note 1 to entry: *SEL* is measured as A-weighted levels in dB. $SEL = 10 \lg\left(\frac{E}{E_0}\right)$ dB Note 2 to entry: See B.4 of EN 50332-3:2017 for additional information.	Built-in equipment, shall be evaluated in end system	N/A
3.3.19.5	**digital signal level relative to full scale, dBFS** 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 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.		N/A

2	**Modification to Clause 10**		N/A
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: – 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.).		N/A

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict
10.6.1.1 (Cont'd)	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: – professional equipment; NOTE 3Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment. – hearing aid equipment and other devices for assistive listening; – the following type of analogue personal music players: • long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and • cassette player/recorder; 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. – a player while connected to an external amplifier that does not allow the user to walk around while in use. For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply. The relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		N/A

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict
10.6.1.2	**Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz** 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.		N/A
10.6.2	**Classification of devices without the capacity to estimate sound dose**		N/A
10.6.2.1	**General** This standard is transitioning from short-term based (30 s) requirements to long-term based (40 hour) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3. For classifying the acoustic output $L_{Aeq,T}$, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period. 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. NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song does not exceed the required limit. For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dB.	Not such equipment	N/A

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

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict
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. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1.		N/A
10.6.3.3	**RS2 limits (new)** RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1.		N/A

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict

10.6.4	**Requirements for maximum sound exposure**		N/A
10.6.4.1	**Measurement methods** All volume controls shall be turned to maximum during tests. Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.		N/A
10.6.4.2	**Protection of persons** Except as given below, protection requirements for parts **accessible** to **ordinary persons**, **instructed persons** and **skilled persons** are given in 4.3. NOTE 1 Volume control is not considered a **safeguard.** Between RS2 and an **ordinary person**, the **basic safeguard** may be replaced by an **instructional safeguard** in accordance with Clause F.5, except that the **instructional safeguard** shall be placed on the equipment, or on the packaging, or in the instruction manual. Alternatively, the **instructional safeguard** may be given through the equipment display during use. The elements of the **instructional safeguard** shall be as follows: – element 1a: the symbol , IEC 60417-6044 (2011-01) – element 2: “High sound pressure” or equivalent wording – element 3: “Hearing damage risk” or equivalent wording – element 4: “Do not listen at high volume levels for long periods.” or equivalent wording An **equipment safeguard** shall prevent exposure of an **ordinary person** to an RS2 source without intentional physical action from the **ordinary person** and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off.	Built-in equipment, shall be evaluated in end system	N/A

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict
10.6.4.2 (Cont'd)	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. NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed. 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. A **skilled person** shall not be unintentionally exposed to RS3.		N/A
10.6.5	**Requirements for dose-based systems**		N/A
10.6.5.1	**General requirements** Personal music players shall give the warnings as provided below when tested according to EN 50332-3, using the limits from this clause. 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. 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.	Not such equipment	N/A

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict
10.6.5.2	**Dose-based warning and requirements** When a dose of 100 % *CSD* is reached, and at least at every 100 % further increase of *CSD*, 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. The warning shall at least clearly indicate that listening above 100 % *CSD* leads to the risk of hearing damage or loss.		N/A
10.6.5.3	**Exposure-based requirements** 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. 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. The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster. 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. NOTE In case the source is known not to be music (or test signal), the EL may be disabled.		N/A

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

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict

3	**Modification to the whole document**	P
	Delete all the "country" notes in the reference document according to the following list:	P

