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

Report Number..... :	REP040637
Date of issue ..... :	2024-06-20
Total number of pages ..... :	83 pages, see page 4 for attachments
Name of Testing Laboratory preparing the Report ..... :	Nemko Shanghai Ltd. Shenzhen Branch
Applicant's name ..... :	GlobTek, Inc.
Address ..... :	186 Veterans Drive Northvale NJ 07647 United States of America
Test specification:	
Standard ..... :	IEC 62368-1:2018
Test procedure..... :	CB Scheme
Non-standard test method..... :	N/A
TRF template used ..... :	IECEE OD-2020-F1:2021, Ed.1.4
Test Report Form No. ..... :	IEC62368_1E
Test Report Form(s) Originator.....:	UL(US)
Master TRF.....:	Dated 2022-04-14

Copyright © 2022 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

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.

This Test Report, when bearing the Nemko name and logo is only valid when issued by a Nemko laboratory, or by a laboratory having special agreement with Nemko.

Test item description .....:	ICT/ITE Power Supply
Trade Mark(s) .....:	GlobTek, Inc.
Manufacturer.....:	Same as applicant
Model/Type reference .....:	GT*41061-*** The 1st '*' part can be 'M' or '-' or 'H' for market identification and not related to safety. The 2nd '*' part denotes the rated output wattage designation, which can be "01" to "18", with interval of 1. The 3rd '*' part denotes the standard rated output voltage designation, which can be "12", "18", "24" or "30". The 4th '*' part is optional, which can be "-0.1" to "-7.0" with interval of 0.1 to denote voltage deviation or blank to indicate no voltage different. The result by subtracting the deviation value from the standard rated output voltage denotes the rated output voltage, with a range of 5 - 30 volts. The standard rated output voltage is separately 12V, 18V, 24V and 30V.
Ratings .....:	Input: 0.6A 100-240V~ 50-60Hz Output: 5-30Vdc, Max. 3.6A, Max. 18W See General product information for details.

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	Nemko Shanghai Ltd. Shenzhen Branch	
Testing location/ address ..... :		2nd floor of Building 1, Yizhongli Science and Technology Park, No.36 Gaoxin North Third Road, Songpingshan Community, Xili Street, Nanshan District, Shenzhen, Guangdong, China	
Tested by (name, function, signature) ..... :		Sunny Yang (Project Handler)	Sunny Yang
Approved by (name, function, signature) .. :		Jane Sun (Verificator)	Jane Sun
☐	**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):

1. Photos (9 pages)
2. PCB Layout (1 page)
3. Transformer specification (8 pages)
4. European national differences (20 pages)
5. USA and Canada national differences (8 pages)
6. Japan national differences (6 pages)
7. China national differences (5 pages)
8. Singapore national differences (3 pages)

Summary of testing:

Tests performed (name of test and test clause):

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

Testing location:

See page 3.

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

European, USA, Canada, Japan, China and Singapore.

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

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

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

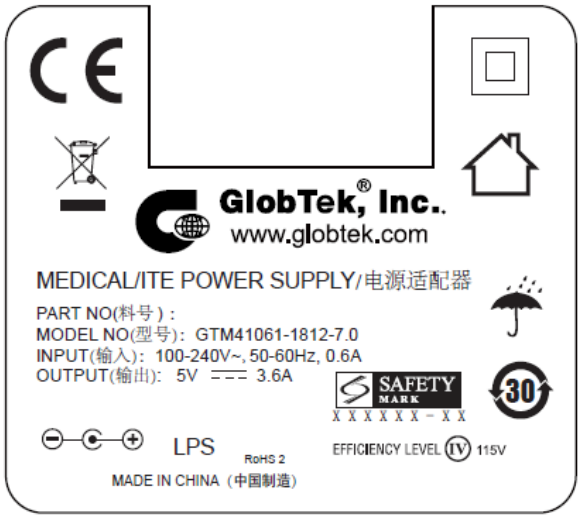
☐ Other:… (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)

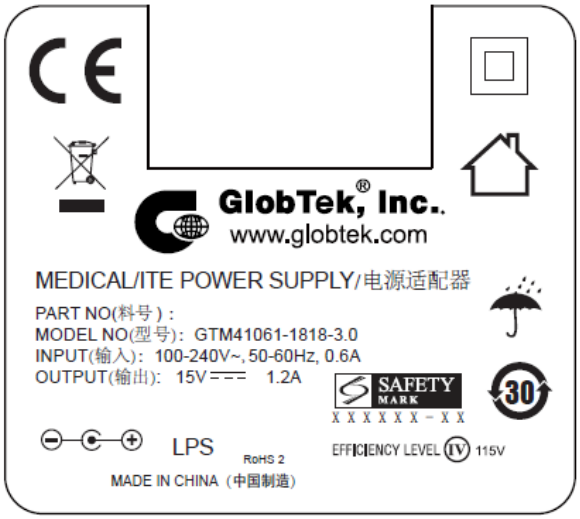
Information on uncertainty of measurement:
The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE.
IEC Guide 115 provides guidance on the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

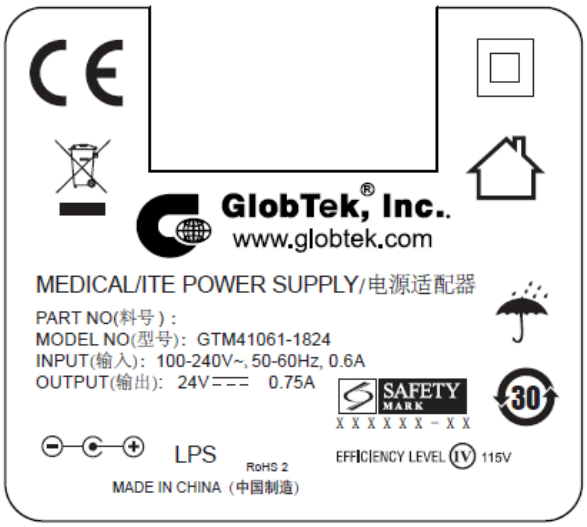
Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

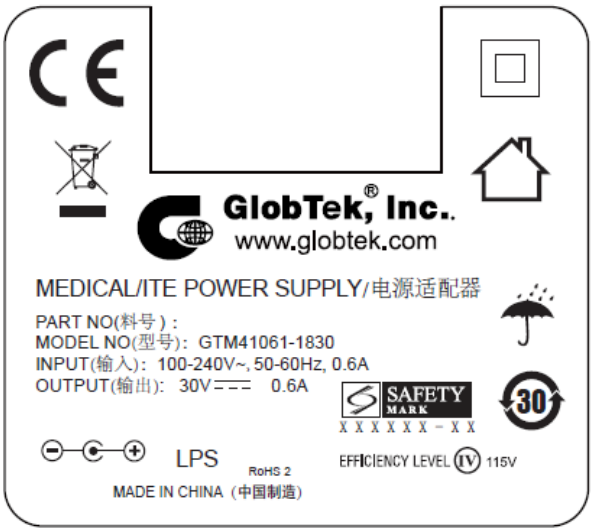
Copy of marking plate:

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









Notes:
All models labels are in the same design except for type designation and output rating. Above labels are representing the other models.

