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.....:	2281963.50A
Date of issue.....:	2024-04-04
Total number of pages.....:	79
Name of Testing Laboratory preparing the Report.....:	DEKRA Certification B.V.
Applicant's name.....:	Lappset Yalp B.V.
Address.....:	Nieuwenkampsmaten 12, 7472 DE Goor, Netherlands
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

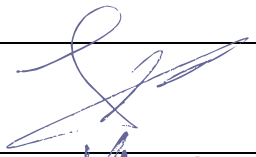
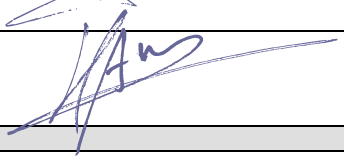
If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description..... :	Indoor and outdoor electronic play object.
Trade Mark(s) .....:	Lappset
Manufacturer..... :	Lappset Yalp B.V.
Model/Type reference..... :	Lappset Luna / YA3400
Ratings..... :	100 – 240 Vac , 50/60 Hz, Max. 150 W, IP54

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	DEKRA Certification B.V.	
Testing location/ address..... :		Meander 1051, 6825 MJ, Arnhem, Netherlands	
Tested by (name, function, signature)..... :		Engin Urulu (project handler) supervised by W. Huang	
Approved by (name, function, signature).. :		H.A. van Nielen (reviewer)	
☐	**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):

product picture (11 pages)

2281963.50B – EU group differences and special national deviations (23 pages)

2281963.50C – U.S.A. and Canada national differences (8 pages)

2281963.50D – Australia / New Zealand national differences (35 pages)

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
Full type testing according IEC 62368-1:2018 and EN IEC 62368-1:2020+A11:2020	**DEKRA Certification B.V.** Meander 1051, 6825 MJ, Arnhem, Netherlands

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

☒ **The product fulfils the requirements of EU group difference EN IEC 62368-1:2020+A11:2020, CSA/UL 62368-1:2019 and AS/NZS 62368.1:2022**

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

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

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

Information on uncertainty of measurement:
The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.
IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer.

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

Copy of marking plate:

LAPPSET®

Model: **Lappset Luna**
Model no: **YA3400**

Made in the Netherlands
www.lappset.com

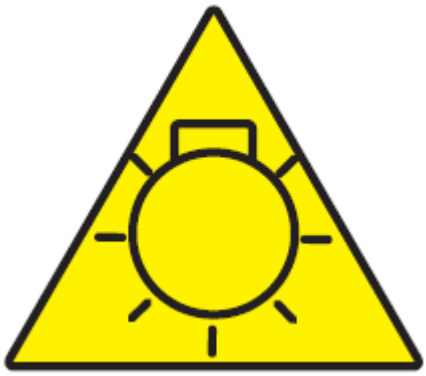
100-240 V~
50/60 Hz
Max. 150 W
IP54

DEKRA
E107438

Complies with:
UL-62368-1
CSA C22.2 No. 62368-1

Contains FCC ID: R17LE910CXNF.
The device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including that may cause undesired operation.
Contains IC: 5131A-LE910CXNF.

NEN-EN1176-1:2017
2024|2025|2026 1|2|3|4|5|6|7|8|9|10|11|12



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.....:	☒ 16 A / 20 A (for US & CA) 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: not mains connected, no OVC category
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 (interior) ☒ PD 3 (exterior)
Manufacturer's specified T_{ma}.....:	☒ Outdoor: minimum – 10 to +40 °C
IP protection class .....:	☐ IPX0 ☒ IP54
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 ☒ 50 m
Mass of equipment (kg) .....:	18 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 ..... :	2023-11-26
Date (s) of performance of tests..... :	2024-03-04 to 2024-04-03

General remarks:

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

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

)

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

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

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

Name and address of factory (ies) ..... :	Lappest Yalp B.V. Nieuwenkampsematen 12, 7472 DE Goor, Netherlands

General product information and other remarks:

The Luna is an interactive sound game device. The camera technology tracks the movement of the players on the floor, and makes it possible to play the different games. To be able to play in the dark, the unit is also equipped with a set of LED lights built in the bow construction.
The play floor is accessible and multiple children can play at
the same time.
The system is connected to the internet by a LTE CAT 4 modem module (GSM / ethernet) to be able to adjust the Luna settings (volume, time, games) and view user statistics or upload new games.

The following in/output are available and are all within the limits of ES1:

- Ethernet

Conditions of acceptability:

- The equipment is provided with appliance inlet incorporated in appliances,
- The supply cord with plug is not part of the equipment and testing.
- The installation and ceiling mounting shall be according to the local requirement as per the country it is installed.
- The equipment shall be installed minimum 3 m high. Details are given in manual
- The unit may only be installed and electrically connected by trained and instructed personnel.
- The equipment must be connected to a reliable protective earth according to the national electrical installation instructions.
- The external connection to the secondary I/O (Ethernet) shall be reinforced and isolated from mains
- The equipment shall be provided with an overcurrent protection and disconnecting device, or a combination, which is marked as such in the end use application.
- .

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	Ordinary	Basic insulation to enclosure	Enclosure with protected earth	-
ES3: primary SMPS	Ordinary	Accepted based on approved SMPS Input terminal reinforced isolated from ordinary person. Housing of SMPS is earthed		
ES1: all secondary circuits after approved SMPS	Ordinary	No safeguard		
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: primary circuits Powerbox	PCB, wiring, enclosure material	Temperatures are limited and do not attain ignition temperatures under normal operation	Full metal fire enclosure All material > 4 gram are at least V-1 Control of Fire Spread (CFS): Fire enclosure V-1 material (Distance ≥ 13 mm arcing PIS and ≥ 5 mm to a resistive PIS)	N/A
PS3: primary circuits SMPS				
PS3: power supply secondary circuits, outputs and cables				
PS3: Input circuit YIN2 board before fuse F5 (2 A slow)				
YIN 2.52 board				
PS3 J1 (1 / 2) [Vin 12-18V]	PCB, wiring, enclosure material	Temperatures are limited and do not attain ignition temperatures under normal operation.	Control of Fire Spread Fire enclosure V-0/ metal material (Distance ≥ 13 mm arcing PIS and ≥ 5 mm to a resistive PIS); Inside fire enclosure combustible materials V-2	N/A
PS3 J2 (1,3-19 / 2,4-20) [Vin_SW] = *SMPS output*				
PS3 J4 (1 / 2) [OUT_SW]1				
PS3				

J6 (1 / 2) [OUT_SW2]			classified Components mounted on V-0 PCB; Wirings VW-1	
PS1 J9 (1 / 4)			N/A	N/A
PS1 J14 (8,7 / 5,6) [5Vsys]			N/A	N/A
PS1 J10 – J12			N/A	N/A
PS1 J11 (1 / 4) USB			N/A	N/A
PS3: LED lamps	Enclosure, wiring	Overcurrent protection in power supply	Single fault conditions in the LED not resulting in arcing or resistive PIS, approved flame retardant led holder and wiring.	N/A
PS1: Ethernet	PCB, plastics and external circuits	Temperatures are limited and do not attain ignition temperatures under normal operation	N/A	N/A
PS1: Antenna GSM				
PS1: USB camera				
PS2: Speakers	PCB, wiring, enclosure material	Fuse 4 A in the YIN2 box	Temperatures are limited and do not attain ignition temperatures under normal and SFC operation	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	Body Part	Safeguards		

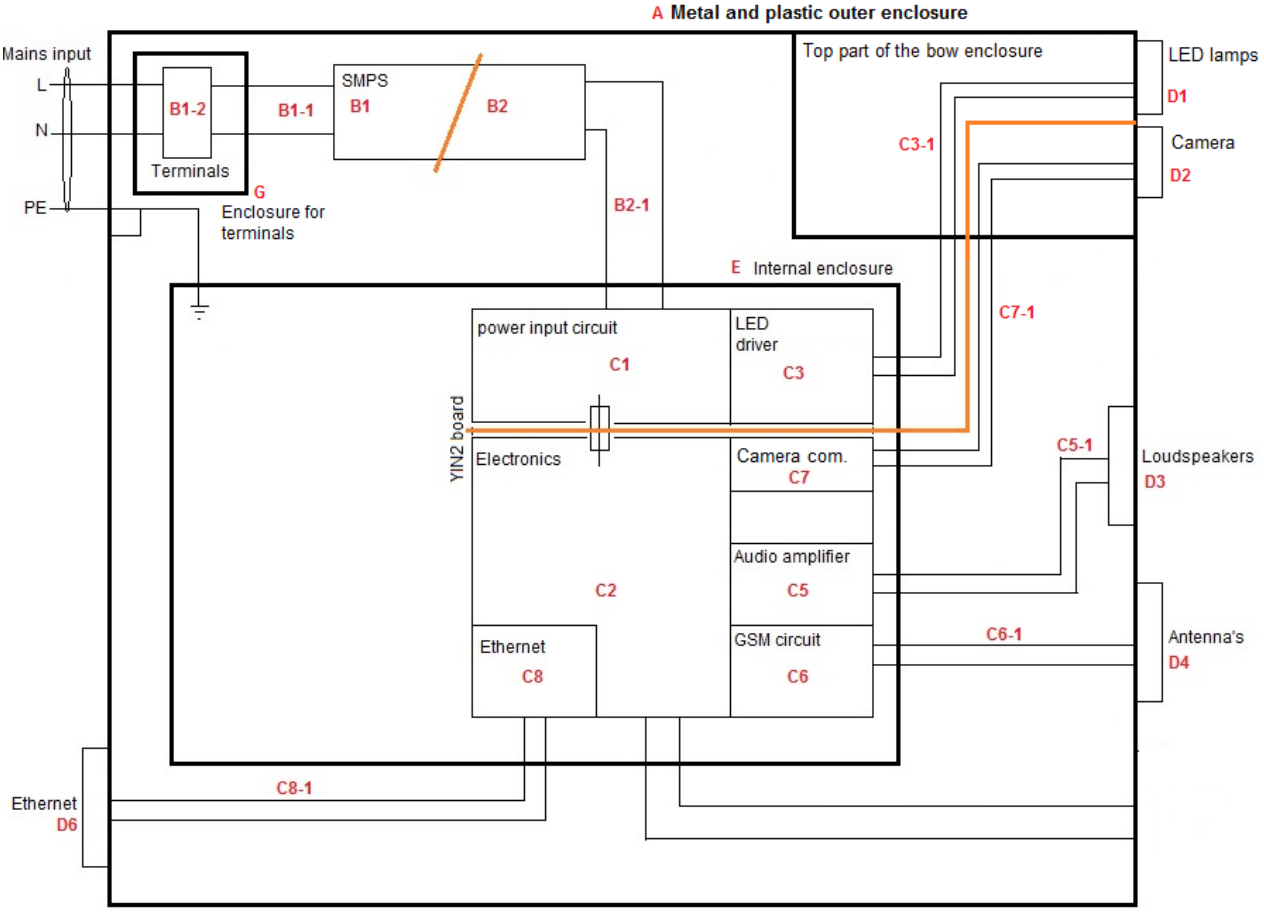
(e.g. MS3: Plastic fan blades)	(e.g. Ordinary)	B	S	R
MS3: metal and plastic enclosure (weight and stability)	Ordinary	Prescribed ceiling mounting system and stability calculation	Mounting instructions	-
MS1: metal enclosure / controls (no sharp edges)	Ordinary	No safeguard required		
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: enclosure/controls	Ordinary	System enclosure	-	-
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
RS2: LED lamps (Risk Group 2)	Ordinary	Instructional Safeguard in accordance clause F.5 used Instructional safeguard is comprised of element 1a, element 3 and 4		
Supplementary Information: "B" – Basic Safeguard; "S" – Supplementary Safeguard; "R" – Reinforced Safeguard (…): Pin numbers of connector. […] : Signal names as used in schematics. : YIN2 Rev 2.52				

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**



Part	Energy source					
	ES	**PS**	**MS**	**TS**	**RS**	**Comments**
A (Metal and plastic outer enclosure	ES1	-	MS3	TS1	-	Shall be fixed to the celling
B1 (Primary mains circuits of the power supply)	ES3	PS3	-	-	-	-
B1-1 (Mains wiring)	ES3	PS3	-	-	-	-
B1-2 (Mains terminals)	ES3	PS3	-	-	-	-