0.2.1	Note 1 and 2	1	Note 4 and 5	3.3.8.1	Note 2
3.3.8.3	Note 1	4.1.15	Note	4.7.3	Note 1 and 2
5.2.2.2	Note	5.4.2.3.2.2 Table 12	Note c	5.4.2.3.2.4	Note 1 and 3
5.4.2.3.2.4 Table 13	Note 2	5.4.2.5	Note 2	5.4.5.1	Note
5.4.10.2.1	Note	5.4.10.2.2	Note	5.4.10.2.3	Note
5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3 and 4
5.6.8	Note 2	5.7.6	Note	5.7.7.1	Note 1 and Note 2
8.5.4.2.3	Note	10.2.1 Table 39	Note 3 and 4 and 5	10.5.3	Note 2
~~10.6.1~~	Note 3	F.3.3.6	Note 3	Y.4.1	Note
Y.4.5	Note				

4	**Modification to Clause 1**		P
1	**Add** the following note: *NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.*		P

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict

5	**Modification to 4.Z1**		P
4.Z1	**Add** the following new subclause after 4.9: 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): 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; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for **pluggable equipment type B** or **permanently connected equipment**, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for **pluggable equipment type A** the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		P

6	**Modification to 5.4.2.3.2.4**		N/A
5.4.2.3.2.4	**Add** the following to the end of this subclause: The requirement for interconnection with **external circuit** is in addition given in EN 50491-3:2009.	No connection to external circuit.	N/A

7	**Modification to 10.2.1**		N/A
10.2.1	**Add** the following to c) and d) in table 39: For additional requirements, see 10.5.1.	No such radiation from the equipment.	N/A

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict

8	**Modification to 10.5.1**		N/A
10.5.1	**Add** the following after the first paragraph: For RS 1 compliance is checked by measurement under the following conditions: 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. NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm^2, at any point 10 cm from the outer surface of the apparatus. 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. For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level. NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.		N/A

9	**Modification to G.7.1**		N/A
G.7.1	**Add** the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.	Should be evaluated during national approval. Power cord optional provided.	P

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict

10	**Modification to Bibliography**	N/A
	Add the following notes for the standards indicated: 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

11	**ADDITION OF ANNEXES**		--
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		N/A
4.1.15	**Denmark, Finland, Norway** and **Sweden** 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. The marking text in the applicable countries shall be as follows: 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”		N/A

IEC62368_1E – ATTACHMENT			
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		N/A
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.		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 • 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 • 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 • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV.	No such external circuits.	N/A

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict
5.4.11.1 and Annex G (Cont'd)	It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: • the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; • the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.	No such external circuits.	N/A
5.5.2.1	**Norway** After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Not power system	N/A
5.5.6	**Finland, Norway** and **Sweden** To the end of the subclause the following is added: 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.	No such resistors.	N/A
5.6.1	**Denmark** **Add** to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. *Justification:* In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.		N/A

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict
5.6.4.2.1	**Ireland and United Kingdom** After the indent for **pluggable equipment type A**, the following is added: – the **protective current rating** is taken to be 13 A, this being the largest rating of fuse used in the **mains** plug.		N/A
5.6.4.2.1	**France** After the indent for **pluggable equipment type A**, the following is added: – in certain cases, the **protective current rating** of the circuit supplied from the mains is taken as 20 A instead of 16 A.		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm^2 to 1,5 mm^2 in cross-sectional area.		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.		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 a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example.	Not such system.	N/A

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict
5.7.7.1 (Cont'd)	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: "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)" 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. Translation to Norwegian (the Swedish text will also be accepted in Norway): "Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet." Translation to Swedish: "Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet."	Not such system.	N/A
8.5.4.2.3	**United Kingdom** Add the following after the 2nd dash bullet in 3rd 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.	No external circuits.	N/A

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict
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	Not direct plug-in equipment	N/A
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 compliance with Standard Sheet DKA 1-3a or DKA 1-1c. 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 *Justification:* Heavy Current Regulations, Section 6c		N/A

IEC62368_1E – ATTACHMENT			
Clause	Requirement + Test	Result – Remark	Verdict
G.4.2	**United Kingdom** To the end of the subclause the following is added: 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.	Not direct plug-in equipment	N/A
G.7.1	**United Kingdom** To the first paragraph the following is added: 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. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	Built-in equipment, shall be evaluated in end system	N/A
G.7.1	**Ireland** To the first paragraph the following is added: 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		N/A
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