Test item particulars:	
Product group .....:	☒ end product ☐ built-in component
Classification of use by .....:	☒ Ordinary person ☒ Children likely present ☐ Instructed person ☐ Skilled person
Supply connection.....:	☒ AC mains ☐ DC mains ☐ not mains connected: ☐ ES1 ☐ ES2 ☐ ES3
Supply tolerance .....:	☒ +10%/-10% ☐ +20%/-15% ☐ + %/ - % ☐ None
Supply connection – type .....:	☒ pluggable equipment type A - ☐ non-detachable supply cord ☐ appliance coupler ☒ direct plug-in ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☐ other:
Considered current rating of protective device.....:	☒ 16A (20A For Canada and US) 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.
Class of equipment .....:	☐ Class I ☒ Class II ☐ Class III ☐ Not classified ☐
Special installation location .....:	☒ N/A ☐ restricted access area ☐ outdoor location ☐
Pollution degree (PD) .....:	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified T_{ma}.....:	30°C for models with output current greater than 3A. 40°C for models with output current not greater than 3A. ☐ Outdoor: minimum °C
IP protection class .....:	☒ IPX0 ☐ IP___
Power systems .....:	☒ TN ☐ TT ☒ IT - 230 V $_{L-L}$ for Norway ☐ not AC mains
Altitude during operation (m) .....:	☐ 2000 m or less ☒ up to 3000 m
Altitude of test laboratory (m) .....:	☒ 2000 m or less ☐ m
Mass of equipment (kg) .....:	Weight Approx. 0.224kg (without plug) Dimension Approx.: 39.0 x 56.0 x 84.0mm (without plug)

Possible test case verdicts:	
- test case does not apply to the test object ....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement ....:	F (Fail)
Testing:	
Date of receipt of test item .....:	2024-05-06
Date (s) of performance of tests .....:	2024-05-06 to 2024-06-14
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. **Throughout this report a ☐ 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) ..... :	1. GlobTek, Inc. 186 Veterans Drive Northvale NJ 07647 United States of America 2. GlobTek (Suzhou) Co., Ltd Building 4, No. 76, Jin Ling East Rd., Suzhou Industrial Park, Suzhou, JiangSu 215021, China

General product information and other remarks:

The equipment under test is a Class II ICT/ ITE Power Supply.

External enclosure is plastic material of V-0 grade, and totally enclosed with ultrasonic welding without screws.

It can be used with European, USA, Japan, China, UK, Singapore and Australia plug types. The European plug is evaluation with EN 50075. Reference Intertek test report no. 171200473SHA-001.

The US, Japan, China, UK and Australia plug have been evaluated for torque test, Plug part must be checked when market to the country.

Load condition: loaded with rated value.

The equipment has two structures, Structure A is coated glue on the PCB and components, and Structure B is not coated glue.

If not specified, All tests were performed under the model name GTM41061-1830 (18Vdc, 0.6A) and GTM41061-1812-7.0 (5Vdc, 3.6A) with structure B, which represents the worst condition.

Connection to the supply: Direct plug-in equipment.

Maximum recommended ambient (Tmra):
30°C for models with output current greater than 3A.
40°C for models with output current not greater than 3A.

Models difference:

All models are same except model name, output rating, turns of primary and secondary winding of transformer (T1) and some non-critical components rating.
Detail see below Table 1 and Table 4.1.2.

Table 1

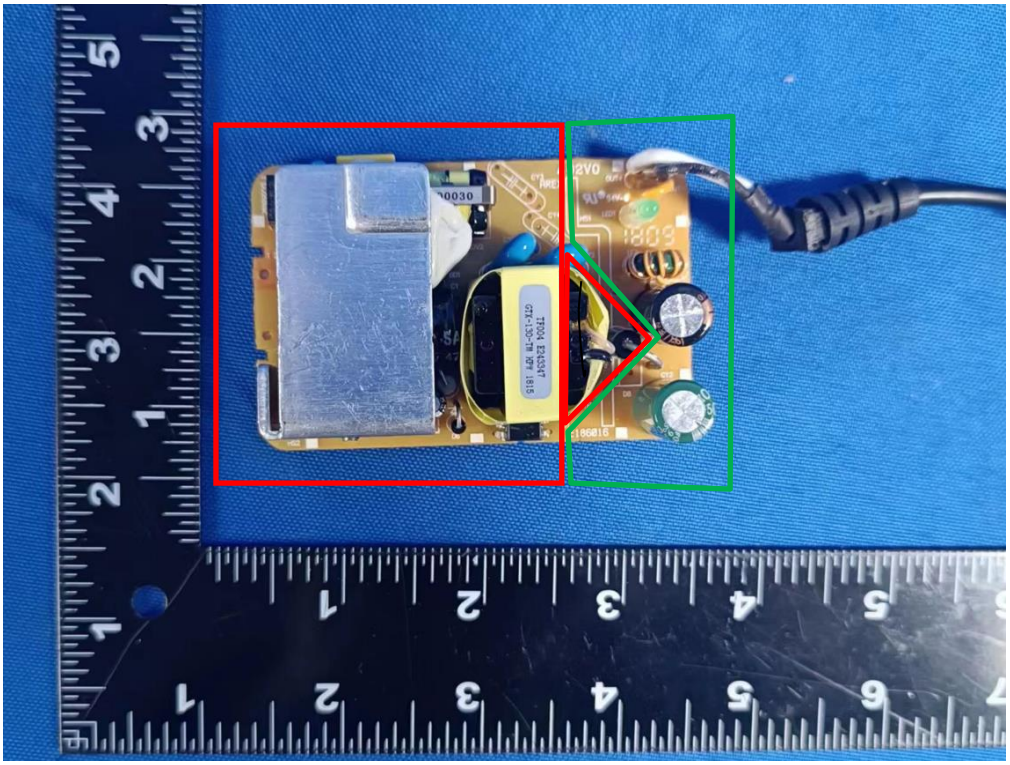
Model	Rated output voltage range	Max. rated output current	Max. rated output power	Secondary hatsink	Typical model
GT*41061-*12*	5-12Vdc	3.6A	18W	Have	GTM41061-1812-7.0
GT*41061-*18*	12.1-18Vdc	1.49A	18W	Have	GTM41061-1818-3.0
GT*41061-*24*	18.1-24Vdc	1.0A	18W	Have	GTM41061-1824
GT*41061-*30*	24.1-30Vdc	0.75A	18W	No	GTM41061-1830

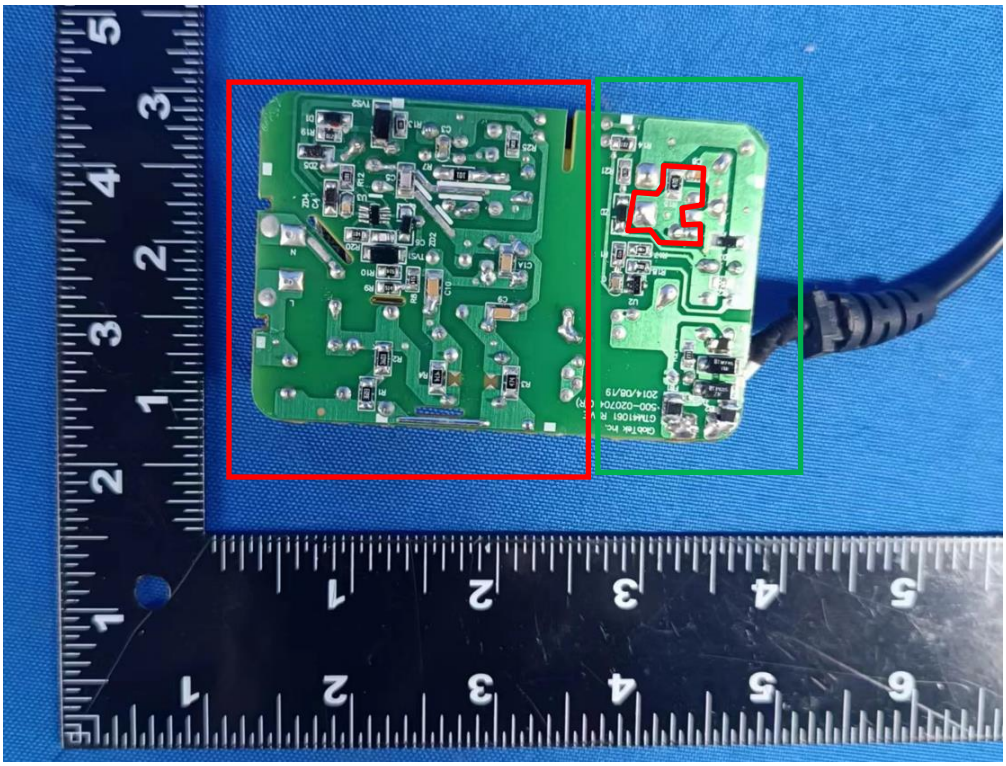
This equipment is intended to operate in a "normal" environment (Offices and homes) and is intended to be operated under altitude up to 3000m, so the clearance is multiplied by the altitude correction factor (1.14 linear interpolation used), specified in table 16 of IEC 62368-1:2018.

OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	**Possible Hazard**			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES3: Primary circuits conductively connected to the mains	Ordinary	N/A	N/A	Enclosure: Annex T, no openings
ES3: Primary circuits conductively connected to the mains	Ordinary	N/A	N/A	Cl. & Cr. Distance comply 5.4.2 & 5.4.3; Dielectric Strength Test 5.4.9; Component comply Annex G
ES3: Primary Circuit (X-cap)	Ordinary	N/A	N/A	Approved discharge Resistor, Voltage: according to 5.5.2.2
ES3: Secondary circuits before D7	Ordinary	N/A	N/A	Single fault between ES3 and ES1.
ES1: Secondary Circuits after D7	Ordinary	N/A	N/A	N/A
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1st S	2nd S
PS3: Internal circuit	Entry of foreign objects	Enclosure with ultrasonic welding	No opening	N/A
PS3: Internal circuit	Internal combustible material	***1)***	Min. V-0 PCB; Min. V-0 Enclosure Components comply with cl 6.4.6	N/A
PS3: Internal circuit	Combustible material -Internal wire	***1)***	6.5.1 Complied with 60695-11-21 or equivalent	N/A
PS2: DC output	Output connection	***1)***	Comply with Annex Q	N/A

7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
N/A	Ordinary person	N/A	N/A	N/A
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Sharp edges and corners (none)	Ordinary person	N/A	N/A	N/A
MS1: Less than 7kg	Ordinary person	N/A	N/A	N/A
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: Enclosure (thermoplastic)	Ordinary person	N/A	N/A	N/A
10	Radiation			
Class and Energy Source (e.g. RS1: PMP sound output)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
RS1: LED indicated	Ordinary person	N/A	N/A	N/A
Supplementary Information: "B" – Basic Safeguard; "S" – Supplementary Safeguard; "R" – Reinforced Safeguard ***1)*** No ignition, Components inside of fire enclosure which measured temperature <300°C during test, refer to table 5.4.1.4, 9.3, B.1.5, B.2.6.				

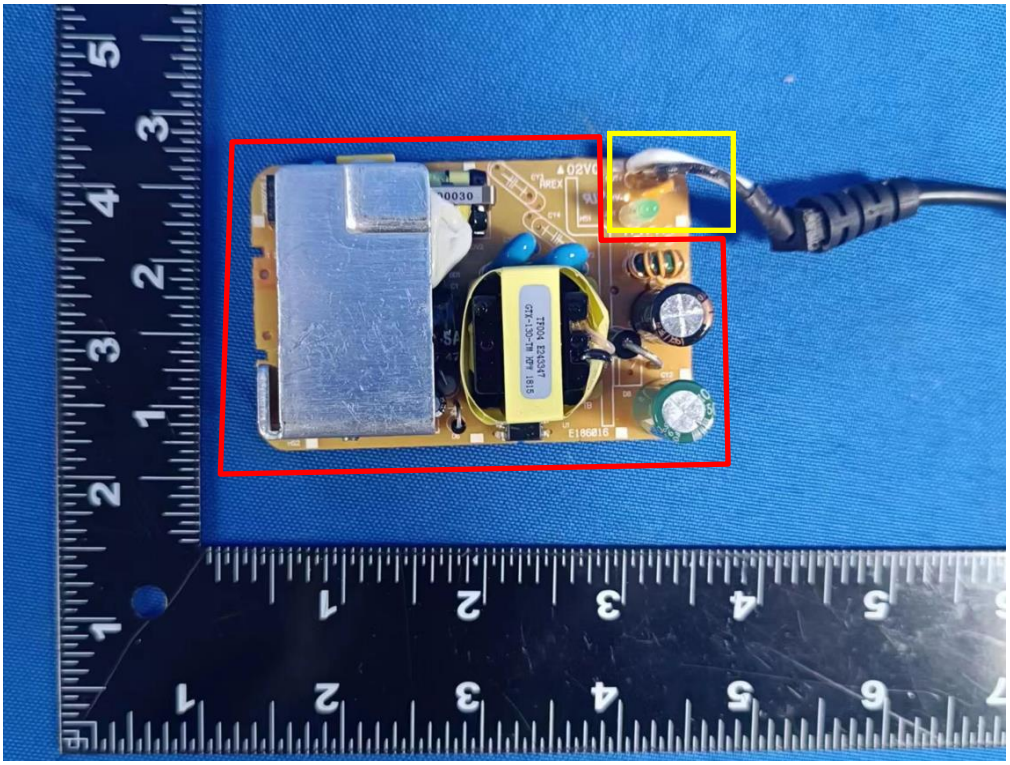
ENERGY SOURCE DIAGRAM		
Indicate which energy sources are included in the energy source diagram. Insert diagram below		
Class 1	Class 2	Class 3

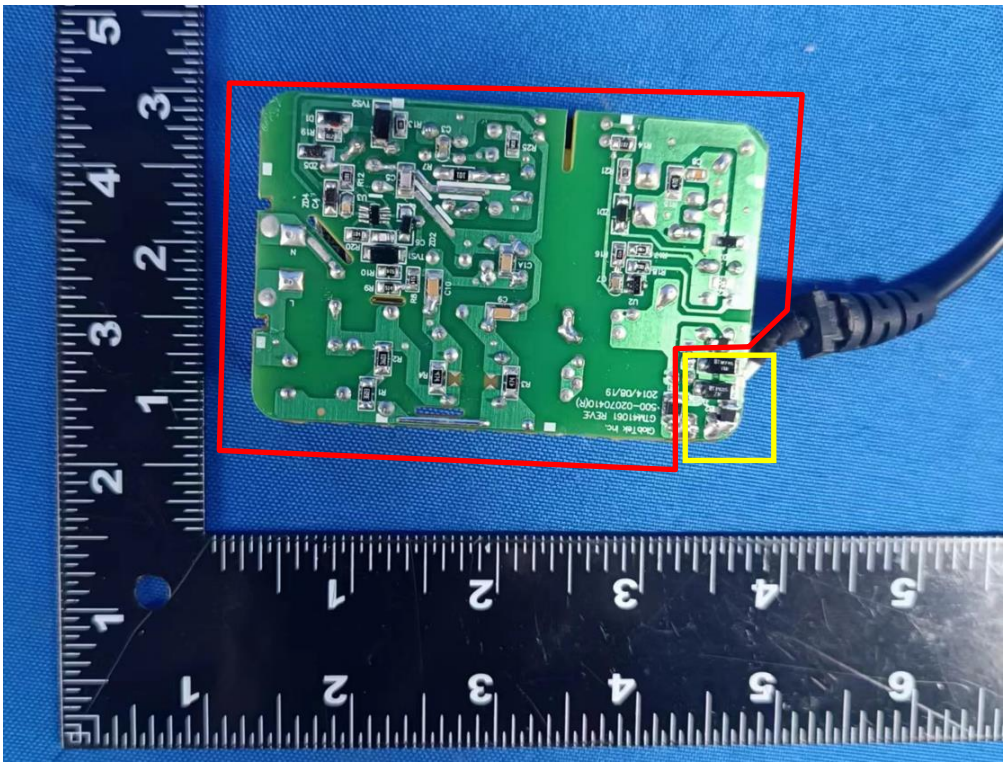




☒ ES ☐ PS ☐ MS ☐ TS ☐ RS

ENERGY SOURCE DIAGRAM		
Indicate which energy sources are included in the energy source diagram. Insert diagram below		
Class 1	Class 2	Class 3





☐ ES ☒ PS ☐ MS ☐ TS ☐ RS

ENERGY SOURCE DIAGRAM		
Indicate which energy sources are included in the energy source diagram. Insert diagram below		
Class 1	Class 2	Class 3