	B2 (Secondary circuits of the power supply)	ES1	PS3	-	-	-	-
	B2-1 (Secondary wiring and connectors)	ES1	PS3	-	-	-	-
	C1 (YIN2 board power input circuit)	ES1	PS3	-	--	-	-
	C2 (YIN2 board processing and other circuits)	ES1	PS2	-	-	-	PS2 due to fuse 2 A Yin2 box
	C3 (YIN2 board LED lamp power circuits)	ES1	PS3	-	-	-	-
	C3-1 (LED lamp power cabling)	ES1	PS3	-	-	-	-
	C5 (YIN2 board audio circuits)	ES1	PS2	-	-	-	PS2 due to fuse 2 A Yin2 box
	C5-1 (Loudspeaker cabling and connectors)	ES1	PS2	-	-	RS1	PS2 due to fuse 2 A Yin2 box
	C6 (YIN2 board GSM circuits)	ES1	PS2	-	-	-	PS2 due to fuse 2 A Yin2 box
	C6-1 (GSM cabling and connectors)	ES1	PS1	-	TS1	-	Circuit impedance and Electronically protected after 2 A fuse, see table B.4 max RF output 1.65 W (see TUV report)
	C7 (YIN2 board Camera circuits)	ES1	PS1	-	-	-	Electronically protected, also in single fault condition, USB overcurrent protection mar 2.7 A at 5 Vdc (13.5 W)
	C7-1 (Camera cables)	ES1	PS1	-	-	-	Electronically protected, also in single fault USB overcurrent protection mar 2.7 A condition
	C8 (YIN2 board Ethernet circuits)	ES1	PS1	-	-	-	Electronically protected, also in single fault condition
	C8-1 (Ethernet cabling)	ES1	PS1	-	-	-	Electronically protected, also in single fault condition
	D1 (LED lamps)	ES1	PS3	-	-	-	Overcurrent protection in power supply
	D3 (Loudspeakers)	ES1	PS2	-	-	-	PS2 due to fuse 2 A Yin2 box the amplifier is equipped with overcurrent protection, see table B.4
	D4 (GSM Antenna's)	ES1	PS1	-	-	-	After 2 A fuse, circuit impedance and electronically protected, also in single fault

						condition, see table B.4

Notes:
For ES determination levels see table 5.2

For PS classification see table 6.2.2

For PIS classifications see tables 6.2.3

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components	Certified components are used in accordance with their ratings, certification and they comply with the applicable parts of the standard. Components, for which no relevant IEC standards exist, have been tested under the condition occurring in the equipment using applicable parts of IEC62368-1	P
4.1.3	Equipment design and construction		P
4.1.4	Specified ambient temperature for outdoor use (°C) ..... :	-10 °C - +40 °C	P
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	Metal and plastic enclosure with additional IP54 rated internal enclosures	P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Clause T.2, T.5)	P
4.4.3.3	Drop tests	Ceiling mounted fixed equipment	N/A
4.4.3.4	Impact tests	(See Annex T.6) Metal enclosure with plastic parts (vandalism proof) with additional IP54 rated internal enclosures. Accepted as such	P
4.4.3.5	Internal accessible safeguard tests	No such parts	N/A
4.4.3.6	Glass impact tests	No glass	N/A
4.4.3.7	Glass fixation tests		N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests		N/A
4.4.3.9	Air comprising a safeguard	See Annex T) Part of the approved power	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
		supply, mains wiring, connectors and terminals. Also covered with external metal / plastic enclosure that is connected to protective earth	
4.4.3.10	Accessibility, glass, safeguard effectiveness		N/A
4.4.4	Displacement of a safeguard by an insulating liquid	No such liquid	N/A
4.4.5	Safety interlocks	No interlocks	N/A
4.5	**Explosion**		P
4.5.1	General	(See Annex M for batteries)	P
4.5.2	No explosion during normal/abnormal operating condition		P
	No harm by explosion during single fault conditions		P
4.6	**Fixing of conductors**	Mains connection is part of approved terminal. For all other secondary connections only approved crimped connectors used. See appended Table 4.1.2	P
	Fix conductors not to defeat a safeguard		P
	Compliance is checked by test..... :	(See Clause T.2)	P
4.7	**Equipment for direct insertion into mains socket–outlets**		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**		P
4.8.1	General	Not user replaceable or accessible	P
4.8.2	Instructional safeguard..... :	Not user replaceable	P
4.8.3	Battery compartment door/cover construction	No access without a tool	P
	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

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Clause	Requirement + Test	Result - Remark	Verdict
4.9	**Likelihood of fire or shock due to entry of conductive object**		N/A
4.10	**Component requirements**		N/A -
4.10.1	Disconnect Device	Externally provided. See condition of acceptability	N/A
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	ES3 and ES1	P
5.2.2.2	Steady-state voltage and current limits..... :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits..... :		N/A
5.2.2.4	Single pulse limits..... :		N/A
5.2.2.5	Limits for repetitive pulses..... :		N/A
5.2.2.6	Ringing signals		N/A
5.2.2.7	Audio signals	(See clause E.1) Class D audio signals which are not accessible with a maximum voltage of 15 V.	P
5.3	**Protection against electrical energy sources**		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	Approved power supply, mains cable and terminals fully covered in a Class I construction.	P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits	Only ES1 accessible	P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards	Only the metal PE bonded construction with thermoplastic polymers cover can be accessed.	P
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements		P
	Test with test probe from Annex V	According installation manual the sample installed minimum 3 m high and no internal parts are accessible	—
5.3.2.2 a)	Air gap – electric strength test potential (V)..... :	No bare internal conductive parts, all internal parts are insulated	N/A
5.3.2.2 b)	Air gap – distance (mm) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.2.3	Compliance		N/A
5.3.2.4	Terminals for connecting stripped wire	Terminal for mains connection cannot touch any secondary parts due to internal enclosure and approval terminal	P
5.4	**Insulation materials and requirements**		P
5.4.1.2	Properties of insulating material	Part of approved components	P
5.4.1.3	Material is non-hygroscopic	Non-hygroscopic material and all internal enclosure and approval terminal IP54 rated	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 ..... :	PD3:exterior, PD2:interior	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	All insulating material is part of approved components used within its specification	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 ..... :	340 V	P
5.4.1.9	Insulating surfaces		N/A
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..... :		N/A
5.4.2	Clearances		P
5.4.2.1	General requirements		P
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance		N/A
	Temporary overvoltage ..... :		—
5.4.2.3	Procedure 2 for determining clearance	Part of approved components no test performed	P
5.4.2.3.2.2	a.c. mains transient voltage ..... :		—
5.4.2.3.2.3	d.c. mains transient voltage ..... :		—
5.4.2.3.2.4	External circuit transient voltage..... :		—
5.4.2.3.2.5	Transient voltage determined by measurement ..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.4	Determining the adequacy of a clearance using an electric strength test ..... :	Mains parts are all approved and accepted components. No test deemed necessary,	N/A
5.4.2.5	Multiplication factors for clearances and test voltages ..... :	1x, maximum 2000 m	N/A
5.4.2.6	Clearance measurement ..... :	(See appended table 5.4.2)	P
5.4.3	Creepage distances	Terminal construction and mains interconnection accepted based on approved components. (See appended Table 4.1.2)	P
5.4.3.1	General		P
5.4.3.3	Material group ..... :	IIIb or better	—
5.4.3.4	Creepage distances measurement..... :	(See appended table 5.4.3)	P
5.4.4	Solid insulation		P
5.4.4.1	General requirements	Part of approved components in mains circuits, no additional tests performed	P
5.4.4.2	Minimum distance through insulation ..... :	All circuits with insulation material stressed with ES3 are part of approved components	P
5.4.4.3	Insulating compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) ..... :		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
	Number of layers (pcs) ..... :		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material ..... :		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P, K_R, d, V_{PW} (V) ..... :		N/A
	Alternative by electric strength test, tested voltage (V), K_R ..... :		N/A
5.4.5	Antenna terminal insulation	No Antenna terminal	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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	BI secondary wiring is fully separated from hazardous live circuits	P
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning	No hygroscopic materials used	N/A
	Relative humidity (%), temperature (°C), duration (h) ..... :		—
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		N/A
5.4.10	Safeguards against transient voltages from external circuits	Ethernet connection is internally isolated, no further I/O, only mains input and all accessible parts are metal and PE connected	N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test ..... :		N/A
5.4.10.2.3	Steady-state test..... :		N/A
5.4.10.3	Verification for insulation breakdown for impulse test ..... :		N/A
5.4.11	Separation between external circuits and earth		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V)..... :		—
	Nominal voltage U_{peak} (V) ..... :		—
	Max increase due to variation ΔU_{sp} ..... :		—
	Max increase due to ageing ΔU_{sa} ..... :		—
5.4.11.3	Test method and compliance ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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**		-
5.5.1	General		P
5.5.2	Capacitors and RC units	Part of the approved SMPS	P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector..... :	0 V after 2 s	P
5.5.3	Transformers	(See Annex G.5.3) Part of the approved SMPS	P
5.5.4	Optocouplers	(See sub-clause 5.4 or Annex G.12) Part of the approved SMPS	P
5.5.5	Relays	No relays	N/A
5.5.6	Resistors	No such resistors	N/A
5.5.7	SPDs	No SPD's	N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable ..... :		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	Refer to installation manual	P
5.6.2.2	Colour of insulation		P
5.6.3	Requirement for protective earthing conductors		P
	Protective earthing conductor size (mm^2) ..... :		—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors		P
5.6.4.1	Protective bonding conductors		P
	Protective bonding conductor size (mm^2)..... :	12 AWG / 2.5 mm^2	—
5.6.4.2	Protective current rating (A) ..... :	16 A (EU), 20 A (CA/US)	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.5	Terminals for protective conductors		P
5.6.5.1	Terminal size for connecting protective earthing conductors (mm) ..... :		N/A
	Terminal size for connecting protective bonding conductors (mm) ..... :	Approved terminal suitable for 0.2-4mm^2 conductor	P
5.6.5.2	Corrosion	Approved terminals in IP54 rated enclosure	P
5.6.6	Resistance of the protective bonding system	PE interconnection contains only approved terminals and construction in IP54 rated enclosure	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	Approved PE terminal in IP54 rated box.	P
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		P
5.7.2.2	Measurement of voltage		P
5.7.3	Equipment set-up, supply connections and earth connections		P
5.7.4	Unearthed accessible parts ..... :		N/A
5.7.5	Earthed accessible conductive parts ..... :		N/A
5.7.6	Requirements when touch current exceeds ES2 limits		N/A
	Protective conductor current (mA) ..... :		N/A
	Instructional Safeguard ..... :		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits		N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A

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

6	**ELECTRICALLY- CAUSED FIRE**		P
6.2	**Classification of PS and PIS**		P
6.2.2	Power source circuit classifications ..... :	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS ..... :	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS ..... :	(See appended table 6.2.3.2)	P
6.3	**Safeguards against fire under normal operating and abnormal operating conditions**		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials..... :	(See appended table B.1.5 and B.3)	P
	Combustible materials outside fire enclosure..... :		P
6.4	**Safeguards against fire under single fault conditions**		-
6.4.1	Safeguard method	Control of fire spread for the internal PS2 and PS3 parts	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits	Ethernet circuit (I/O) and GSM antenna's / start button protected by impedance (in circuit)	P
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits	Overcurrent protection and single fault testing for LED lamps and fire enclosure for mains and unlimited 15 V circuits.	P
6.4.3.1	Supplementary safeguards		P
6.4.3.2	Single Fault Conditions..... :	(See appended table B.3 and B.4)	P
	Special conditions for temperature limited by fuse	No such circuits	N/A
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards		P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.6	Control of fire spread in PS3 circuits		P
6.4.7	Separation of combustible materials from a PIS	No combustible materials in the YIN2 box and near mains parts. The LED lamps and their cables are considered PS3 and are covered with an approval	P
6.4.7.2	Separation by distance	No combustible materials in close proximity of PS2 and PS3 circuits	N/A
6.4.7.3	Separation by a fire barrier	No such barriers	N/A
6.4.8	Fire enclosures and fire barriers	YIN2 circuit (PS3) are covered by an approved internal flame retardant enclose. LED wiring is part of an approved set and is double insulated with flame retardant outer cover. Mains connected power supply is equipped with its own aluminium enclosure. Mains wiring and connectors are approved and flame retardant. Mains interconnection terminals are located in an approved internal flame retardant enclose.	P
6.4.8.2	Fire enclosure and fire barrier material properties	Outer enclosure is metal and plastic covers and inner enclosures are ABS plastic rated UL94V-0 and aluminium	P
6.4.8.2.1	Requirements for a fire barrier	No such parts	N/A
6.4.8.2.2	Requirements for a fire enclosure		P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	Power box, SMPS and YIN2-box have their own fire enclosure. External enclosure not considered as fire enclosure	P
6.4.8.3.1	Fire enclosure and fire barrier openings	No openings in inner enclosure	N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties		N/A
	Openings dimensions (mm) ..... :		N/A
6.4.8.3.4	Bottom openings and properties	No openings in the bottom of the internal boxes	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Openings dimensions (mm) ..... :		N/A
	Flammability tests for the bottom of a fire enclosure	Metal and approved UL94V-0 Plastic (internal enclosures)	N/A
	Instructional Safeguard..... :		N/A
6.4.8.3.5	Side openings and properties	No such doors	N/A
	Openings dimensions (mm) ..... :		N/A
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)..... :	Only cover in external enclosure which is not regarded as fire enclosure and can only be opened by service engineer. Internal fire enclosure is not accessible	N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating..... :		P
6.4.9	Flammability of insulating liquid..... :	Not used	N/A
6.5	**Internal and external wiring**		-
6.5.1	General requirements		P
6.5.2	Requirements for interconnection to building wiring ..... :	No such wiring	N/A
6.5.3	Internal wiring size (mm^2) for socket-outlets ..... :	No socket-outlets	N/A
6.6	**Safeguards against fire due to the connection to additional equipment** Only Ethernet as I/O which driven by a PS1 circuit and isolated by a transformer		P