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

ZC	**ANNEX ZC, NATIONAL DEVIATIONS (EN)**		N/A
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. *Justification*: 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)	N/A

N/A

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

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

ATTACHMENT TO TEST REPORT

IEC 62368-1
U.S.A. AND CANADA NATIONAL DIFFERENCES
(AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT – PART 1: SAFETY REQUIREMENTS)

Differences according to.....: CSA/UL 62368-1:2019

TRF template used: ..... : IECEE OD-2020-F3, Ed. 1.1

Attachment Form No. .....: US_CA_ND_IEC62368_1E

Attachment Originator .....: UL(US)

Master Attachment .....: Dated 2021-02-04

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IEC 62368-1 - US and Canadian National Differences
Special National Conditions based on Regulations and Other National Differences

1 (1DV.1) (1.3)	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part 1, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.		P
1 (1DV.2.1)	This standard includes additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities. See Annex DVB.		N/A
1 (1DV.2.2)	This standard includes additional requirements for equipment intended for mounting under cabinets. See Annex DVC.		N/A
1 (1DV.2.3)	IEC 62368-3 clause 5 for DC power transfer at ES1 or ES2 voltage levels is considered informative. IEC 62368-3 clause 6 for remote power feeding telecommunication (RFT) circuits is considered normative (see ITU K.50). Alternatively, equipment with RFT circuits are given in either UL 2391 or CSA/UL 60950-21. RFT-C circuits are not permitted unless the RFT-C circuit complies with RFT-V limits (≤ 200V per conductor to earth).		N/A
1 (1DV.3)	For protection against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72 for additional requirements.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
1 (DV.5)	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A
4.1 (4.1.17)	*For lengths exceeding 3.05 m, external interconnecting cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.*		N/A
	For lengths 3.05 m or less, external interconnecting cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.6 (4.6.2)	Wire-wrap terminals have special construction and performance requirements.		N/A
4.8 (4.8.3, 4.8.4.5, 4.8.5)	Coin / button cell batteries have modified special construction and performance requirements.	Not accessible & soldered on PCB	N/A
5.4.2.3.2 (5.4.2.3.2.1)	*Surge Arrestors and Transient Voltage Surge Suppressors installed external to the equipment are required to comply with the appropriate NEC and CEC requirements.*		N/A
5.5.9	Receptacles, rated 125-V, single phase, 15- or 20-A accessible to either ordinary, instructed, or skilled persons are required to be provided with GFCI Protection for Personnel if the equipment containing the receptacles is installed outdoors. The protection devices are required to comply with UL 943, and CAN/CSA C22.2 No.144.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.7, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment.		N/A
5.7.8 (5.7.8.1)	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure is required to comply with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Annex F (F.3.3.9)	Output terminals provided for supply of other equipment, except mains supply, are required to be marked with a maximum rating or reference to equipment permitted to be connected.	Built-in equipment, shall be evaluated in end system	N/A
Annex F (F.3.7)	Outdoor Enclosures are required to be classified and marked in accordance with UL 50 or 50E, or CAN/CSA C22.2 No. 94.1 or 94.2.		N/A
Annex G (G.7)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
	Power supply cords for outdoor equipment are required to be suitable outdoor use type as required by Section 400.4 of the NEC and Rule 4-012 of the CEC, i.e., marked “W.”		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