MS1, TS1



RS1



☐ ES ☐ PS ☒ MS ☒ TS ☒ RS

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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.5.2	No explosion during normal/abnormal operating condition	(See Clause B.2, B.3)	P
	No harm by explosion during single fault conditions	(See Clause B.4)	N/A
4.6	**Fixing of conductors**		P
	Fix conductors not to defeat a safeguard	There is no possibility that can reducing clearances or creepage distances.	P
	Compliance is checked by test ..... :		P
4.7	**Equipment for direct insertion into mains socket–outlets**		P
4.7.2	Mains plug part complies with relevant standard .. :	EN 50075. Pass 50 tumbling barrel tests.	P
4.7.3	Torque (Nm) ..... :	Max. 0.14 Nm for all plug types.	P
4.8	**Equipment containing coin/button cell batteries**		N/A
4.8.1	General	No such battery.	N/A
4.8.2	Instructional safeguard ..... :		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	**Likelihood of fire or shock due to entry of conductive object**		N/A
4.10	**Component requirements**		P
4.10.1	Disconnect Device	(See Annex L)	P
4.10.2	Switches and relays	No such component used.	N/A

5	**ELECTRICALLY-CAUSED INJURY**		P
5.2	**Classification and limits of electrical energy sources**		P
5.2.2	ES1, ES2 and ES3 limits	See below:	P
5.2.2.2	Steady-state voltage and current limits .....:	(See appended table 5.2)	P
5.2.2.3	Capacitance limits .....:	(See appended table 5.2)	P
5.2.2.4	Single pulse limits .....:		N/A
5.2.2.5	Limits for repetitive pulses .....:		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.6	Ringing signals		N/A
5.2.2.7	Audio signals		N/A
5.3	**Protection against electrical energy sources**		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	Sufficient safeguard was provided between energy source and ordinary, instructed and skilled persons.	P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits	Reinforced safeguard was provided between energy source and ordinary, instructed and skilled persons.	P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors	It will not be serviced.	N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards	ES3 parts were not accessible to ordinary and instructed persons.	P
	Accessibility to outdoor equipment bare parts	Not intend to outdoor used.	N/A
5.3.2.2	Contact requirements	No openings in the enclosure.	N/A
	Test with test probe from Annex V		—
5.3.2.2 a)	Air gap – electric strength test potential (V) .....:		N/A
5.3.2.2 b)	Air gap – distance (mm) .....:		N/A
5.3.2.3	Compliance		N/A
5.3.2.4	Terminals for connecting stripped wire	No such terminal.	N/A
5.4	**Insulation materials and requirements**		P
5.4.1.2	Properties of insulating material	Insulating material complied with cl. 5 and Annex T. No hygroscopic material.	P
5.4.1.3	Material is non-hygroscopic	See clause 5.4.8 and 5.4.9	P
5.4.1.4	Maximum operating temperature for insulating materials.....:	(See appended table 5.4.1.4) Transformer insulation system is certified by UL.	P
5.4.1.5	Pollution degrees .....:	2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling test		N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such part.	N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage .....:	(See appended table 5.4.1.8)	P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	Ball pressure test has been considered.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.10.2	Vicat test.....:		N/A
5.4.1.10.3	Ball pressure test .....:	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances		P
5.4.2.1	General requirements	See below	P
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance	The highest voltage is temporary overvoltage.	P
	Temporary overvoltage .....:	2000V peak	—
5.4.2.3	Procedure 2 for determining clearance	See below:	P
5.4.2.3.2.2	a.c. mains transient voltage.....:	2500V peak	—
5.4.2.3.2.3	d.c. mains transient voltage .....:		—
5.4.2.3.2.4	External circuit transient voltage.....:		—
5.4.2.3.2.5	Transient voltage determined by measurement .....:		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test .....:	Not used.	N/A
5.4.2.5	Multiplication factors for clearances and test voltages .....:	Multiplication factor 1.14 for clearance is used. (<3000m)	P
5.4.2.6	Clearance measurement .....:	(See appended table 5.4.2)	P
5.4.3	Creepage distances	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material group .....:	IIIb	—
5.4.3.4	Creepage distances measurement .....:	(See appended table 5.4.3)	P
5.4.4	Solid insulation		P
5.4.4.1	General requirements	See below:	P
5.4.4.2	Minimum distance through insulation .....:	(See appended table 5.4.4.2)	P
5.4.4.3	Insulating compound forming solid insulation	Evaluated with cl. 5.4.4.4	P
5.4.4.4	Solid insulation in semiconductor devices	For approved opto-coupler used and comply with G.12. (See appended table 4.1.2)	P
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material		P
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material	(See appended table 5.4.4.2)	P
	Number of layers (pcs) .....:		P
5.4.4.6.3	Non-separable thin sheet material	Not used.	N/A
	Number of layers (pcs) .....:		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.4	Standard test procedure for non-separable thin sheet material ..... :		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components	Insulation on winding wire complies with G.6.	P
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P, K_R, d, V_{PW} (V) ..... :	(See appended Table 5.4.4.9)	P
	Alternative by electric strength test, tested voltage (V), K_R ..... :	(See appended Tables 5.4.4.9 and 5.4.9)	P
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance (MΩ)..... :		N/A
	Electric strength test .....:		N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning	Humidity treatment performed for 168 hrs pre client's request. Tested on Structure A and Structure B.	P
	Relative humidity (%), temperature (°C), duration (h) ..... :	95% r.h., 40°C, 168hrs	—
5.4.9	Electric strength test	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for type test of solid insulation.....:	Test voltage based on transient voltages. (See appended table 5.4.9)	P
5.4.9.2	Test procedure for routine test		N/A
5.4.10	Safeguards against transient voltages from external circuits		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test ..... :		N/A
5.4.10.2.3	Steady-state test..... :		N/A
5.4.10.3	Verification for insulation breakdown for impulse test ..... :		N/A
5.4.11	Separation between external circuits and earth	The equipment not intended to connect to external circuits.	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V) ..... :		—
	Nominal voltage U_{peak} (V) ..... :		—
	Max increase due to variation ΔU_{sp} ..... :		—
	Max increase due to ageing ΔU_{sa} ..... :		—
5.4.11.3	Test method and compliance ..... :		N/A
5.4.12	Insulating liquid		N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid ..... :		N/A
5.4.12.3	Compatibility of an insulating liquid ..... :		N/A
5.4.12.4	Container for insulating liquid ..... :		N/A
5.5	**Components as safeguards**		P
5.5.1	General		P
5.5.2	Capacitors and RC units		P
5.5.2.1	General requirement	X, Y capacitors complied with IEC 60384-14.	P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector ..... :	(See appended table 5.5.2.2)	P
5.5.3	Transformers	T1 (See Annex G.5.3)	P
5.5.4	Optocouplers	Opto-coupler (U1), (See Annex G.12)	P
5.5.5	Relays	No such component used.	N/A
5.5.6	Resistors	Approved discharge resistor (R1, R2) served as a safeguard, but not bridging Basic, Supplementary or Reinforced insulation. (See appended table 4.1.2)	P
5.5.7	SPDs	(See Annex G.8)	P
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable ..... :		N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment	Not for outdoor used.	N/A
	RCD rated residual operating current (mA) ..... :		—
5.6	**Protective conductor**		N/A
5.6.2	Requirement for protective conductors		N/A
5.6	**Protective conductor**	Class II equipment.	N/A
5.6.2	Requirement for protective conductors		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm^2) ..... :		—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm^2). ..... :		—
5.6.4.2	Protective current rating (A)..... :		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)..... :		N/A
	Terminal size for connecting protective bonding conductors (mm) .....:		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective bonding system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method..... :		N/A
5.6.6.3	Resistance (Ω) or voltage drop..... :		N/A
5.6.7	Reliable connection of a protective earthing conductor		N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm^2)..... :		N/A
	Class II with functional earthing marking ..... :		N/A
	Appliance inlet cl & cr (mm)..... :		N/A
5.7	**Prospective touch voltage, touch current and protective conductor current**		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current	(See appended table 5.7.4)	P
5.7.2.2	Measurement of voltage		P
5.7.3	Equipment set-up, supply connections and earth connections	Class II equipment.	N/A
5.7.4	Unearthed accessible parts..... :	(See appended table 5.7.4)	P
5.7.5	Earthed accessible conductive parts..... :	Class II equipment.	N/A
5.7.6	Requirements when touch current exceeds ES2 limits	Touch current is within ES1.	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Protective conductor current (mA)..... :		N/A
	Instructional Safeguard..... :		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits	The equipment not intended connect to external circuits.	N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	a) Equipment connected to earthed external circuits, current (mA) ..... :		N/A
	b) Equipment connected to unearthed external circuits, current (mA) ..... :		N/A
5.8	**Backfeed safeguard in battery backed up supplies**		N/A
	Mains terminal ES.....:		N/A
	Air gap (mm).....:		N/A