7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		P
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** Only non-accessible nor user replaceable internal lithium memory battery DL/CR2032 (See Annex M)		P

8	**MECHANICALLY-CAUSED INJURY**		P
8.2	**Mechanical energy source classifications**		P
8.3	**Safeguards against mechanical energy sources**		P
8.4	**Safeguards against parts with sharp edges and corners**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.4.1	Safeguards	MS1:	P
	Instructional Safeguard..... :		N/A
8.4.2	Sharp edges or corners		N/A
8.5	**Safeguards against moving parts**		N/A
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts	No moving parts	N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard ..... :		N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m) ..... :		N/A
	Space between end point and nearest fixed mechanical part (mm)..... :		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly ..... :		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts ..... :		N/A
8.5.4.3.3	Disconnection from the supply	Refer to Condition of Acceptability. Disconnecting device shall be provided in end-use application	N/A
8.5.4.3.4	Cut type and test force (N)..... :		N/A
8.5.4.3.5	Compliance		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.5	High pressure lamps		N/A
	Explosion test..... :		N/A
8.5.5.3	Glass particles dimensions (mm) ..... :		N/A
8.6	**Stability of equipment**		N/A
8.6.1	General	Ceiling mounted. Fixed equipment no stability requirement.	N/A
	Instructional safeguard ..... :		N/A
8.6.2	Static stability		N/A
8.6.2.2	Static stability test..... :		N/A
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm) ..... :		—
	Tilt test		N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test..... :		N/A
8.7	**Equipment mounted to wall, ceiling or other structure**		P
8.7.1	Mount means type..... :	Ceiling mounted	P
8.7.2	Test methods		P
	Test 1, additional downwards force (N)..... :	3 x 18 kg	P
	Test 2, number of attachment points and test force (N)..... :		N/A
	Test 3 Nominal diameter (mm) and applied torque (Nm) ..... :		N/A
8.8	**Handles strength**		N/A
8.8.1	General		N/A
8.8.2	Handle strength test		N/A
	Number of handles..... :		—
	Force applied (N) ..... :		—
8.9	**Wheels or casters attachment requirements**		N/A
8.9.2	Pull test		N/A
8.10	**Carts, stands and similar carriers**		N/A
8.10.1	General	No carts, stands and similar carriers	N/A
8.10.2	Marking and instructions..... :		N/A
8.10.3	Cart, stand or carrier loading test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Loading force applied (N)..... :		N/A
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Force applied (N) ..... :		—
8.10.6	Thermoplastic temperature stability		N/A
8.11	**Mounting means for slide-rail mounted equipment (SRME)**		-
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**		P
9.5	**Requirements for safeguards**		P
9.5.1	Equipment safeguard	Enclosure and height	P
9.5.2	Instructional safeguard ..... :		N/A
9.6	**Requirements for wireless power transmitters**		-
9.6.1	General		N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance..... :	(See appended table 9.6)	N/A
10	**RADIATION**		P
10.2	**Radiation energy source classification**		P
10.2.1	General classification		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Lasers ..... :		—
	Lamps and lamp systems ..... :	LED lamps are approved and tested, classified as RS1. See list of critical components	—
	Image projectors..... :		—
	X-Ray ..... :		—
	Personal music player..... :		—
10.3	**Safeguards against laser radiation**		N/A
	The standard(s) equipment containing laser(s) comply..... :		N/A
10.4	**Safeguards against optical radiation from lamps and lamp systems (including LED types)**		P
10.4.1	General requirements	Risk Group 2 LED lamps are accepted based on approval.	P
	Instructional safeguard provided for accessible radiation level needs to exceed		P
	Risk group marking and location ..... :		P
	Information for safe operation and installation		P
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure..... :	No UV radiation.	N/A
10.4.3	Instructional safeguard..... :		P
10.5	**Safeguards against X-radiation**		N/A
10.5.1	Requirements		N/A
	Instructional safeguard for skilled persons..... :		—
10.5.3	Maximum radiation (pA/kg) ..... :		—
10.6	**Safeguards against acoustic energy sources**		N/A
10.6.1	General	Not a personal music player, No headphone or headphone connection	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

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

B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.1	**General**		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.2	**Normal operating conditions**		-
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers..... :	(See Annex E)	P
B.2.3	Supply voltage and tolerances		P
B.2.5	Input test ..... :	(See appended table B.2.5)	P
B.3	**Simulated abnormal operating conditions**		P
B.3.1	General		P
B.3.2	Covering of ventilation openings	No ventilation openings	N/A
	Instructional safeguard..... :		N/A
B.3.3	DC mains polarity test	Not DC mains	N/A
B.3.4	Setting of voltage selector	Auto range approved power supply	N/A
B.3.5	Maximum load at output terminals	No output terminals	N/A
B.3.6	Reverse battery polarity	Not user replaceable battery	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.3.7	Audio amplifier abnormal operating conditions	Amplifier output terminals shorted, no hazard due to internal electronic protection	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions..... :	(See appended table B.3)	N/A
B.4	**Simulated single fault conditions.**		P
B.4.1	General		P
B.4.2	Temperature controlling device	No such device	N/A
B.4.3	Blocked motor test	No motors	N/A
B.4.4	Functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation		P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No hazard expected due to overcurrent protection and fire enclosure.	N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnection of passive components		P
B.4.7	Continuous operation of components		P
B.4.8	Compliance during and after single fault conditions ..... :	(See appended table B.4)	P
B.4.9	Battery charging and discharging under single fault conditions	(See Annex M)	P
C	**UV RADIATION**		N/A
C.1	**Protection of materials in equipment from UV radiation**		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	**UV light conditioning test**		N/A
C.2.1	Test apparatus ..... :		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure test		N/A
C.2.4	Xenon-arc light-exposure test		N/A
D	**TEST GENERATORS**		-
D.1	**Impulse test generators**		N/A
D.2	**Antenna interface test generator**		N/A
D.3	**Electronic pulse generator**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		P
E.1	**Electrical energy source classification for audio signals**		N/A
	Maximum non-clipped output power (W) ..... :	THD+N = 10% F= 1khz 20.2 W (Rating)	—
	Rated load impedance (Ω) ..... :	8Ω per channel, no user access to the terminals	—
	Open-circuit output voltage (V)..... :	Max 15 V	—
	Instructional safeguard..... :	See Clause F.5	—
E.2	**Audio amplifier normal operating conditions**		P
	Audio signal source type..... :	Analog	—
	Audio output power (W) ..... :	12 Wmax (calculated) Reduced by application)	—
	Audio output voltage (V) ..... :	10.6 Vrms (calculated)	—
	Rated load impedance (Ω) ..... :	8 Ω	—
	Requirements for temperature measurement	(See Table B.1.5)	P
E.3	Audio amplifier abnormal operating conditions	(See Table B.3, B.4)	P
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	**General**		P
	Language ..... :		—
F.2	**Letter symbols and graphical symbols**		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific		P
F.3	**Equipment markings**		P
F.3.1	Equipment marking locations	On the exterior of the equipment	P
F.3.2	Equipment identification markings	Location see photos	P
F.3.2.1	Manufacturer identification ..... :	Lappset Yalp B.V.	P
F.3.2.2	Model identification ..... :	Lappset Luna / YA3400	P
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of the supply voltage ..... :	AC	P
F.3.3.4	Rated voltage ..... :	100-240 V	P
F.3.3.5	Rated frequency ..... :	50/60 Hz	P
F.3.3.6	Rated current or rated power ..... :	150 W	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device	No such a device	N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings ..... :	No appliance outlet and socket-outlet	N/A
F.3.5.2	Switch position identification marking..... :	Disconnecting device with marking shall be supplied in the end use. See Conditions of Acceptability	N/A
F.3.5.3	Replacement fuse identification and rating markings ..... :	No user replaceable fuses	N/A
	Instructional safeguards for neutral fuse..... :	No user replaceable batteries	N/A
F.3.5.4	Replacement battery identification marking..... :	No user replaceable batteries	N/A
F.3.5.5	Neutral conductor terminal		P
F.3.5.6	Terminal marking location	Only to be accessed and installed by qualified personnel. Marked with L, N and PE	P
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I equipment		P
F.3.6.1.1	Protective earthing conductor terminal ..... :	In Power box marked with earth symbol IEC60417-5017	P
F.3.6.1.2	Protective bonding conductor terminals ..... :	Only internal and not user accessible as part of factory wiring	P
F.3.6.2	Equipment class marking..... :		N/A
F.3.6.3	Functional earthing terminal marking ..... :		N/A
F.3.7	Equipment IP rating marking..... :	Metal and plastic enclosure with additional IP54 rated internal enclosures	P
F.3.8	External power supply output marking..... :	No such outputs	N/A
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings		P
F.4	**Instructions**		P
	a) Information prior to installation and initial use		P
	b) Equipment for use in locations where children not likely to be present		N/A
	c) Instructions for installation and interconnection		P
	d) Equipment intended for use only in restricted access area		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	e) Equipment intended to be fastened in place		P
	f) Instructions for audio equipment terminals	Internal audio is not accessible and terminals are ES1 level only	N/A
	g) Protective earthing used as a safeguard	Refer to installation manual	P
	h) Protective conductor current exceeding ES2 limits	Earth current not exceeding ES2 Accepted based on approved power supply	N/A
	i) Graphic symbols used on equipment		P
	j) Permanently connected equipment not provided with all-pole mains switch	Not permanently connected equipment	N/A
	k) Replaceable components or modules providing safeguard function	No such components or modules	N/A
	l) Equipment containing insulating liquid	No such liquids	N/A
	m) Installation instructions for outdoor equipment	Only requirements for installation not for normal use. There is no need to mark the equipment with the mentioned element markings	P
F.5	Instructional safeguards		P
G	**COMPONENTS**		P
G.1	**Switches**		N/A
G.1.1	General	No switches	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 relays	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	No thermal cut-offs used	N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N/A
	b) Thermal links tested as part of the equipment		N/A
G.3.2.2	Test method and compliance		N/A
G.3.3	PTC thermistors		N/A
G.3.4	Overcurrent protection devices		N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		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**		
G.4.1	Spacings	Approved mains terminals and connectors with adequate spacing	P
G.4.2	Mains connector configuration ..... :	Permanently connected	N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	Interconnection between supply and terminals does not fit any mains sockets	N/A
G.5	**Wound components**		P
G.5.1	Wire insulation in wound components	Part of approved SMPS	P
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		P
G.5.3.1	Compliance method..... :	Part of approved SMPS	P
	Position ..... :		N/A
	Method of protection..... :		N/A
G.5.3.2	Insulation		N/A
	Protection from displacement of windings ..... :		—
G.5.3.3	Transformer overload tests		N/A
G.5.3.3.1	Test conditions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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 used	N/A
G.5.4.1	General requirements		N/A
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4.2	Locked-rotor overload test		N/A
	Test duration (days) ..... :		—
G.5.4.5	Running overload test for DC motors		N/A
G.5.4.5.2	Tested in the unit		N/A
G.5.4.5.3	Alternative method		N/A
G.5.4.6	Locked-rotor overload test for DC motors		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature ..... :		N/A
G.5.4.6.3	Alternative method		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage ..... :		—
G.6	**Wire Insulation**		P
G.6.1	General		P
G.6.2	Enamelled winding wire insulation		N/A
G.7	**Mains supply cords**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	General requirements	Mains supply cords is not part of testing	N/A
	Type..... :		—
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	Not hand-held equipment	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		P
G.7.6.1	General requirements		P
G.7.6.2	Stranded wire		P
G.7.6.2.1	Requirements		P
G.7.6.2.2	Test with 8 mm strand		P
G.8	**Varistors**		N/A
G.8.1	General requirements	No varistors	N/A
G.8.2	Safeguards against fire		N/A
G.8.2.1	General		N/A
G.8.2.2	Varistor overload test		N/A
G.8.2.3	Temporary overvoltage test		N/A
G.9	**Integrated circuit (IC) current limiters**		N/A
G.9.1	Requirements	No IC current limiters	N/A
	IC limiter output current (max. 5A)..... :		—
	Manufacturers' defined drift ..... :		—
G.9.2	Test Program		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.9.3	Compliance		N/A
G.10	**Resistors**		N/A
G.10.1	General	No such resistors	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	No such caps and RC units	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**		-
	Optocouplers comply with IEC 60747-5-5 with specifics	Part of approved SMPS	P
	Type test voltage $V_{ini,a}$ ..... :		—
	Routine test voltage, $V_{ini,b}$ ..... :		—
G.13	**Printed boards**		P
G.13.1	General requirements	Certified printed wiring board	P
G.13.2	Uncoated printed boards		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) ..... :		—
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**		-
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
G.16	**IC including capacitor discharge function (ICX)**		N/A
G.16.1	Condition for fault tested is not required	No ICX caps used	N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test..... :		—
	Mains voltage that impulses to be superimposed on ..... :		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test..... :		—
G.16.3	Capacitor discharge test ..... :		N/A
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	**General**		N/A
H.2	**Method A**		N/A
H.3	**Method B**		N/A
H.3.1	Ringing signal	No ringing signals	N/A
H.3.1.1	Frequency (Hz) ..... :		—
H.3.1.2	Voltage (V) ..... :		—
H.3.1.3	Cadence; time (s) and voltage (V) ..... :		—
H.3.1.4	Single fault current (mA): ..... :		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)..... :		N/A
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		-
J.1	**General**		N/A
	Winding wire insulation ..... :		—
	Solid round winding wire, diameter (mm) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm^2) ..... :		N/A
J.2/J.3	Tests and Manufacturing	(See separate test report)	—
K	**SAFETY INTERLOCKS**		N/A
K.1	**General requirements**		N/A
	Instructional safeguard..... :		N/A
K.2	**Components of safety interlock safeguard mechanism**		N/A
K.3	**Inadvertent change of operating mode**		N/A
K.4	**Interlock safeguard override**		N/A
K.5	**Fail-safe**		N/A
K.5.1	Under single fault condition		N/A
K.6	**Mechanically operated safety interlocks**		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance..... :		N/A
K.7	**Interlock circuit isolation**		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm)..... :		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm)..... :		N/A
	Electric strength test before and after the test of K.7.2..... :		N/A
K.7.2	Overload test, Current (A)..... :		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	**DISCONNECT DEVICES**		P
L.1	**General requirements**		P
L.2	**Permanently connected equipment**		N/A
L.3	**Parts that remain energized**	No such parts	N/A
L.4	**Single-phase equipment**	Plug connector, non-rewirable	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