Annex Q (Q.3)	Equipment with paired conductor and/or coax communications cables/wiring connected to building wiring are required to have special voltage, current, power and marking requirements.		N/A
Annex DVA (1)	Equipment that is designed such that it may be powered from a separate electrical service, is required to meet applicable requirements for service equipment for control and protection of services and their installation and complies with Article 230 of the National Electrical Code (NEC), NFPA 70 and Section 6 of the Canadian Electrical Code, Part I, CSA C22.1.		N/A
	Equipment intended for use in spaces used for environmental air (plenums) are subjected to special flammability requirements for heat and visible smoke release.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m^3 (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. and Canadian Regulations.		N/A
	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
	Storage batteries and battery management equipment, other than associated with lead-acid batteries, and including battery backup systems that are not an integral part of stationary AV and ICT equipment, such as provided in separate cabinets, are required to be certified (listed) to the appropriate standard(s) for such storage batteries and equipment.		N/A
Annex DVA (5.6)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		N/A
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m^2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a minimum flammability classification of V-1.		N/A
Annex DVA (10.3)	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (10.5)	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (F.3.3.4)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or that are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."		N/A
Annex DVA (F.3.3.6)	Equipment identified for ITE (computer) room installation is required to be marked with the rated current.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.		N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-400 and 10-612.		N/A
Annex DVA (G.4.3)	Interconnection of units by conductors supplied by a limited power source, or a Class 2 circuit defined in the NEC/CEC may have field wiring connections other than specified in DVH.3, such as wire-wrap and crimp-on types, if the limited power source and Class 2 circuits are separated from all other circuits by barriers, routing or fixing.		N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
Annex DVA (G.7)	Flexible cords used outdoors are required to have the suffix “W” marked on the flexible cord.		N/A
Annex DVA (M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
Annex DVA (Q)	If applicable per NEC 725.121(C), some limited power sources supplied from AV/ICT equipment are required to have a label indicating the maximum voltage and maximum current, or maximum voltage and nominal current output for each connection point. Where multiple connection points have the same rating, a single label is permitted to be used.		N/A
	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1are required to be marked with the voltage rating and “Class 2” or equivalent. The marking is located adjacent to the terminals and visible during wiring.		N/A
	Applicable parts of Chapter 8 of the NEC, and Rules 54 and 60 of the CEC, may be applicable to ITE installed outdoors with connections to communication systems.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These equipment and components include: appliance couplers, attachment plugs, battery backup systems, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, modular data centers, power supply cords, some power distribution equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.		N/A
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.		N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are required to be in accordance with the NEC/CEC.		N/A
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified.		N/A
	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm^2).		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.		N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