6	**ELECTRICALLY- CAUSED FIRE**		P
6.2	**Classification of PS and PIS**		P
6.2.2	Power source circuit classifications.....:	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources	See below:	P
6.2.3.1	Arcing PIS .....:	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS .....:	(See appended table 6.2.3.2)	P
6.3	**Safeguards against fire under normal operating and abnormal operating conditions**		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials ..... :	Measured temperature<300°C (See appended table5.4.1.4, 9.3, B.1.5, B.2.6 and B.3, B.4)	P
	Combustible materials outside fire enclosure .....:	No combustible material outside fire enclosure.	N/A
6.4	**Safeguards against fire under single fault conditions**		P
6.4.1	Safeguard method	Control fire spread was used.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	Supplementary safeguards		N/A
6.4.3.2	Single Fault Conditions ..... :		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits	All circuit is PS2 or above.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.5.2	Supplementary safeguards	Fire enclosure used and Output connector are metal.	P
6.4.6	Control of fire spread in PS3 circuits	The enclosure made of V-0 and components comply with 6.4.6. (refer to table 4.1.2)	P
6.4.7	Separation of combustible materials from a PIS	Varistors (MOV1, MOV2) were considered as Arcing PIS, and all circuit are resistive PIS. Fire enclosure is made by V-0 material. Components complied with requirement, detail refer to table 6.2.3.1 and 6.2.3.2.	P
6.4.7.2	Separation by distance	All components are within PIS fire cone, refer to table 6.2.3.1 and 6.2.3.2.	P
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	Fire enclosure is made of V-0 material.	P
6.4.8.2	Fire enclosure and fire barrier material properties	See below:	P
6.4.8.2.1	Requirements for a fire barrier	No fire barrier.	N/A
6.4.8.2.2	Requirements for a fire enclosure	Available power <4000W. Fire enclosure is made of V-0 material.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	No openings in the fire enclosure.	N/A
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties		N/A
	Openings dimensions (mm)..... :		N/A
6.4.8.3.4	Bottom openings and properties		N/A
	Openings dimensions (mm)..... :		N/A
	Flammability tests for the bottom of a fire enclosure		N/A
	Instructional Safeguard.....:		N/A
6.4.8.3.5	Side openings and properties		N/A
	Openings dimensions (mm)..... :		N/A
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)..... :		N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating ..... :	Fire enclosure is made of V-0 material.	P
6.4.9	Flammability of insulating liquid.....:	No such part.	N/A
6.5	**Internal and external wiring**		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.5.1	General requirements	Internal wires and output wires complied with IEC 60695-11-21. The test method described in IEC 60695-11-21 is considered equivalent to that test wiring materials which bearing VW-1 rating (according to UL758).	P
6.5.2	Requirements for interconnection to building wiring ..... :		N/A
6.5.3	Internal wiring size (mm^2) for socket-outlets..... :		N/A
6.6	**Safeguards against fire due to the connection to additional equipment**		P

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

8	**MECHANICALLY-CAUSED INJURY**		P
8.2	**Mechanical energy source classifications**		P
8.3	**Safeguards against mechanical energy sources**		P
8.4	**Safeguards against parts with sharp edges and corners**		P
8.4.1	Safeguards	MS1: No sharp edges or corners. Mass less than 7 kg.	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m).....:		N/A
	Space between end point and nearest fixed mechanical part (mm) .....:		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly .....:		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts .....:		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N).....:		N/A
8.5.4.3.5	Compliance		N/A
8.5.5	High pressure lamps		N/A
	Explosion test.....:		N/A
8.5.5.3	Glass particles dimensions (mm) .....:		N/A
8.6	**Stability of equipment**		N/A
8.6.1	General	MS1	N/A
	Instructional safeguard.....:		N/A
8.6.2	Static stability		N/A
8.6.2.2	Static stability test .....:		N/A
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm) .....:		—
	Tilt test		N/A
8.6.4	Glass slide test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.5	Horizontal force test ..... :		N/A
8.7	**Equipment mounted to wall, ceiling or other structure**		N/A
8.7.1	Mount means type ..... :		N/A
8.7.2	Test methods		N/A
	Test 1, additional downwards force (N)..... :		N/A
	Test 2, number of attachment points and test force (N)..... :		N/A
	Test 3 Nominal diameter (mm) and applied torque (Nm)..... :		N/A
8.8	**Handles strength**		N/A
8.8.1	General		N/A
8.8.2	Handle strength test		N/A
	Number of handles..... :		—
	Force applied (N) ..... :		—
8.9	**Wheels or casters attachment requirements**		N/A
8.9.2	Pull test		N/A
8.10	**Carts, stands and similar carriers**		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions..... :		N/A
8.10.3	Cart, stand or carrier loading test		N/A
	Loading force applied (N) ..... :		N/A
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Force applied (N) ..... :		—
8.10.6	Thermoplastic temperature stability		N/A
8.11	**Mounting means for slide-rail mounted equipment (SRME)**		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard..... :		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied..... :		N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	**Telescoping or rod antennas**		N/A
	Button/ball diameter (mm) ..... :		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
9	**THERMAL BURN INJURY**		P
9.2	**Thermal energy source classifications**		P
9.3	**Touch temperature limits**		P
9.3.1	Touch temperatures of accessible parts .....:	(See appended table 5.4.1.4, 9.3, B.1.5, B.2.6)	P
9.3.2	Test method and compliance		P
9.4	**Safeguards against thermal energy sources**		P
9.5	**Requirements for safeguards**		P
9.5.1	Equipment safeguard	Enclosure provided to limit the transfer of thermal energy of internal parts under normal operating conditions and abnormal operating conditions.	P
9.5.2	Instructional safeguard.....:		N/A
9.6	**Requirements for wireless power transmitters**		N/A
9.6.1	General		N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance .....:	(See appended table 9.6)	N/A

10	**RADIATION**		P
10.2	**Radiation energy source classification**		P
10.2.1	General classification	LED is indicating lights type (Diffusive LED): RS1	P
	Lasers ..... :		—
	Lamps and lamp systems ..... :		—
	Image projectors ..... :		—
	X-Ray ..... :		—
	Personal music player ..... :		—
10.3	**Safeguards against laser radiation**		N/A
	The standard(s) equipment containing laser(s) comply .....:		N/A
10.4	**Safeguards against optical radiation from lamps and lamp systems (including LED types)**		N/A
10.4.1	General requirements		N/A
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and location .....:		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	UV radiation exposure .....:		N/A
10.4.3	Instructional safeguard ..... :		N/A
10.5	**Safeguards against X-radiation**		N/A
10.5.1	Requirements		N/A
	Instructional safeguard for skilled persons ..... :		—
10.5.3	Maximum radiation (pA/kg)..... :		—
10.6	**Safeguards against acoustic energy sources**		N/A
10.6.1	General		
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, dB(A).....:		N/A
	Unweighted RMS output voltage (mV).....:		N/A
	Digital output signal (dBFS).....:		N/A
10.6.3	Requirements for dose-based systems		N/A
10.6.3.1	General requirements		N/A
10.6.3.2	Dose-based warning and automatic decrease		N/A
10.6.3.3	Exposure-based warning and requirements		N/A
	30 s integrated exposure level (MEL30) .....:		N/A
	Warning for MEL ≥ 100 dB(A) .....:		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards ..... :		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV)..... :		N/A
10.6.6.2	Corded listening devices with digital input		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A) .....:		N/A
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A) .....:		N/A