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Clause	Requirement + Test	Result - Remark	Verdict

M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		P
M.1	**General requirements**		P
M.2	**Safety of batteries and their cells**		P
M.2.1	Batteries and their cells comply with relevant IEC standards ..... :	Approved CR2032 battery, IEC60086, UL1642. (Refer to appended Table 4.1.2)	P
M.3	**Protection circuits for batteries provided within the equipment**		P
M.3.1	Requirements	Excessive discharge and unintentional charging in NC and SFC prevented by design of equipment. Battery is not user accessible.	P
M.3.2	Test method		P
	Overcharging of a rechargeable battery	Non-rechargeable battery	N/A
	Excessive discharging	See test results table Annex M	P
	Unintentional charging of a non-rechargeable battery		P
	Reverse charging of a rechargeable battery		N/A
M.3.3	Compliance	(See appended table M.3)	P
M.4	**Additional safeguards for equipment containing a portable secondary lithium battery**		P
M.4.1	General	No secondary cells used	N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance ..... :		N/A
M.4.3	Fire enclosure..... :		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation and procedure for the drop test		N/A
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): .... :		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
M.5	**Risk of burn due to short-circuit during carrying**		-
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.6	**Safeguards against short-circuits**		P
M.6.1	External and internal faults		P
M.6.2	Compliance		P
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**		-
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_Z (m^3/s) ..... :		—
M.8.2.3	Correction factors ..... :		—
M.8.2.4	Calculation of distance d (mm) ..... :		—
M.9	**Preventing electrolyte spillage**		-
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

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Clause	Requirement + Test	Result - Remark	Verdict
N	**ELECTROCHEMICAL POTENTIALS**		P
	Material(s) used ..... :	Terminals are approved components. The bonding between the terminals is: Copper to stainless steel (0V), stainless steel to steel (0V)	—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		P
	Value of *X* (mm) ..... :	PD3:1,50 mm	—
P	**SAFEGUARDS AGAINST CONDUCTIVE OBJECTS**		-
P.1	**General**		P
P.2	**Safeguards against entry or consequences of entry of a foreign object**		N/A
P.2.1	General	No openings in internal enclosure	N/A
P.2.2	Safeguards against entry of a foreign object		N/A
	Location and Dimensions (mm) ..... :		—
P.2.3	Safeguards against the consequences of entry of a foreign object		N/A
P.2.3.1	Safeguard requirements		N/A
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment		N/A
	Transportable equipment with metalized plastic parts ..... :		N/A
P.2.3.2	Consequence of entry test ..... :		N/A
P.3	**Safeguards against spillage of internal liquids**		
P.3.1	General	No liquids used	N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	**Metallized coatings and adhesives securing parts**		
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**		-
Q.1	**Limited power sources**	Ethernet, isolated and no PoE (PS1)	N/A
Q.1.1	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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**	Ethernet connection accepted based on insulation in signal transformer and impedances in the circuit	N/A
	Maximum output current (A) ..... :		N/A
	Current limiting method..... :		—
R	**LIMITED SHORT CIRCUIT TEST**		-
R.1	**General**	Mains protection is part of the approved power supply	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**		
S.1	**Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W**		
	Samples, material..... :	All internal fire enclosures are V-0 and accepted based on approval	—
	Wall thickness (mm) ..... :		—
	Conditioning (°C) ..... :		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	**Flammability test for fire enclosure and fire barrier integrity**		N/A
	Samples, material..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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**	UL94V-0 (part of approved internal enclosure material)	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) No affected components, SMD components and approved SMPS	P
T.3	**Steady force test, 30 N ..... :**	No accessible safeguard	N/A
T.4	**Steady force test, 100 N ..... :**	Celling mounted, fixed equipment	N/A
T.5	**Steady force test, 250 N ..... :**	Metal and plastic parts of enclosure (See appended table T.5)	P
T.6	**Enclosure impact test**	(See appended table T.6)	P
	Fall test		P
	Swing test		N/A
T.7	**Drop test ..... :**		N/A
T.8	**Stress relief test..... :**	No such safeguard or materials	N/A
T.9	**Glass Impact Test..... :**	No glass	N/A
T.10	**Glass fragmentation test**		N/A
	Number of particles counted ..... :		N/A
T.11	**Test for telescoping or rod antennas**		N/A
	Torque value (Nm) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION**		P
U.1	**General**		N/A
	Instructional safeguard **:**	No CRT	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**		-
V.1	**Accessible parts of equipment**		P
V.1.1	General	Openings are not large enough for the V.1 probe passes and additional all internal enclosure and approval terminal IP54 rated	P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes		P
V.1.4	Plugs, jacks, connectors tested with blunt probe	Plugs, jacks, connectors are not accessible	N/A
V.1.5	Slot openings tested with wedge probe	No slot openings	N/A
V.1.6	Terminals tested with rigid test wire	Terminals are not accessible with rigid test wire	N/A
V.2	**Accessible part criterion (only metal and plastic parts outer enclosure touchable)**		N/A
X	**ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)**		P
	Clearance ..... :	(See appended table X)	N/A
Y	**CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES**		-
Y.1	**General**		P
Y.2	**Resistance to UV radiation**	Revolve N-307 (UV16 stabilised)	P
Y.3	**Resistance to corrosion**		P
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by..... :	Almg3 (EN AW-5754 H111) resistant to corrosion	P
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure..... :		N/A
Y.3.5	Compliance		N/A
Y.4	**Gaskets**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Y.4.1	General	All gaskets are located within the ingress protected housing which is also protected by the frame work (metal outer enclosure). No user accessible parts, no oil or UV.	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**		P
Y.5.1	General	Internal enclosures for Power box (IP54), SMPS (IP65) and YIN2-box (IP54) all separately approved. Refer to DEKRA Test report 223031500 (Available on request)	P
Y.5.2	Protection from moisture		P
	Relevant tests of IEC 60529 or Y.5.3 ..... :	tests of IEC 60529	P
Y.5.3	Water spray test	Water spray test performed on individual components	P
Y.5.4	Protection from plants and vermin		P
Y.5.5	Protection from excessive dust		P
Y.5.5.1	General		P
Y.5.5.2	IP5X equipment	Power box and YIN2-box: IP54 Refer to Test report 223031500 (Available on request)	P
Y.5.5.3	IP6X equipment	Certified SMPS: IP65 Refer to Test report E183223-4789182890	N/A
Y.6	**Mechanical strength of enclosures**		-
Y.6.1	General		P
Y.6.2	Impact test..... :	(See Table T.6)	P

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Clause	Requirement + Test	Result - Remark	Verdict

5.2	**TABLE: Classification of electrical energy sources**						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type[1)]	Additional Info [2)]	
240 V	Mains input terminals 240 Vac	Normal	240	1	SS	AC	ES3
		Abnormal	240	16	SS	AC	
		Single fault – SC/OC	240	16	SS	AC	
240 V	Mains internal wiring and connectors 240 Vac	Normal	240	1	SS	AC	ES3
		Abnormal	240	16	SS	AC	
		Single fault – SC/OC	240	16	SS	AC	
240 V	Mains circuit of the power supply 240 Vac	Normal	240	1	SS	AC	ES3
		Abnormal	240	16	SS	AC	
		Single fault – SC/OC	240	16	SS	AC	
240 V	All secondary circuits after approved power supply 15 Vdc	Normal	15	1	SS	AC	ES1
		Abnormal	15	11	SS	DC	
		Single fault – SC/OC	15	11	SS	DC	
Supplementary information:							
1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc.							
2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.							

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.8	TABLE: Working voltage measurement				P
Location		RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments
Primary circuit between Line and Neutral		240	340	<30 kHz	
Primary circuit between Line and PE		240	340	<30 kHz	
Primary to secondary		-	-	-	Approved SMPS
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:					
Approved component used					

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.2, 5.4.3	TABLE: Minimum Clearances/Creepage distance							P
Clearance (cl) and creepage distance (cr) at/of/between:	U_p (V)	U_{rms} (V)	Freq [1] (Hz)	Required cl (mm)	cl (mm)	E.S. [2] (V)	Required cr (mm)	cr (mm)
Power supply (approved see note3)	340	240	50/60	3	>3	-	4.8	>4.8
Mains terminals to PE (approved see note3)	340	240	50/60	1,5	>1.5	-	2.4	>2.4
Mains interconnection plugs (approved see note3)	340	240	50/60	3	>3	-	4.8	>4.8
Mains terminals L to N in the power supply (approved see note3)	340	240	50/60	1.5	>1.5	-	2.4	>2.4
Supplementary information:								
Note 1: Only for frequency above 30 kHz Note 2: See table 5.4.2.4 if this is based on electric strength test. All measured or accepted based on components approval. Note 3: Acceptance based on approval of the Meanwell power supply and the DIN rail mains terminals. No evaluation or test performed. See critical component list for details.								

5.4.4.2	TABLE: Minimum distance through insulation			
Distance through insulation (DTI) at/of	Peak voltage (V)	Insulation	Required DTI (mm)	Measured DTI (mm)
Supplementary information:				
Approved SMPS used				

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:						

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No
BI: Between L/N and PE		dc	2500	No
FI: Between L-N terminals		dc	2500	No
RI: Between primary and secondary circuit *				See note
Supplementary information:				
*: Approved SMPS and mains components used, no test performed.				