Photo No.: 1 Title: External view of the appliance

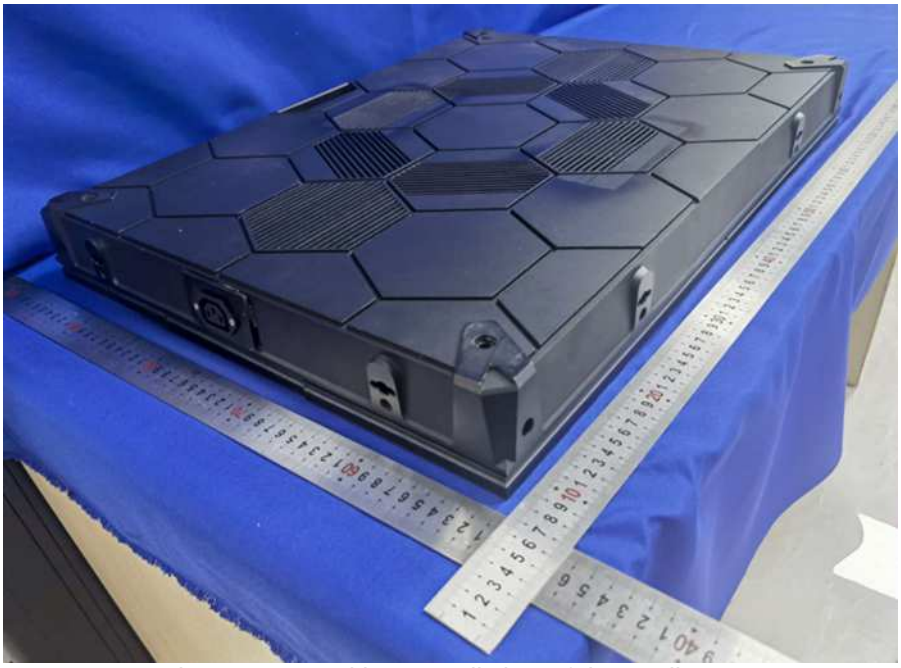

Photo No.: 2 Title: Overall view of the appliance

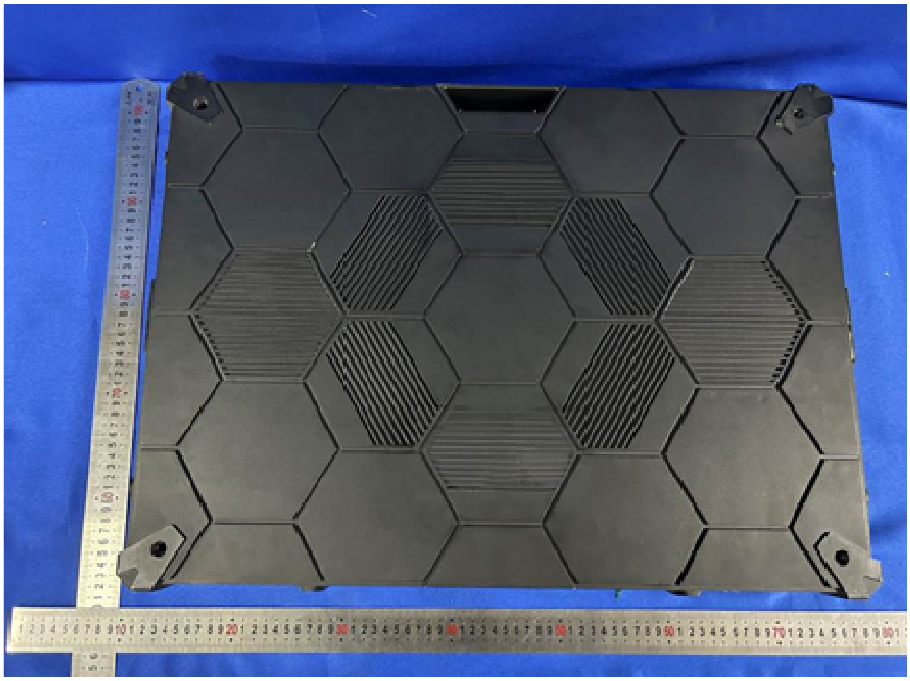

Photo No.: 3 Title: Rear view of the appliance