B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.1	**General**		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.2	**Normal operating conditions**		P
B.2.1	General requirements.....:	(See Test Item Particulars and appended test tables)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Audio Amplifiers and equipment with audio amplifiers .....:		N/A
B.2.3	Supply voltage and tolerances	+10% / -10% (264V / 90V)	P
B.2.5	Input test.....:	(See appended table B.2.5)	P
B.3	**Simulated abnormal operating conditions**		P
B.3.1	General	See below:	P
B.3.2	Covering of ventilation openings	No openings in enclosure.	N/A
	Instructional safeguard .....:		N/A
B.3.3	DC mains polarity test	AC mains supplied.	N/A
B.3.4	Setting of voltage selector	No voltage selector.	N/A
B.3.5	Maximum load at output terminals	(See appended table B.3)	P
B.3.6	Reverse battery polarity	No battery.	N/A
B.3.7	Audio amplifier abnormal operating conditions	No audio amplifier.	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions .....:	All safeguards remain effective. (See appended table B.3)	P
B.4	**Simulated single fault conditions**		P
B.4.1	General		P
B.4.2	Temperature controlling device	No such device.	N/A
B.4.3	Blocked motor test	No motor.	N/A
B.4.4	Functional insulation	See below	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated PCB used.	N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors	(see appended table B.4)	P
B.4.6	Short circuit or disconnection of passive components	(see appended table B.4)	P
B.4.7	Continuous operation of components	No component intended for short-time operation or intermittent operation.	N/A
B.4.8	Compliance during and after single fault conditions .....:	Enclosure limited to TS1 during and after single fault conditions. Accessible output terminal limited to ES1 and TS1 during and after single fault conditions. No flame during and after single fault condition. (See appended table B.4)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.4.9	Battery charging and discharging under single fault conditions		N/A
C	**UV RADIATION**		N/A
C.1	**Protection of materials in equipment from UV radiation**		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	**UV light conditioning test**		N/A
C.2.1	Test apparatus .....:		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure test		N/A
C.2.4	Xenon-arc light-exposure test		N/A
D	**TEST GENERATORS**		N/A
D.1	**Impulse test generators**		N/A
D.2	**Antenna interface test generator**		N/A
D.3	**Electronic pulse generator**		N/A
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		N/A
E.1	**Electrical energy source classification for audio signals**		N/A
	Maximum non-clipped output power (W) .....:		—
	Rated load impedance (Ω) .....:		—
	Open-circuit output voltage (V) .....:		—
	Instructional safeguard .....:		—
E.2	**Audio amplifier normal operating conditions**		N/A
	Audio signal source type .....:		—
	Audio output power (W).....:		—
	Audio output voltage (V).....:		—
	Rated load impedance (Ω) .....:		—
	Requirements for temperature measurement		N/A
E.3	Audio amplifier abnormal operating conditions		N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	**General**		P
	Language .....:	English	—
F.2	**Letter symbols and graphical symbols**		P
F.2.1	Letter symbols according to IEC60027-1	A, V, Hz	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific	AC symbol (IEC 60417-5032), DC symbol (IEC 60417-5031), Class II symbol (IEC 60417-5172)	P
F.3	**Equipment markings**		P
F.3.1	Equipment marking locations	The required marking is located on the external enclosure of the equipment.	P
F.3.2	Equipment identification markings	Refer below.	P
F.3.2.1	Manufacturer identification .....:	See page 2.	P
F.3.2.2	Model identification .....:	See page 2.	P
F.3.3	Equipment rating markings	Refer below.	P
F.3.3.1	Equipment with direct connection to mains	Refer F.3.3.3 – F.3.3.6	P
F.3.3.2	Equipment without direct connection to mains	Direct connection to mains.	N/A
F.3.3.3	Nature of the supply voltage .....:	~ (IEC 60417-5032)	P
F.3.3.4	Rated voltage .....:	See page 2.	P
F.3.3.5	Rated frequency .....:	See page 2.	P
F.3.3.6	Rated current or rated power .....:	See page 2.	P
F.3.3.7	Equipment with multiple supply connections	Single supply connection.	N/A
F.3.4	Voltage setting device	No voltage selector. Auto ranging used.	N/A
F.3.5	Terminals and operating devices	Refer below.	N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings .....:	No mains outlet.	N/A
F.3.5.2	Switch position identification marking .....:	No switch.	N/A
F.3.5.3	Replacement fuse identification and rating markings .....:	The primary fuse is located in Live and Neutral phase and It is marked: F1 T2A/250VAC, F2 T2A/250VAC.	P
	Instructional safeguards for neutral fuse .....:		N/A
F.3.5.4	Replacement battery identification marking .....:	No battery.	N/A
F.3.5.5	Neutral conductor terminal	Pluggable equipment.	N/A
F.3.5.6	Terminal marking location	No such terminals.	N/A
F.3.6	Equipment markings related to equipment classification	Refer below.	P
F.3.6.1	Class I equipment	Class II equipment.	N/A
F.3.6.1.1	Protective earthing conductor terminal.....:		N/A
F.3.6.1.2	Protective bonding conductor terminals .....:		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.6.2	Equipment class marking .....:	Class II equipment without functional earth. Symbol IEC 60417-5172 used.	P
F.3.6.3	Functional earthing terminal marking .....:		N/A
F.3.7	Equipment IP rating marking .....:	No IP rating.	N/A
F.3.8	External power supply output marking .....:	See copy of marking plate	P
F.3.9	Durability, legibility and permanence of marking	Marking comply with the requirements.	P
F.3.10	Test for permanence of markings	Markings withstand the required test.	P
F.4	**Instructions**		P
	a) Information prior to installation and initial use		P
	b) Equipment for use in locations where children not likely to be present		N/A
	c) Instructions for installation and interconnection		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Equipment intended to be fastened in place		N/A
	f) Instructions for audio equipment terminals		N/A
	g) Protective earthing used as a safeguard		N/A
	h) Protective conductor current exceeding ES2 limits		N/A
	i) Graphic symbols used on equipment		N/A
	j) Permanently connected equipment not provided with all-pole mains switch		N/A
	k) Replaceable components or modules providing safeguard function		N/A
	l) Equipment containing insulating liquid		N/A
	m) Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		N/A
G	**COMPONENTS**		P
G.1	**Switches**		N/A
G.1.1	General	No mains switch.	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.1.3	Test method and compliance		N/A
G.2	**Relays**		N/A
G.2.1	Requirements	No relay.	N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supplying power to other equipment		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.2.4	Test method and compliance		N/A
G.3	**Protective devices**		P
G.3.1	Thermal cut-offs		N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links		N/A
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N/A
	b) Thermal links tested as part of the equipment		N/A
G.3.2.2	Test method and compliance		N/A
G.3.3	PTC thermistors		N/A
G.3.4	Overcurrent protection devices	F1, F2 complied with IEC 60127.	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions.....:	(See appended table B.4)	N/A
G.4	**Connectors**		P
G.4.1	Spacings	Refer to G.4.2.	P
G.4.2	Mains connector configuration .....:	Direct plug-in equipment.	N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	The output terminal is unlikely insertion into mains socket-outlets or appliance coupler.	P
G.5	**Wound components**		P
G.5.1	Wire insulation in wound components	(See Annex J)	P
G.5.1.2	Protection against mechanical stress	Protection against mechanical stress is provided by insulation tube and insulation tape.	P
G.5.2	Endurance test		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Test time (days per cycle) .....:		—
	Test temperature (°C) .....:		—
G.5.2.3	Wound components supplied from the mains		N/A
G.5.2.4	No insulation breakdown		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.5.3	Transformers		P
G.5.3.1	Compliance method .....:	IEC 62368-1 cl.G.5.3.2 & G.5.3.3.	P
	Position.....:	T1	P
	Method of protection.....:	Inherent.	P
G.5.3.2	Insulation	Reinforced.	P
	Protection from displacement of windings .....:	Refer to transformer specification.	—
G.5.3.3	Transformer overload tests	(See appended table B.3)	P
G.5.3.3.1	Test conditions	Switch mode transformer tested in the complete equipment. Load applied to the output of the power supply unit.	P
G.5.3.3.2	Winding temperatures	Current limiting transformer, Class 130. Temperature limit: 175°C	P
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW	FIW not used.	N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter .....:		—
G.5.3.4.2	Transformers with basic insulation only		N/A
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		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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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	Peak working voltage is ES3. Not under mechanical stress. Basic insulation is required. Triple insulated wire in transformer, Peak working voltage is ES3. Reinforced insulation is required. IEC 62368-1 certified component.	P
G.6.2	Enamelled winding wire insulation		N/A
G.7	**Mains supply cords**		N/A
G.7.1	General requirements	Direct plug-in equipment.	N/A
	Type.....:		—
G.7.2	Cross sectional area (mm^2 or AWG).....:		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) .....:		N/A
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm).....:		N/A
G.7.3.2.4	Strain relief and cord anchorage material		N/A
G.7.4	Cord Entry		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Test method and compliance		N/A
	Overall diameter or minor overall dimension, *D* (mm) .....:		—
	Radius of curvature after test (mm).....:		—
G.7.6	Supply wiring space		N/A
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	**Varistors**		P
G.8.1	General requirements	Approved Varistors (MOV1, MOV2) used. See appended table 4.1.2.	P
G.8.2	Safeguards against fire	The fire enclosure V-0 provided. Overload test conducted.	P
G.8.2.1	General		P
G.8.2.2	Varistor overload test	Tested and passed. During and following the test, there was no risk of fire and equipment safeguard still remain.	P
G.8.2.3	Temporary overvoltage test		N/A
G.9	**Integrated circuit (IC) current limiters**		N/A
G.9.1	Requirements	No such component used.	N/A
	IC limiter output current (max. 5A) .....:		—
	Manufacturers' defined drift .....:		—
G.9.2	Test Program		N/A
G.9.3	Compliance		N/A
G.10	**Resistors**		N/A
G.10.1	General		N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
G.11	**Capacitors and RC units**		P
G.11.1	General requirements	X1 or X2 and Y1 capacitors are certified according to IEC60384-14	P
G.11.2	Conditioning of capacitors and RC units	Capacitors complied with IEC 60384-14.	P
G.11.3	Rules for selecting capacitors	X1 or X2 and Y1 capacitors are certified according to IEC60384-14	P
G.12	**Optocouplers**		P
	Optocouplers comply with IEC 60747-5-5 with specifics	Certificated optocoupler used and comply with requirement. (See appended table 4.1.2)	N/A
	Type test voltage $V_{ini,a}$ .....:		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Routine test voltage, $V_{ini, b}$ .....:	.	—
G.13	**Printed boards**	See below:	P
G.13.1	General requirements	Primary and secondary circuits are not insulated by PCB layers.	P
G.13.2	Uncoated printed boards	Safeguard complied cl.5.4.2 & 5.4.3.	P
G.13.3	Coated printed boards	Not used.	N/A
G.13.4	Insulation between conductors on the same inner surface	Inner surface not used with cemented joint requirements.	N/A
G.13.5	Insulation between conductors on different surfaces	Basic insulation. No thickness requirement.	N/A
	Distance through insulation.....:		N/A
	Number of insulation layers (pcs) .....:		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance		N/A
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements .....:		N/A
G.15	**Pressurized liquid filled components**		N/A
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
G.16	**IC including capacitor discharge function (ICX)**		N/A
G.16.1	Condition for fault tested is not required	No such component used.	N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test .....:		—
	Mains voltage that impulses to be superimposed on .....:		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test .....:		—
G.16.3	Capacitor discharge test .....:		N/A
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	**General**		N/A
H.2	**Method A**		N/A
H.3	**Method B**		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) .....:		—
H.3.1.2	Voltage (V) .....:		—
H.3.1.3	Cadence; time (s) and voltage (V) .....:		—
H.3.1.4	Single fault current (mA): .....:		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) .....:		N/A
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		P
J.1	**General**		P
	Winding wire insulation.....:	Triple insulated wire used in transformer is separately approved.	—
	Solid round winding wire, diameter (mm).....:		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm^2) .....:		N/A
J.2/J.3	Tests and Manufacturing		—
K	**SAFETY INTERLOCKS**		N/A
K.1	**General requirements**		N/A
	Instructional safeguard .....:		N/A
K.2	**Components of safety interlock safeguard mechanism**		N/A
K.3	**Inadvertent change of operating mode**		N/A
K.4	**Interlock safeguard override**		N/A
K.5	**Fail-safe**		N/A
K.5.1	Under single fault condition		N/A
K.6	**Mechanically operated safety interlocks**		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance .....:		N/A
K.7	**Interlock circuit isolation**		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm) .....:		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm) .....:		N/A
	Electric strength test before and after the test of K.7.2 .....:		N/A
K.7.2	Overload test, Current (A) .....:		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	**DISCONNECT DEVICES**		P
L.1	**General requirements**	Both phases conductors were interrupted by plug on equipment.	P
L.2	**Permanently connected equipment**		N/A
L.3	**Parts that remain energized**	No parts remain energized, refer to cl.5.5.2.2.	N/A
L.4	**Single-phase equipment**	Both poles were disconnected simultaneously.	P
L.5	**Three-phase equipment**		N/A
L.6	**Switches as disconnect devices**	Not used.	N/A
L.7	**Plugs as disconnect devices**	Direct plug in equipment, no power cord used.	N/A
L.8	**Multiple power sources**	Single power source.	N/A
	Instructional safeguard .....:		N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		N/A
M.1	**General requirements**		N/A
M.2	**Safety of batteries and their cells**		N/A
M.2.1	Batteries and their cells comply with relevant IEC standards.....:		N/A
M.3	**Protection circuits for batteries provided within the equipment**		N/A
M.3.1	Requirements		N/A
M.3.2	Test method		N/A
	Overcharging of a rechargeable battery		N/A
	Excessive discharging		N/A
	Unintentional charging of a non-rechargeable battery		N/A
	Reverse charging of a rechargeable battery		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.3.3	Compliance		N/A
M.4	**Additional safeguards for equipment containing a portable secondary lithium battery**		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance .....:		N/A
M.4.3	Fire enclosure.....:		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation and procedure for the drop test		N/A
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): .....:		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
M.5	**Risk of burn due to short-circuit during carrying**		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
M.6	**Safeguards against short-circuits**		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance		N/A
M.7	**Risk of explosion from lead acid and NiCd batteries**		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
	Calculated hydrogen generation rate .....:		N/A
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m^3/h).....:		N/A
M.7.3	Ventilation tests		N/A
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%).....:		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	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