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
Mains plug connector	240	Normal operating	-	0,42	ES1
Supplementary information:					
X-capacitors installed for testing: [ ] bleeding resistor rating: [ ] 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)
PE terminal to SMPS enclosure		40	2	0,48	0,012
PE terminal to enclosure		40	2	0,24	0,006
PE terminal to YIN2 (FE)		40	2	0.36	0,009
Supplementary information:					
40 A for 2 minutes to comply with CAN/US requirements					

5.7.4	TABLE: Unearthed accessible parts					N/A
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V_{rms} or V_{pk})	Current (A_{rms} or A_{pk})	Freq. (Hz)	
Supplementary information:						

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Clause	Requirement + Test	Result - Remark	Verdict

Abbreviation: SC= short circuit; OC= open circuit

5.7.5	**TABLE: Earthed accessible conductive part**			P
Supply voltage (V).....:				—
Phase(s) .....:	[ ] Single Phase; [ ] Three Phase: [ ] Delta [ ] Wye			
Power Distribution System .....:	[ ] TN [ ]TT [ ] IT			
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	
Supplementary Information:				
The unit is equipped with only one reinforced isolated power supply which is accepted based on its approval. No other mains connected parts that could introduce a touch current of significance, therefore no test are performed. (Leakage current <0.75 mA at 277 Vac 60Hz)				

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

6.2.2	**TABLE: Power source circuit classifications**					P
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power[1)] (W)	Time (S)	PS class
PS3 Primary circuits (Powerbox)	NO, OL	240 Vac	16	3840	5	PS3
PS3 Primary circuits SMPS	NO, OL	240 Vac	16	3840	5	PS3
PS3 Power supply secondary circuit, output and cable	NO, OL	15 Vdc	15	225	5	PS3
YIN 2.52 board						

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Clause	Requirement + Test	Result - Remark	Verdict

J1 (1 / 2) [Vin 12-18V] = *SMPS output*	-	15 Vdc	15	225	5	PS3
J2 (1,3-19 / 2,4-20) [Vin_SW]	OL	15 Vdc	15	225	5	PS3
J4 (1 / 2) [OUT_SW]1	OL	14,4 Vdc	10,02	144	5	PS3
J6 (1 / 2) [OUT_SW2]	OL	14,4 Vdc	10,02	144	5	PS3
J9 (1 / 4)	OL	13,9 Vdc	0,99	13,8	3	PS1
J10, J12 [POE]	OL	13,9 Vdc	0,95	13,3	3	PS1
J14 (8,7 / 5,6) [5Vsys]	OL	4,1 Vdc	0,95	3,9	3	PS1
J11 (1 / 4) USB	OL	3,8 Vdc	1,6	6,1	3	PS1
Ethernet connection, only signalling with isolation transformer U19	OL	-	-	-	-	Considered PS1
User button protected by a 0.4 A fuse.	OL	15 Vdc	0,9	13,5	5	PS1
Internal loudspeakers after 2 A fuse and protected by overcurrent protection of digital amplifier	OL	15 Vdc	4,3	64,5	5	PS2
GSM Antenna's, only HF signal with circuit impedance	-	-	-	-	-	Considered PS1
LED lamp supply	NO, OL	15 Vdc	15	225	5	PS3
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit 1) Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.						

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Clause	Requirement + Test	Result - Remark	Verdict

6.2.3.1	TABLE: Determination of Arcing PIS			P
Location	Open circuit voltage after 3 s (Vpk)	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No
B1 (mains parts before SMPS)	340	-	-	See note
Supplementary information:				
Note: Mains parts are all covered with a fire enclosure and accepted based on the components approval				

6.2.3.2	TABLE: Determination of resistive PIS		P
Location	Operating and fault condition	Dissipate power (W)	Arcing PIS? Yes / No
YIN2 circuits within YIN2 box and 15 V output circuits of supply PS3	Only in single fault condition	225	Yes
LED lamp supply	Only in single fault condition	225	Yes
Audio circuits and speakers PS2	Only in single fault condition	64	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:				

9.6	TABLE: Temperature measurements for wireless power transmitters								N/A
Supply voltage (V) ..... :									—
Max. transmit power of transmitter (W) ..... :									—
	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		
Foreign objects	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	
Supplementary information:									

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 9.3, B.1.5, B.2.6	**TABLE: Temperature measurements**	P

Supply voltage (V) ..... :	90 V 50 Hz	90 V 50 Hz	264 V 60 Hz	264 V 60 Hz	—
Ambient temperature during test T_{amb} (°C) .... :	23,1	40	23,1	40	—
Maximum measured temperature *T* of part/at:	*T* (°C)				Allowed T_{max} (°C)
Supply cord	30,8	48	30,6	47,6	80
Din rail supply terminal	30,1	47,2	29,8	46,9	110
GSM Antenna plastic enclosure	29,1	46,2	29,0	46,1	94
Power supply input terminal	33,7	51	33,5	50,6	80
Power Box plastic enclosure	30,6	47,8	30,5	47,6	80
Power supply Tc point	30,2	47,4	30,3	47,5	70
YIN252 PCB	45,5	62,8	45,3	62,3	130
YIN252 Supply terminal	32,1	49,3	31,9	49	80
YIN252 Speaker terminal	30,7	47,9	30,6	47,6	80
YIN252 Lighting supply terminal	32,3	49,6	32,0	49,1	125
YIN252 speaker supply wiring	33,3	50,6	33,1	50,2	80
YIN252 plastic enclosure	35,4	52,7	35,1	52,2	80
LED lighting enclosure	38,3	55,6	38,4	55,6	85
Speaker enclosure	29,0	46,3	29,1	46,3	94
Equipment plastic enclosure	25,5	42,8	25,5	42,7	94
Lamp holder	60,3	76,6	60,3	76,6	85

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class

Supplementary information:

Tests temperatures were calculated values to 40°C

touch temperatures based on ambient 23,1°C

Supplementary information: Tested at worst case configuration, audio at maximum output, LED lamps on.

Power supply is an approved part, no additional test deemed necessary.

Single fault conditions do not impact the overall unit due to the size and materials used, but only specific components that are mentioned and the described in the single fault section.

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Clause	Requirement + Test	Result - Remark	Verdict

Note 1: Tma should be considered as directed by appliable requirement

Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

B.2.5	**TABLE: Input test**							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
90	50	0,312	-	28	150	External		Audio maximum volume with constant signal and LED lamps turned on (attraction modus)
100	50	0,284	-	28	150	External		
230	50	0,175	-	28,3	150	External		
240	50	0,166	-	28	150	External		
264	50	0,179	-	28,4	150	External		
90	60	0,317	-	28	150	External		
100	60	0,280	-	28,1	150	External		
230	60	0,189	-	28,6	150	External		
240	60	0,197	-	28,3	150	External		
264	60	0,196	-	28,1	150	External		
Supplementary information:								

B.3, B.4	**TABLE: Abnormal operating and fault condition tests**					**P**
Ambient temperature T_{amb} (°C)..... :				22		—
Power source for EUT: Manufacturer, model/type, outputrating .. :				Mains connected 90V		—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
Audio signal	Maximum output signal and continuous signal	90	4 hour	-	16	No hazard (part of normal condition test)
SMPS output	OL	90	1 h	-	-	Maximum current 11 A, no excessive heat or hazard (SMPS is an approved part)
SMPS output	SC	90	< 3 s	-	-	Unit switches off no excessive heat or hazard (SMPS is an approved part)
YIN2-2.52						
J2 (1,3-19 / 2,4-20) [Vin_SW]	SC	90 - 240	5	-	-	Uo = 15,1 Vdc; Usc = 0 V; Isc = 0,02 A; Hiccup. No hazard, auto reset

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Clause	Requirement + Test	Result - Remark	Verdict

J2 (1,3-19 / 2,4-20) [Vin_SW]	OL	90 - 240	5	-	-	Uo = 15,1 V; U_{OL} = 15 Vdc; I_{OL} = 15 A; No hazard
J4 (1 / 2) [OUT_SW1]	SC	90 - 240	30	-	-	Uo = 15,1 Vdc; Usc = 0 V; Isc = 0,02 A No hazard, auto reset
J6 (1 / 2) [OUT_SW2]	SC	90 - 240	30	-	-	Uo = 15,1 Vdc; Usc = 0 V; Isc = 0,02 A No hazard, auto reset
J4 (1 / 2) [OUT_SW1] J6 (1 / 2) [OUT_SW2]	OL	90 - 240	30	-	-	Uo = 15,1 Vdc; U_{OL} = 15 Vdc; I_{OL} = 10 A; No hazard
J9 (1 / 4)	SC	90 - 240	5	-	-	Uo = 15,1 Vdc; Isc = 1A; Fuse F5 blown. No hazard.
J14 (8,7 / 5,6) [5Vsys]	SC	90 - 240	5			Uo = 4,1 Vdc; I_{SC} = 1 A; Fuse F7 blown. No hazard
J11 (1 / 4) USB	SC	90 - 240	30	-	-	Uo = 4,9 Vdc; Usc = 0 V; Isc = 0,1 A No Hazard, auto reset
J11 (1 / 4) USB	OL	90 - 240	30	-	-	Uo = 4,9 Vdc; U_{OL} = 3,8 Vdc; I_{OL} = 1,6 A; No hazard
J10 (7 / 8 , 9 /10) POE	SC	90 - 240	30	-	-	Uo = 15,1 Vdc; I_{SC} = 1 A, Fuse F8 resp F9 blown. No Hazard
J12 (7 / 8 , 9 /10) POE	SC	90 - 240	30	-	-	Uo = 15,1 Vdc; I_{SC} = 0,95 A, Fuse F10 resp F11 blown. No Hazard
selection button pcb	Short the 15 Vdc supply	90	< 3 sec	F1	0.4 A	0.4 A Fuse blown, no hazard or exessive heat
Speakers	Short Audio signal to speakers	90	< 3 sec	F5	2 A	No hazard, defect or excessive heat. The TAS5708 is equipped with a short and overload protection
GSM antenna's	Short signal to antenna's	90	10 min	F5	2 A	Only HF signal, no hazard, no exessive temperature or breakdown occurred.
Ethernet	Short I/O signals of Ethernet connection	90	10 min	F5	2 A	Only low power signals, no hazard excessive temperature or breakdown occurred.
LED Lamps	Short 15 V supply	90	10 min	Ext	11 A	Supply switches to hiccup mode. No hazard, defect or

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						excessive heat.
Supplementary information:						

M.3	**TABLE: Protection circuits for batteries provided within the equipment**						P
Is it possible to install the battery in a reverse polarity position?.....:				Not user replaceable			—
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)			
Duracell CR/DL2032	3 mA	0 mA	-	-	-	-	
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.							
Specified battery temperature (°C) .....:				22			P

Component No.	Fault condition	Charge/ discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
X5	SC pin 1 to 8	Abnormal charge	-	-	0.7 mA	3.3V	Calculated and accepted on the 4K7 resistor in series.
C201	SC	Abnormal discharge	-	-	0.6 mA	3.0 V	Calculated and accepted on the 4K7 resistor in series.

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.

Protection circuit on YIN2.52 board.

The battery is protected by a 4K7 series resistor protecting against reverse charging (CR2032 max 10 mA).

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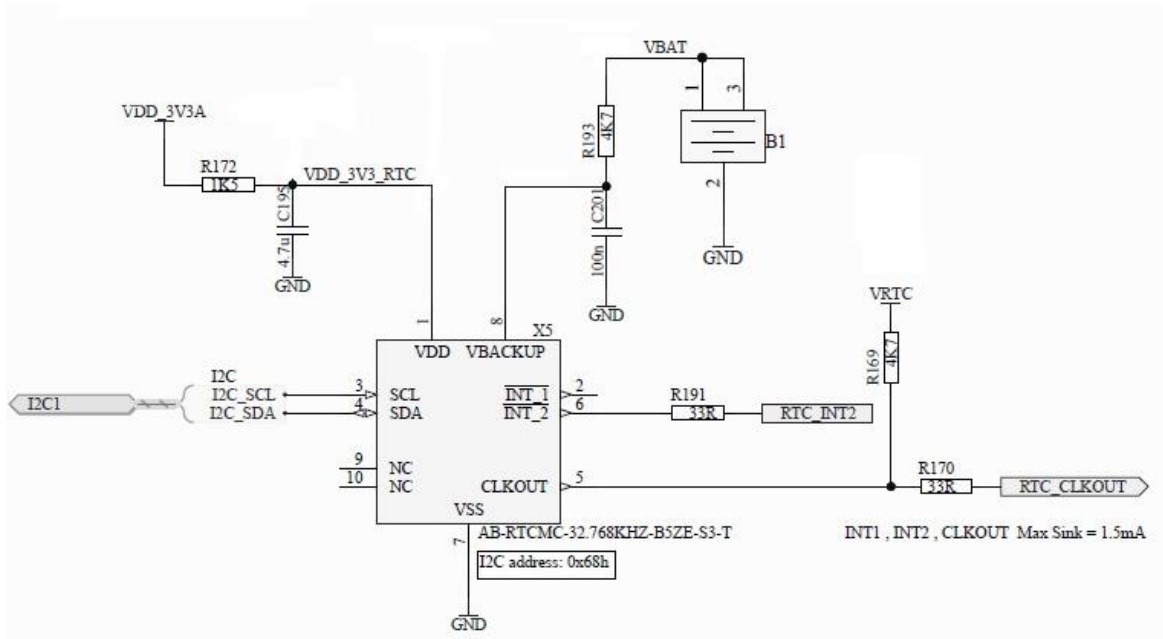
Clause	Requirement + Test	Result - Remark	Verdict



YIN252 Approved DL/CR2032 cell with adequate protection used.