Photo No.: 4 Title: AC Output of the appliance

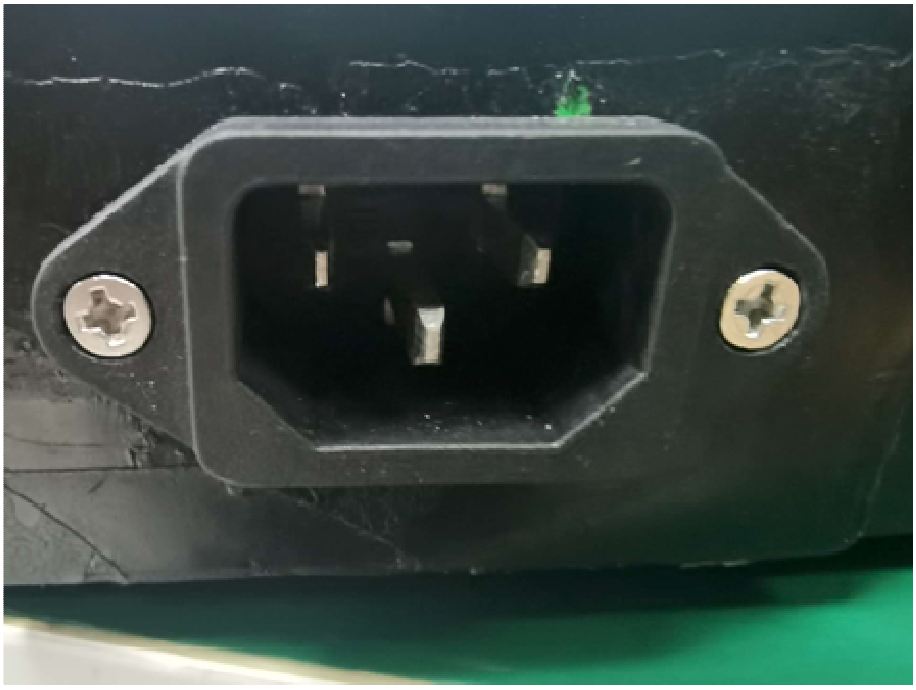

Photo No.: 5 Title: AC Mains appliance inlet of the appliance

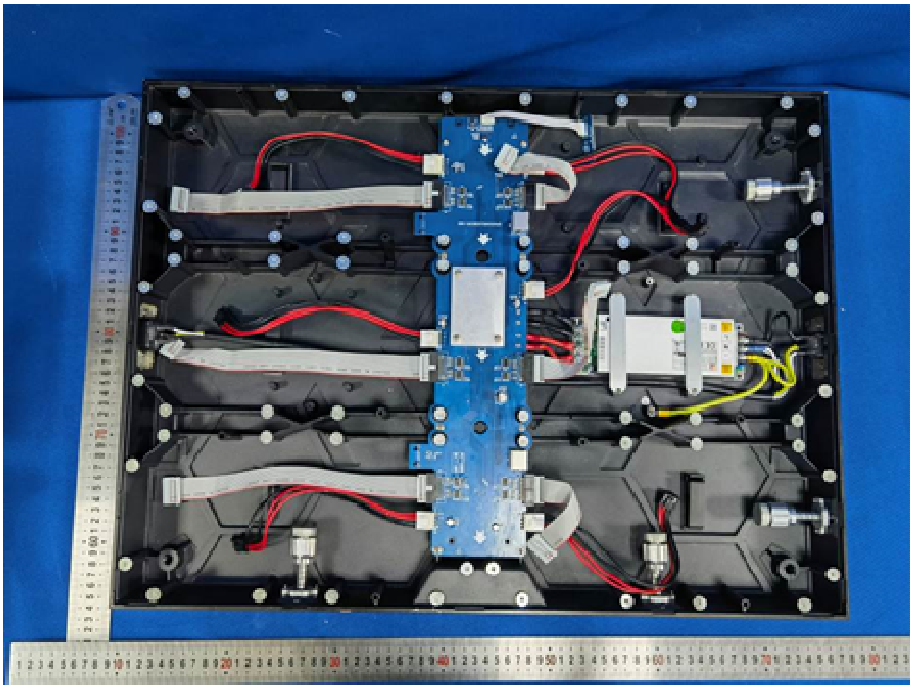