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.8	**Protection against internal ignition from external spark sources of batteries with aqueous electrolyte**		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_Z (m^3/s) .....:		—
M.8.2.3	Correction factors .....:		—
M.8.2.4	Calculation of distance *d* (mm) .....:		—
M.9	**Preventing electrolyte spillage**		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse		N/A
	Instructional safeguard .....:		N/A
N	**ELECTROCHEMICAL POTENTIALS**		N/A
	Material(s) used.....:		—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		P
	Value of *X* (mm) .....:	1.0 mm	—
P	**SAFEGUARDS AGAINST CONDUCTIVE OBJECTS**		N/A
P.1	**General**		N/A
P.2	**Safeguards against entry or consequences of entry of a foreign object**		N/A
P.2.1	General	No openings.	N/A
P.2.2	Safeguards against entry of a foreign object		N/A
	Location and Dimensions (mm) .....:		—
P.2.3	Safeguards against the consequences of entry of a foreign object		N/A
P.2.3.1	Safeguard requirements		N/A
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment		N/A
	Transportable equipment with metalized plastic parts.....:		N/A
P.2.3.2	Consequence of entry test .....:		N/A
P.3	**Safeguards against spillage of internal liquids**		N/A
P.3.1	General		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
P.4	**Metallized coatings and adhesives securing parts**		N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T_C (°C) .....:		—
	Duration (weeks) .....:		—
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		P
Q.1	**Limited power sources**		P
Q.1.1	Requirements	See below:	P
	a) Inherently limited output	The equipment against overload fault condition by using inherently limited output. (see appended table Annex Q.1)	P
	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 .....:	(See appended table Q.1)	P
	Current rating of overcurrent protective device (A) .....:		N/A
Q.2	**Test for external circuits – paired conductor cable**	Not connect to external circuits.	N/A
	Maximum output current (A) .....:		N/A
	Current limiting method .....:		—
R	**LIMITED SHORT CIRCUIT TEST**		N/A
R.1	**General**	Class II equipment.	N/A
R.2	**Test setup**		N/A
	Overcurrent protective device for test .....:		—
R.3	**Test method**		N/A
	Cord/cable used for test .....:		—
R.4	**Compliance**		N/A
S	**TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
S.1	**Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W**		N/A
	Samples, material.....:	Fire enclosure is made from V-0 material. No testing required	—
	Wall thickness (mm) .....:		—
	Conditioning (°C) .....:		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	**Flammability test for fire enclosure and fire barrier integrity**		N/A
	Samples, material.....:		—
	Wall thickness (mm) .....:		—
	Conditioning (°C) .....:		—
S.3	**Flammability test for the bottom of a fire enclosure**		N/A
S.3.1	Mounting of samples		N/A
S.3.2	Test method and compliance		N/A
	Mounting of samples .....:		—
	Wall thickness (mm) .....:		—
S.4	**Flammability classification of materials**		N/A
S.5	**Flammability test for fire enclosure materials of equipment with a steady state power exceeding 4 000 W**		N/A
	Samples, material.....:		—
	Wall thickness (mm) .....:		—
	Conditioning (°C) .....:		—
T	**MECHANICAL STRENGTH TESTS**		P
T.1	**General**		P
T.2	**Steady force test, 10 N .....:**	(See appended table T.2)	P
T.3	**Steady force test, 30 N .....:**		N/A
T.4	**Steady force test, 100 N .....:**	(See appended table T.4)	P
T.5	**Steady force test, 250 N .....:**		N/A
T.6	**Enclosure impact test**		N/A
	Fall test		N/A
	Swing test		N/A
T.7	**Drop test .....:**	(See appended table T.7)	P
T.8	**Stress relief test .....:**	(See appended table T.8)	P
T.9	**Glass Impact Test.....:**		N/A
T.10	**Glass fragmentation test**		N/A
	Number of particles counted .....:		N/A
T.11	**Test for telescoping or rod antennas**		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Torque value (Nm) .....:		N/A
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION**		N/A
U.1	**General**		N/A
	Instructional safeguard **:**		N/A
U.2	**Test method and compliance for non-intrinsically protected CRTs**		N/A
U.3	**Protective screen**		N/A
V	**DETERMINATION OF ACCESSIBLE PARTS**		P
V.1	**Accessible parts of equipment**		P
V.1.1	General	See below	P
V.1.2	Surfaces and openings tested with jointed test probes		P
V.1.3	Openings tested with straight unjointed test probes	No openings.	N/A
V.1.4	Plugs, jacks, connectors tested with blunt probe		N/A
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		P
V.2	**Accessible part criterion**		P
X	**ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)**		N/A
	Clearance.....:	(See appended table X)	N/A
Y	**CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES**		N/A
Y.1	**General**		N/A
Y.2	**Resistance to UV radiation**		N/A
Y.3	**Resistance to corrosion**		N/A
Y.3	**Resistance to corrosion**		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by .....:		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure.....:		N/A
Y.3.5	Compliance		N/A
Y.4	**Gaskets**		N/A
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests		N/A
	Alternative test methods.....:		N/A
Y.4.4	Compression test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means		N/A
Y.5	**Protection of equipment within an outdoor enclosure**		N/A
Y.5.1	General		N/A
Y.5.2	Protection from moisture		N/A
	Relevant tests of IEC 60529 or Y.5.3.....:		N/A
Y.5.3	Water spray test		N/A
Y.5.4	Protection from plants and vermin		N/A
Y.5.5	Protection from excessive dust		N/A
Y.5.5.1	General		N/A
Y.5.5.2	IP5X equipment		N/A
Y.5.5.3	IP6X equipment		N/A
Y.6	**Mechanical strength of enclosures**		N/A
Y.6.1	General		N/A
Y.6.2	Impact test.....:		N/A