M.4.2	TABLE: Charging safeguards for equipment containing a secondary lithium battery	N/A
Maximum specified charging voltage (V) ..... :		—
Maximum specified charging current (A) ..... :		—
Highest specified charging temperature (°C) ..... :		
Lowest specified charging temperature (°C) ..... :		

Battery manufacturer/type	Operating and fault condition	Measurement			Observation
		Charging voltage (V)	Charging current (A)	Temp. (°C)	
Supplementary information:					
Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature					

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)						N/A
Output Circuit	Condition	U_{oc} (V)	Time (s)	I_{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
Supplementary Information:							

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Clause	Requirement + Test	Result - Remark	Verdict

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Location/Part	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation
Enclosure	Metal	3 mm	Circular plane 30 mm	250	5	No change, damage or hazard occurred
Enclosure	Plastic	6	Circular plane 30 mm	250	5	No change, damage or hazard occurred
Internal parts	-	-		10	-	See note
Supplementary information:						
Only T5 is applicable since the unit is fixed and permanently connected. The enclosure is made of very sturdy metal 3 mm thick construction with concrete base which will not be affected by the 250 N force. Accepted based on engineering judgement. Note; All secondary components are SMD and the mains supply and terminal construction are approved and or closed/potted components. The 10 N force will not affect any CL or CR distances						

T.6, T.9	TABLE: Impact test			P
Location/Part	Material	Thickness (mm)	Height (mm)	Observation
Enclosure	Metal	3	1,3	Marginal visible damage, only a very small dent/scratch, which will not cause any hazard in the meaning of the standard.
Enclosure	Plastic	6	1,3	
Supplementary information				

T.7	TABLE: Drop test			N/A
Location/Part	Material	Thickness (mm)	Height (mm)	Observation
Supplementary information:				

T.8	TABLE: Stress relief test				N/A
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:
Plastic parts of outer enclosure

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

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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)]
Appliance Inlet and Cable					
C14 Plug connector, non-rewirable	YFC-BonEagle Electric Co., Ltd.	SF-81	10 A, 250 V	IEC 60320-1:2015/AMD1:2018	VDE:40033151
Cable	YFC-BonEagle Electric Co., Ltd.	H05VV-F	300/500 V, 3x 0,75 mm²;	DIN EN 50525-2-11 (VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011	VDE: 40004406
Powerbox:					
Mains power terminal and terminal box.	Bopla	M226-V0 Material: SABIC INNOVATIVE Plastics BV Polycarbonate 945U	Flammability: UL94 V0 Tmax: 120ºC Dimensions 120x80x85mm Material Thickness 2.5mm Protection Class IP66	UL746	cURus: E45329, *
Cable gland Power Input Mains	Wiska	ESKV 25 10066413	Flammability: UL94-V2 Tmax: 100ºC Cable diameter min = 9mm Cable diameter max =17mm Protection Class IP68	CSA-C22.2 No. 18.3 UL 514B	cURus: E179850, *
Cable gland for PE wiring.	Wiska	ESKV 12 10066410	Flammability: UL94-V2 Tmax: 100ºC Cable diameter min = 3mm Cable diameter max = 7mm Protection Class IP68	CSA-C22.2 No. 18.3 UL 514B	cURus: E179850, *

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Clause	Requirement + Test	Result - Remark	Verdict

Cable gland for mains wiring to supply.	Wiska	ESKV 16 10066411	Flammability: UL94-V2 Tmax: 100ºC Wire outer diameter: 4.5 .. 10mm Protection Class IP68	CSA-C22.2 No. 18.3 UL 514B	cURus: E179850, *
Mains din-rail screw terminals L + N.	Phoenix Contact	UT 2.5 3044076	Flammability: UL94 V0 Tmax: 110ºC Core diameter 0.14 .. 4mm^2 26 .. 12 AWG Umax: 600V Imax: 20A	UL 486A/B CSA-C22.2 No. 158	cURus: E60425, *
PE din-rail screw terminal.	Phoenix Contact	UK 5-TWIN-PE 1923076	Flammability: UL94 V2 Tmax: 125ºC Core diameter 0.2 .. 4mm^2 24 .. 12 AWG	UL 486A/B CSA-C22.2 No. 158	cURus: E60425, *
Mains wiring to power supply.	Helukabel	MEGAFLEX 500 3G1.5 13415	Flammability: IEC 60332-1-2, FT1 Maximum Wiring outer size: 8.5mm 3G1.5 Tmax: +80ºC Nominal voltage: 300V	UL758: CSA-C22.2 No 127	cURus: E170315, *
Protective earth wiring.	Helukabel	UL style 1007, CSA TR64 GNYE Part no. 63713UL	UL VW-1 CSA FT1 80ºC 12AWG: 300V	UL758: CSA-C22.2 No 127	cURus:E170315, *
Power_Supply					

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

Power supply	MeanWell	HEP150-15A	IP65, Tamb 50 °C, Input: 100-240 V, 1.7 A, 50/60 Hz Output: 15 Vdc, 10 A Including mains and secondary wiring: Mains wiring: SJTW 3 core, 18AWG, 105 °C (60 °C water), 300 V, VW-1 (UR) Secondary wiring: SJTW, 2 core, 14 AWG, 105 °C, 300 V, FT2, (UR)	ANSI/UL 60950-1 ANSI/UL 60950-21 CAN/CSA-C22.2 No. 60950-1 IEC 60950-1 IEC 62368-1:2014	cURus: E183223, *
Secondary 15 V chassis connector	Amphenol	C01610C0060 0012	Flammability UL 94 V0 Maximum temperature 125ºC Maximum current 14A Maximum voltage 250V AC / DC Protection Class IP67	CSA-C22.2 No. 182.3	cURus: E63093, *
Secondary 15 V connector	Amphenol	C01610D0060 0010	Flammability UL 94 V0 Maximum temperature 100ºC Maximum current 20A Maximum voltage 250V AC / DC Protection Class IP67	ANSI/UL 2238 CSA-C22.2 No. 182.3	cURus: E63093, *
YIN2 Rev252					

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Clause	Requirement + Test	Result - Remark	Verdict

enclosure for YIN2 controller box	Fibox	7022851 /PCT163610	Flammability UL 746C 5 IEC695-2-1: 960 °C Thickness 3.5mm Polycarbonaat Transparent lid Polycarbonate Temperature range -40ºC .. 80ºC Overall size 360x160x101mm	CSA-C22.2 No. 73	cURus: E75645, *
PCB material YIN2 (YIN2_rev252).	ITEQ CORP	IT-180ATC	Flammability: UL 94 V-0 Tmax: 130ºC FR-4	UL94	UL: E178114, *
PCB SMD fuse F1	Bourns	SF-1206HH20M-2	Operating temperature: -55ºC .. 150ºC Umax: 24V Rated current: 20A	ANSI/UL 248-1 ANSI/UL 248-14 CSA-C22.2 No. 248-1-00 CSA-C22.2 No. 248-14-00	UL: E198545, *
PCB SMD fuse F2, F12	Bourns	SF-0603S250-2	Operating temperature: -55ºC .. 150ºC Rated voltage: 35V AC / 32V DC Rated current: 2.5A	ANSI/UL 248-1 ANSI/UL 248-14 CSA-C22.2 No. 248-1-00 CSA-C22.2 No. 248-14-00	UL: E198545, *
PCB SMD fuse F3, F4	Bourns	SF-1206HH10M-2	Operating temperature: -55ºC .. 150ºC Umax: 24V Rated current: 10A	ANSI/UL 248-1 ANSI/UL 248-14 CSA-C22.2 No. 248-1-00 CSA-C22.2 No. 248-14-00	UL: E198545
PCB SMD fuse F5, F7, F8, F9, F10, F11	Bourns	SF-0603S040-2	Tmax: 105ºC Rated voltage: 35V AC / 50V DC Rated current: 0.4A	ANSI/UL 248-1 ANSI/UL 248-14 CSA-C22.2 No. 248-1-00 CSA-C22.2 No. 248-14-00	UL: E198545, *
PCB SMD fuse F6, F13.	Bourns	SF-0603S100-2	Tmax: 105ºC Rated voltage: 35V AC / 32V DC Rated current: 1.0A	ANSI/UL 248-1 ANSI/UL 248-14 CSA-C22.2 No. 248-1-00 CSA-C22.2 No. 248-14-00	UL: E198545, *

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

Internal memory battery.	Duracell	DL2032	3 V Max abnormal charge current: 10mA Temperature Range: -20ºC .. 54ºC	UL 1642	UL:MH12538, *
Internal memory battery holder.	Renata	VBH2032-1	Flammability: UL 94 V-0 Tmax: 70 ºC	UL 94 UL 1977 CSA-C22.2 No. 182.3	SGS:GZ0708 125224 UL: E218732, *
Chassis connector for RJ45 connection.	Conec	17-10020	Flammability: UL 94 V-0 Tmax: 85ºC Imax: 1.2A Umax: 100V DC Protection Class IP67	UL 1977 ANSI/UL 1863 CAN/CSA-C22.2 No. 182.4	UL: E202784, *
Secondary 15 V supply wiring red and black (YIN2 controller box)	Helukabel	UL Style 1007, CSA TR64 Red Part no.63704 Black Part no.63701	Flammability: UL VW-1, CSA FT1, Maximum temp 80 °C, 16AWG, 300 V	CSA-C22.2 No. 127	cURus: E170315, *
Secondary supply connector at PCB with PCB chassis part (YIN2 controller box)	Molex	1716920102	Flammability UL94V0 Maximum temp 120ºC Maximum current 23A per contact	UL 94 UL 1977	cURus: E29179, *
Secondary PCB connector power output to LED string (J5) and audio output (J18, J19) (YIN2 controller box)	Wurth	649002113322 649002013322 64900513722 DEC (Pins)	Flammability UL94 V-0 Maximum temperature 105ºC Maximum current 9A Maximum voltage 600V AC	UL 1977 CSA-C22.2 No. 182.3	cURus: E323964, *
Chassis connector to LED (YIN2 controller box)	Amphenol	C01610G0060 0012	Maximum temperature 125ºC Rated current 14A (13A / 55ºC) Rated voltage 250V Protection Class IP65 / 67	UL 1977 CSA-C22.2 No. 182.3	cURus: E63093, *

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

Secondary connector to LED lampss (YIN2 controller box)	Amphenol	C01610D0060 0010	Maximum temperature 125ºC Rated current 14A (13A / 55ºC) Rated voltage 250V Protection Class IP65 / 67	UL 1977 CSA-C22.2 No. 182.3	cURus: E63093, *
LED lampscable with connected lamp holders (6X)	LEONI	L45587-M21-Y139 AWM	Maximum temperature 80ºC Core diameter 16 AWG Maximum voltage 300Vac	UL 758 C22.2 No 210.2	CSA: LL55255-42, *
Alternate LED lamps cable	Helukabel	82434 A-BUS PUR	Maximum temperature 80ºC Core diameter 2x1.5mm^2 Test voltage 1kV at 15 min Nominal Voltage: 32V	AWM Style 20549 CSA FT2 IEC 60332-1	cURus: E170315, *
LED lamps (4X)	Aeon Lighting Technology Inc.	M02XWP07-JC-07 MR16 GX5.3	Operating temperature -20 .. 40ºC tc = 85ºC Maximum current 0.8 – 0.92A Nominal Voltage 12V AC / DC Protection Class IP42 reach	ANSI/UL 1993 CSA-C22.2 No. 1993	cURus: E319476, *
LED lamps (4X)	Aeon Lighting Technology Inc.	M02XWP07-JC-07 MR16 GX5.3	Cree Xlamp XT-E Series. Risk Group 2	IEC 62471	DEKRA CB Report: 3150931.51A
Internal audio wiring green and black (YIN2 controller box)	HELUKABEL	Style 1007/1569 AWG16 Black Green Part no. 62400 Black Part no. 62401	Flammability UL94V-1 CSA FT1 Maximum temperature 80ºC Core diameter 16 AWG, 2x0.82 mm^2 Maximum voltage 300Vac	UL 758 CSA-C22.2 No. 127	cURus: E223795, *

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

Audio connector (YIN2 controller box)	Neutrik	NL4FX	Maximum temperature 80ºC Maximum current 40A rms Continuous 50A Audio duty 50% Rated voltage 250V (insulation) IP54	UL 1977 CSA-C22.2 No. 182.3	cURus: E135070, *
Audio chassis part (YIN2 controller box)	Neutrik	NL4MPXX	Maximum temperature 80ºC Maximum current 30A rms Continuous 40A Audio duty 50% Rated voltage 250V (insulation)	UL 1977 CSA-C22.2 No. 182.3	cURus: E135070, *
Audio wiring to speakers	HELUKABEL	83397	Flammability UL VW-1 CSA FT1 Maximum temperature 80ºC Core diameter 18AWG, 2x0.82 mm^2 Nominal voltage 300V	UL 758 CSA-C22.2 No. 127	cURus: E170315, *
Chassis connector SMA connector for antenna's (2X) (YIN2 controller box)	Embedded Antenna Design	M2MAC-UF-10-SFPNOL	IP66 Metal	IEC 62368	#
Chassis connector for push button connection and or LED drive signal (YIN2 controller box)	Binder 718 Series	09-3403-00-03 76 6019 0111 00003-0200	Maximum temperature 85ºC Maximum voltage 60V Protection Class IP65	UL 1977 CSA-C22.2 No. 182.3	cURus: E93427, *