Photo No.: 6 Title: Internal View of the appliance

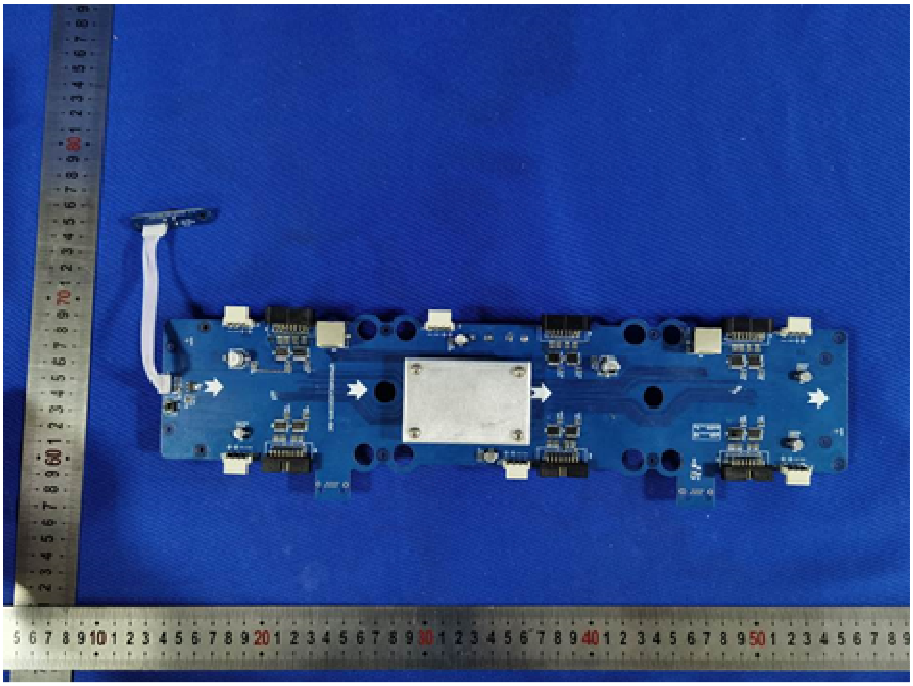

Photo No.: 7 Title: Control PCB, Components View

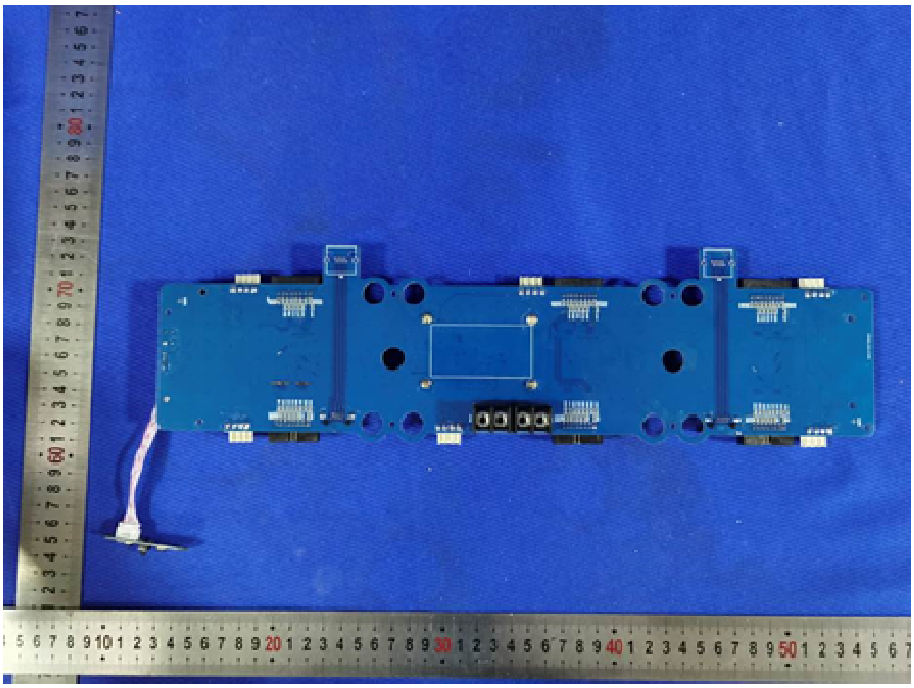

Photo No.: 8 Title: Control PCB, Components View