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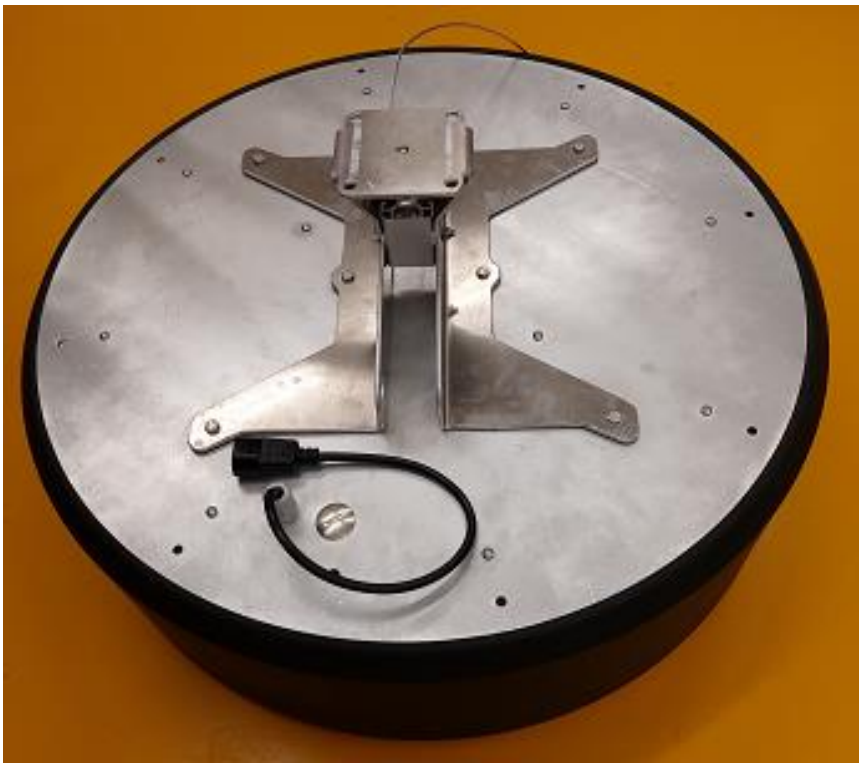
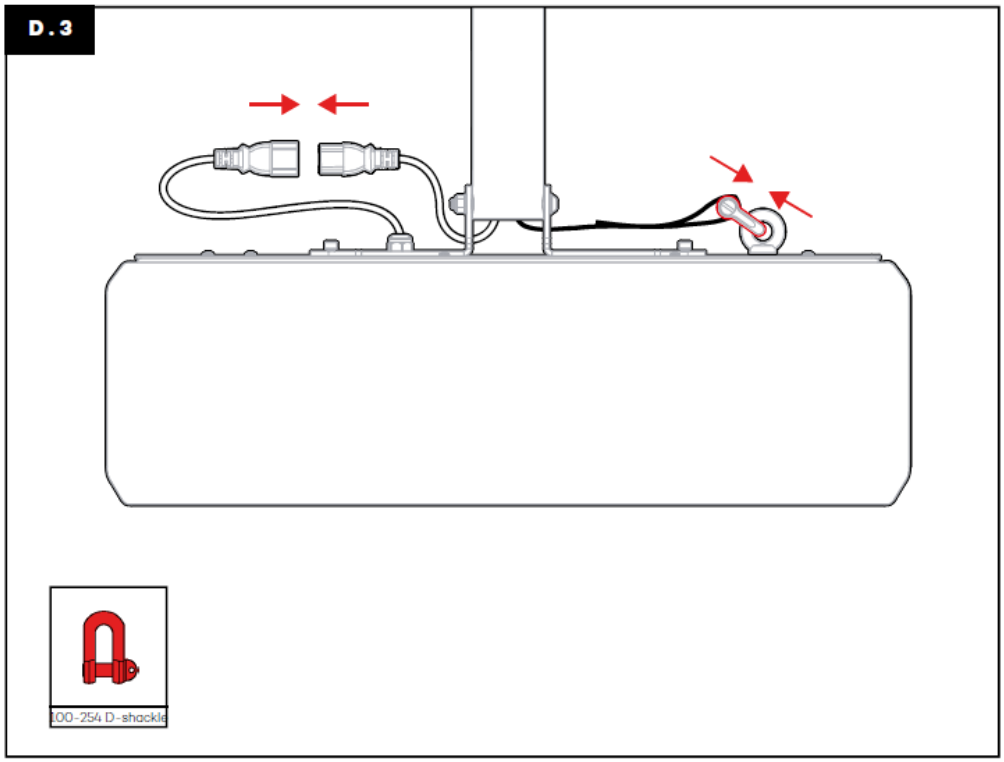
Clause	Requirement + Test	Result - Remark	Verdict

USB output overcurrent protection F6	Bourns	SF0603S100-2	Fast acting 1A, 32V max, 250% @ 5sec, Maximum temperature: 105 °C	ANSI/UL 248-1 ANSI/UL 248-14 CSA-C22.2 No. 248-1-00 CSA-C22.2 No. 248-14-00	cURus: E198545, *
USB chassis part for camera interconnection	Conec	17-210141	Flammability UL 94 V-0 Maximum temperature 85ºC Maximum current 1.5A by 25ºC Protection Class IP67	UL 94 V-0	#
Speaker	JBL Professional	25-1L	two-way 5” speaker Frequency Range (-10 dB)1 60 Hz – 20 kHz Power Rating2 200 W Continuous Program (2 hrs) 100 W (400W peak), Continuous Pink Noise (2 hrs) 75 W (300W peak) Continuous Pink Noise (100 hrs) Maximum Input Voltage 25.3 V RMS (2 hrs), 50.6 V peak Nominal Impedance 8 ohms UL-1480-5	IEC 62368-1:2018	#
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. A “#” (hash) indicates the component is tested as part of the appliance					