Photo No.: 9 Title: Protective Earthing Terminal View

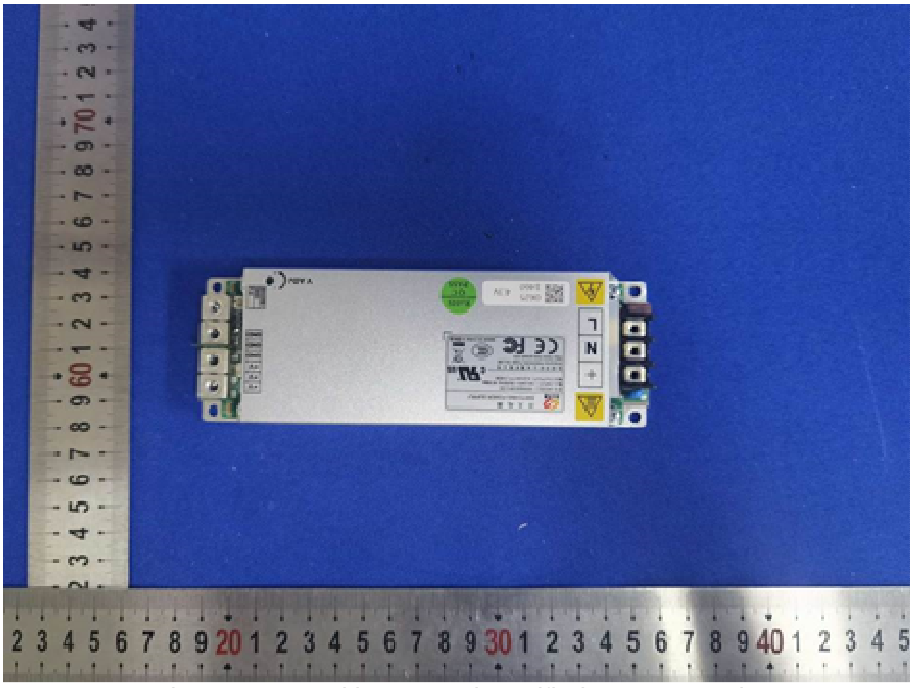

Photo No.:10 Title: Internal Certified Power Supply

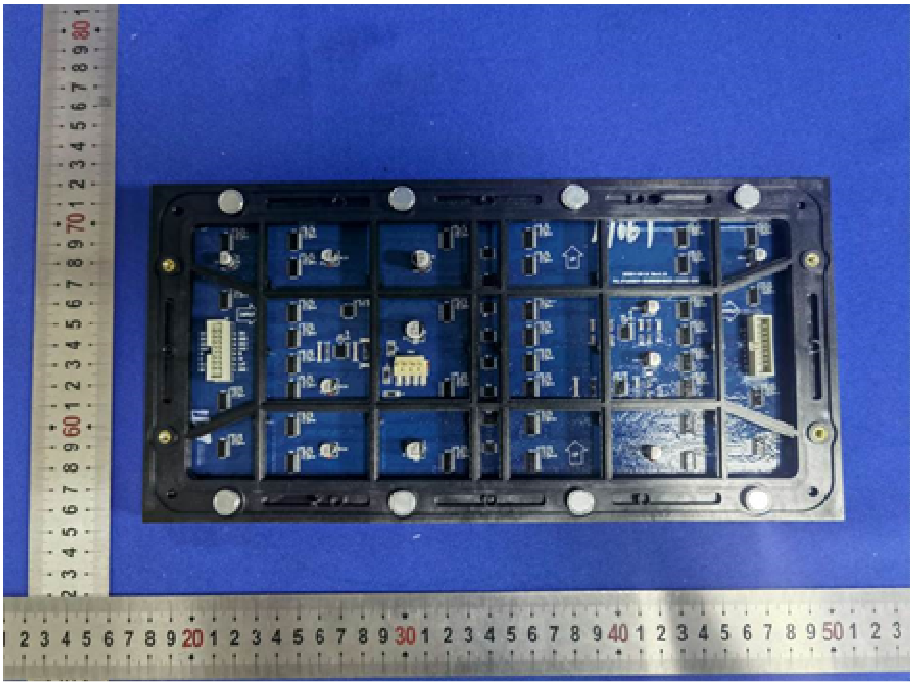

Photo No.:11 Title: LED module View