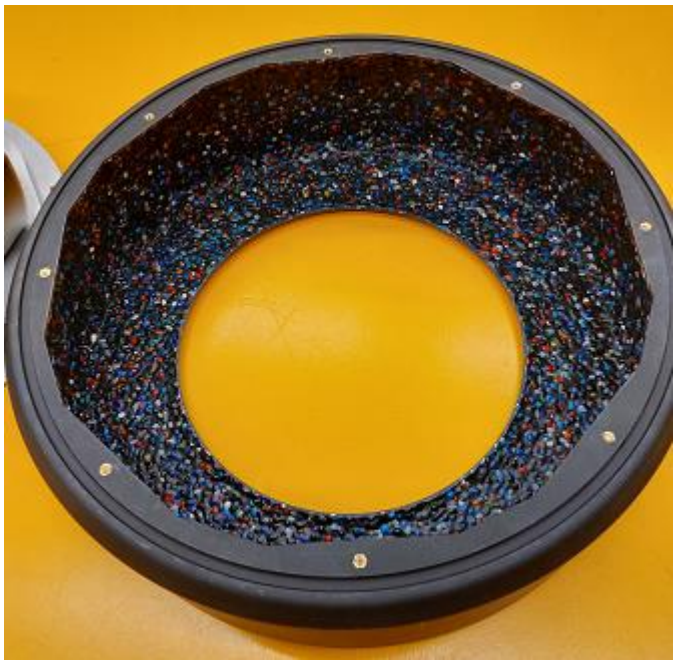
Photographs



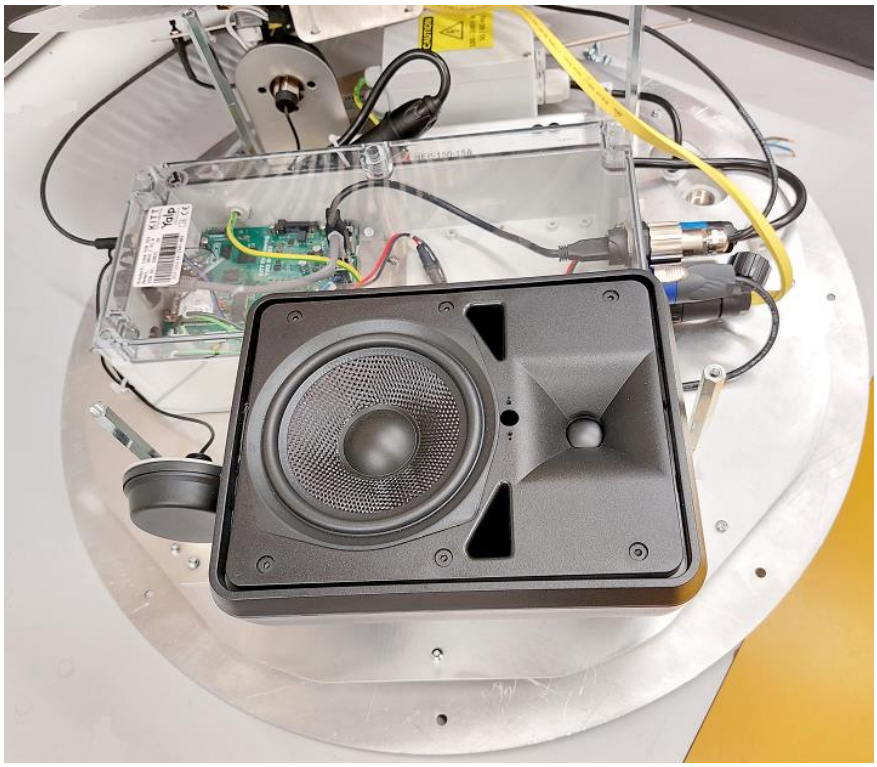


Ceiling mounting bracket

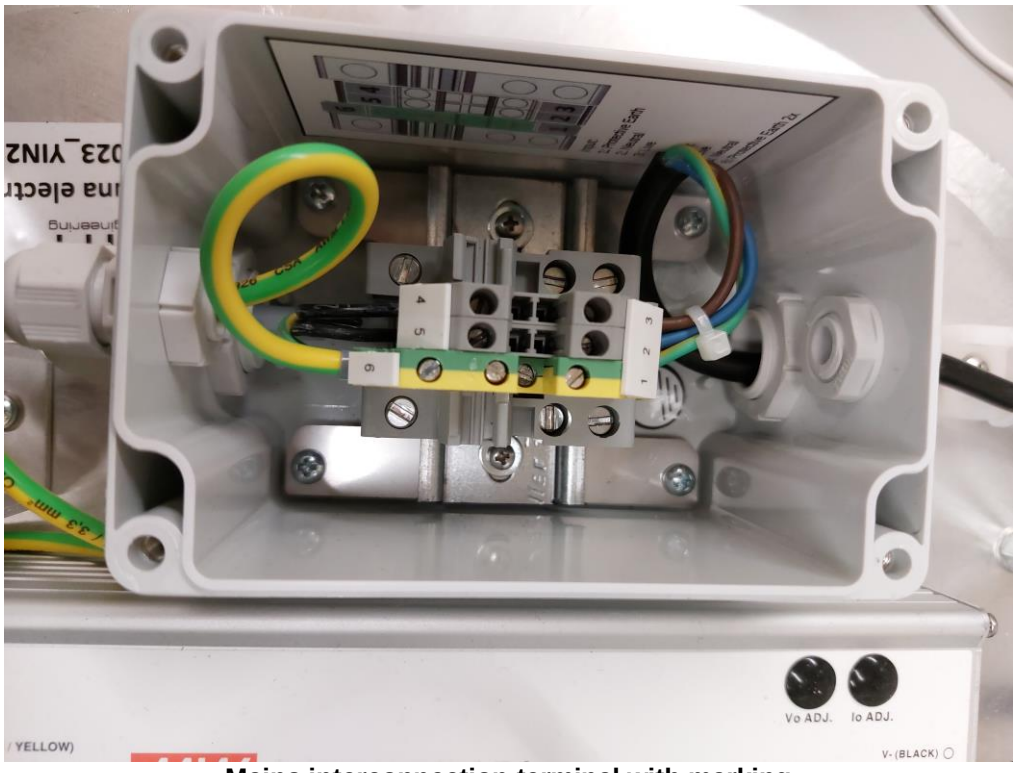
Cover for camera and LED lamps



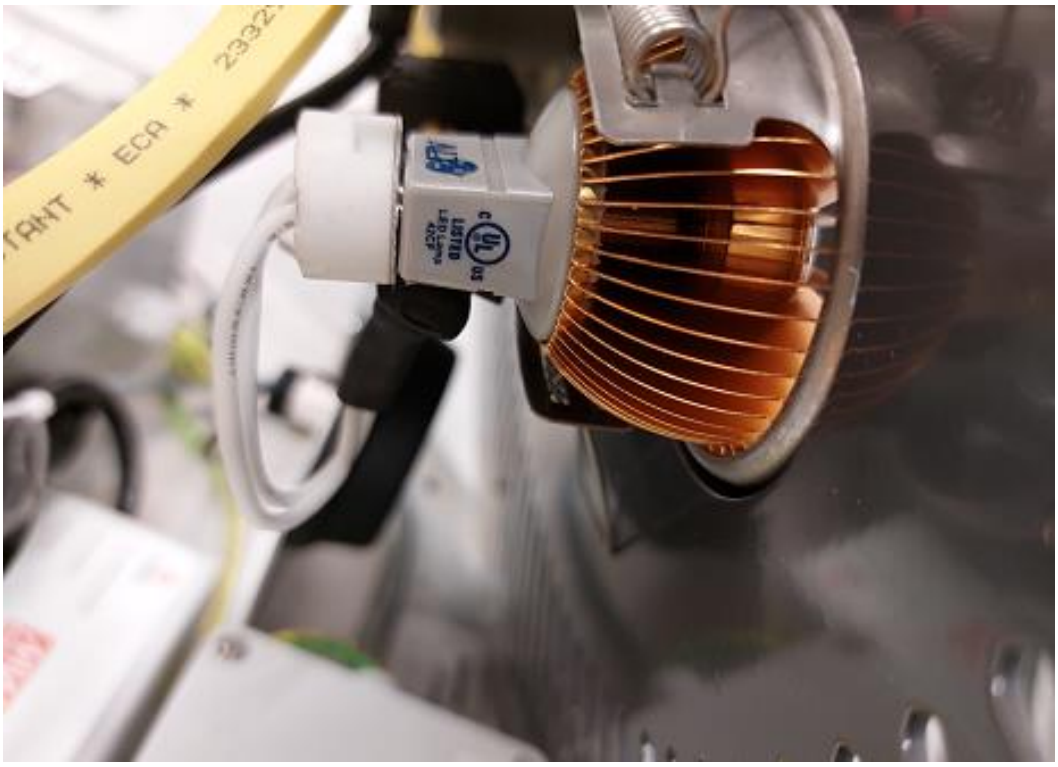
Metal and plastic enclosure



Loudspeaker



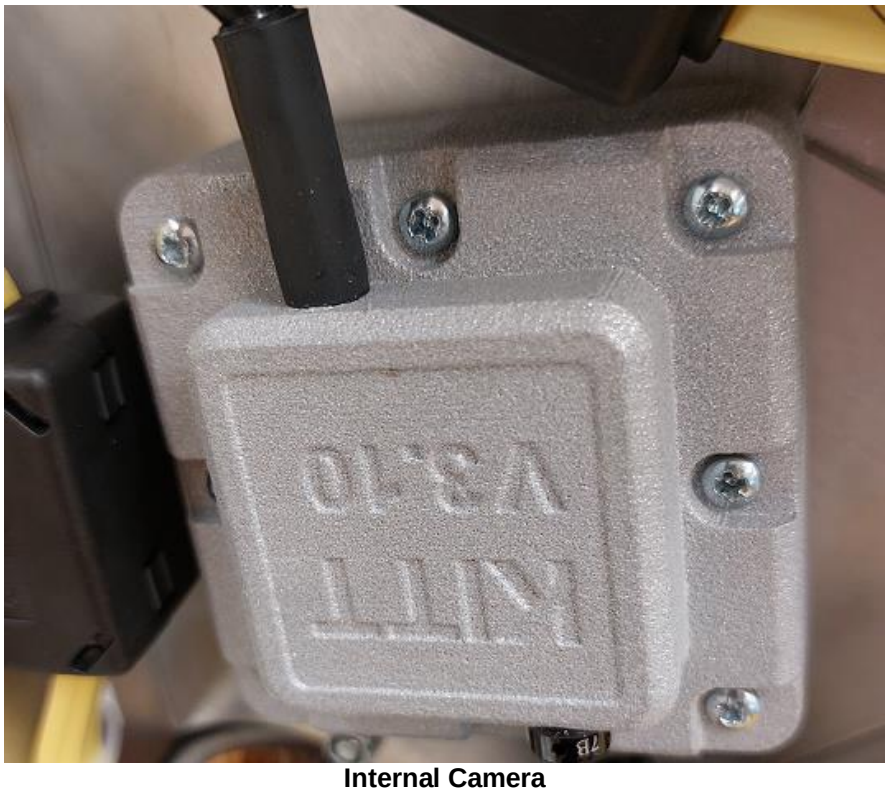
Mains interconnection terminal with marking (same marking also on the lid of the box



LED Lamps

Power Supply

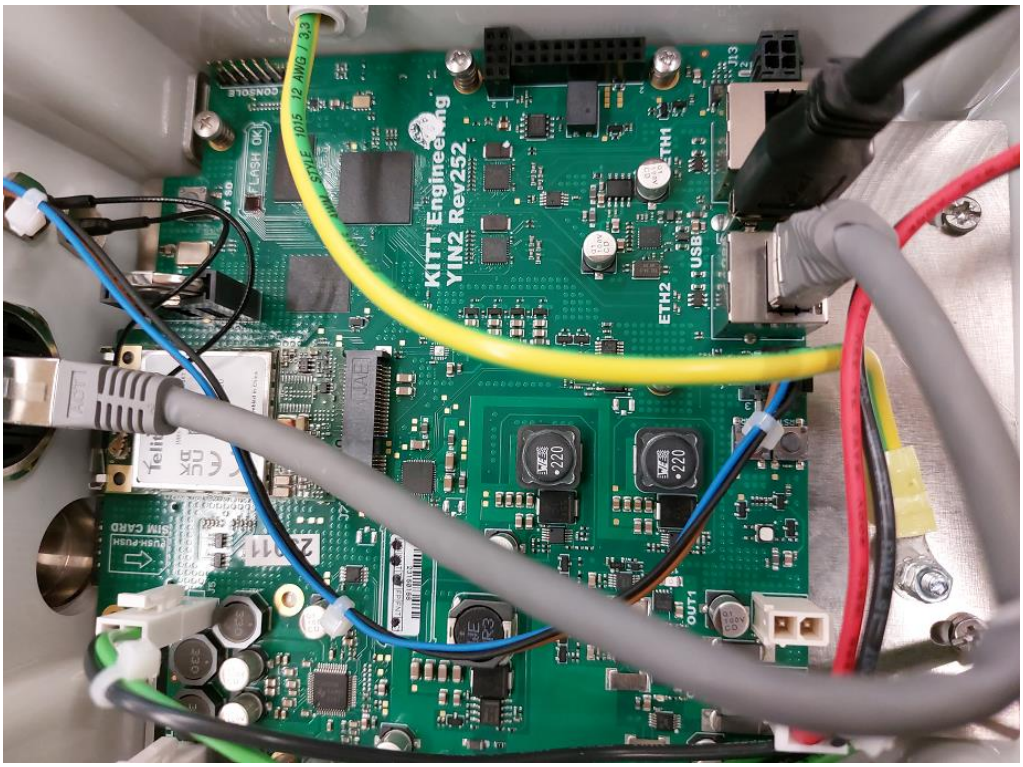
Internal Camera

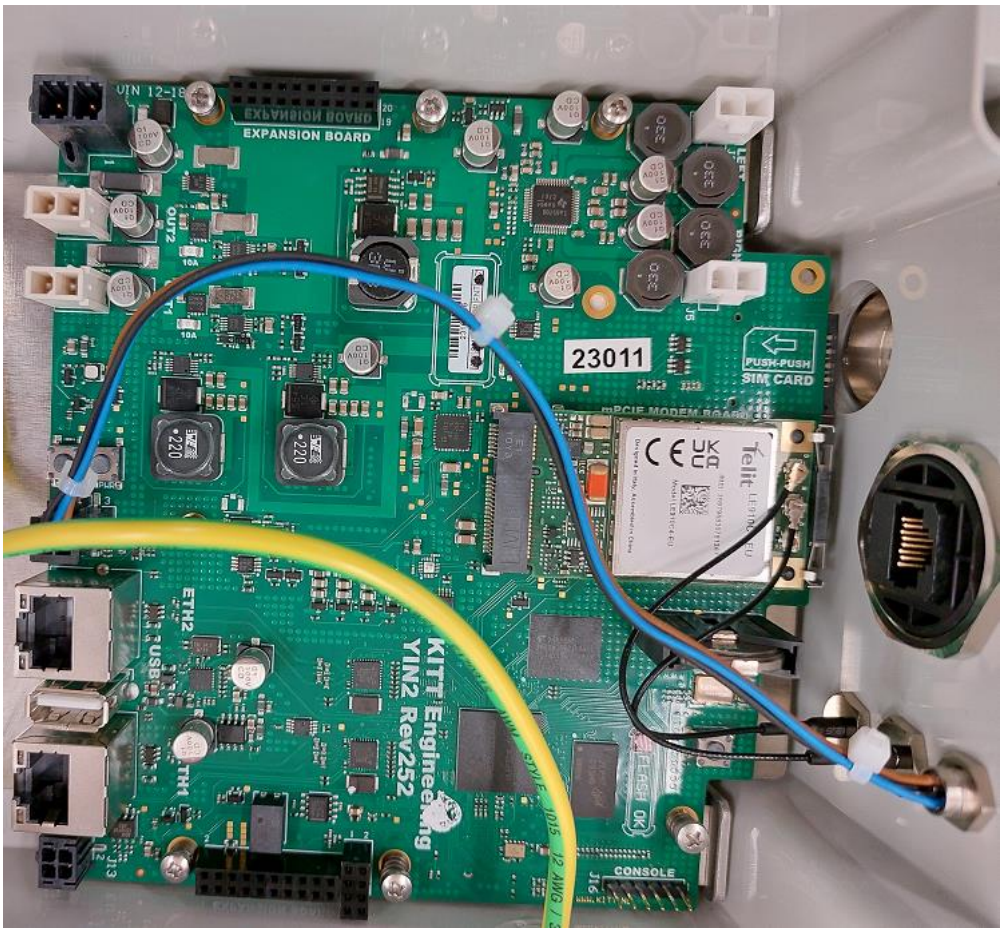


Internal Camera

YIN2 box, power supply and terminal box

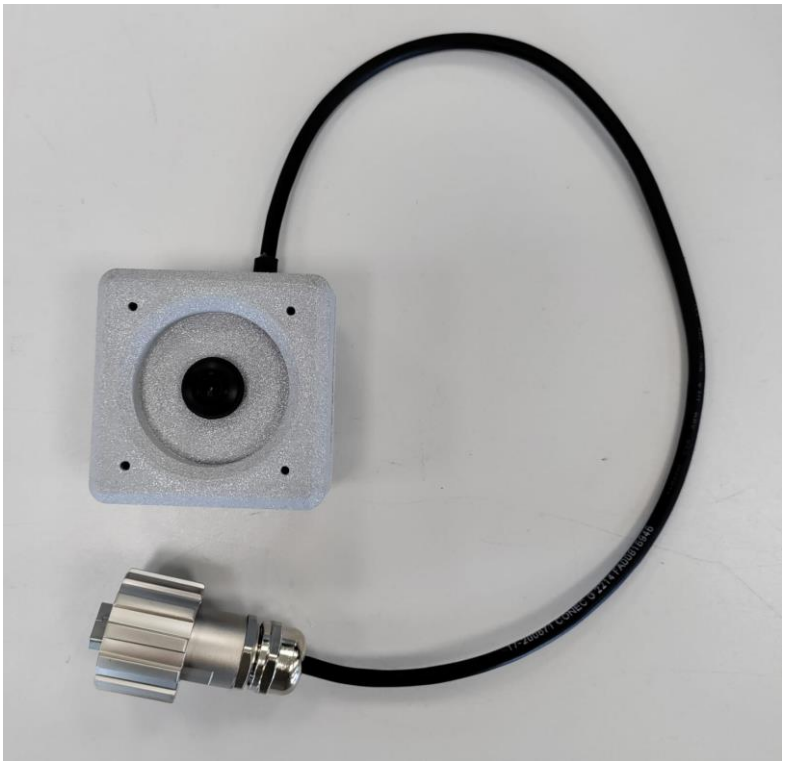
YIN2 box, power supply and terminal box





PCB YIN2.52 (Component side)

LED lamp interconnection cable



Camera with connection cable and LED lamps