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

5.2	**TABLE: Classification of electrical energy sources**						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type [1]	Additional Info [2]	
Model: GTM41061-1830, output 30Vdc/0.6A							
264Vac	Primary Circuit	Normal	N/A	N/A	N/A	N/A	ES3
		Abnormal	N/A	N/A	N/A	N/A	ES3
		Single fault – SC/OC	N/A	N/A	N/A	N/A	ES3
264Vac	Secondary Circuit (T1 Pin A to GND)	Normal	196 Vpk	N/A	SS	61.5 KHz	ES3
264Vac	Secondary Circuit (T1 Pin B to GND)	Normal	17.0 Vpk	N/A	SS	61.5 KHz	ES1
264Vac	Secondary Circuit (T1 after D7 to GND)	Normal	46.8Vpk	N/A	SS	61.5KHz	ES1
264Vac	DC output port	Normal	30.0Vdc	N/A	SS	DC.	ES1
		Abnormal (output overload)	30.0Vdc	N/A	SS	DC	ES1
		Fault (Refer to fault condition on table B.3 & B.4, output shutdown)	0	N/A	SS	DC	ES1
		Fault (Refer to fault condition on table B.3 & B.4, fuse open)	0	N/A	SS	DC	ES1
264Vac	X-Cap (CX1)	0.47µF ±20% Max	374Vpk	N/A	CP	N/A	ES3
Supplementary information:							
[1] Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc. [2] Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.							

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

5.4.1.8	**TABLE: Working voltage measurement**	P

Location	Peak voltage (V)	RMS voltage (V)	Frequency (Hz)	Comments
Model: GTM41061-1830, output 30Vdc/0.6A				
T1 Pin 1 to Pin A	496	200	61.5K	--
T1 Pin 1 to Pin B	344	198	61.5K	--
T1 Pin 2 to Pin A	392	207	61.5K	--
T1 Pin 2 to Pin B	348	202	61.5K	--
T1 Pin 4 to Pin A	488	206	61.5K	--
T1 Pin 4 to Pin B	452	223	61.5K	--
T1 Pin 5 to Pin A	404	203	61.5K	--
T1 Pin 5 to Pin B	456	203	61.5K	--
U1 Pin 1 to Pin 3	360	210	61.5K	--
U1 Pin 1 to Pin 4	360	208	61.5K	--
U1 Pin 2 to Pin 3	356	209	61.5K	--
U1 Pin 2 to Pin 4	356	208	61.5K	--
CY1 Primary Pin to CY2 Secondary Pin	348	203	60	--
CY1 Pin1 to Pin2	204	112	60	--
CY2 Pin1 to Pin2	96	71	60	--
Model: GTM41061-1812-7.0, output 5Vdc/3.6A				
T1 Pin 1 to Pin A	376	198	64.7K	--
T1 Pin 1 to Pin B	352	198	64.7K	--
T1 Pin 2 to Pin A	356	203	64.7K	--
T1 Pin 2 to Pin B	352	202	64.7K	--
T1 Pin 4 to Pin A	**528**	222	64.7K	--
T1 Pin 4 to Pin B	520	**225**	64.7K	--
T1 Pin 5 to Pin A	420	203	64.7K	--
T1 Pin 5 to Pin B	428	204	64.7K	--
U1 Pin 1 to Pin 3	364	208	64.7K	--
U1 Pin 1 to Pin 4	360	206	64.7K	--
U1 Pin 2 to Pin 3	356	207	64.7K	--
U1 Pin 2 to Pin 4	356	205	64.7K	--
CY1 Primary Pin to CY2 Secondary Pin	348	202	60	--

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

Location	Peak voltage (V)	RMS voltage (V)	Frequency (Hz)	Comments
CY1 Pin1 to Pin2	204	100	60	--
CY2 Pin1 to Pin2	94	60	60	--
Supplementary information:				
The highest measured working voltages in transformer are indicated with bold characters. Vin = 240Vac, 60Hz				

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics		N/A
Method.....:		ISO 306 / B50	—

Object/ Part No./Material	Manufacturer/trademark	Thickness (mm)	T softening (°C)
Supplementary information:			

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics			P
Allowed impression diameter (mm).....:		≤ 2 mm		—

Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)
Plug Holder/ 945(GG)	SABIC INNOVATIVE PLASTICS B V	2.5	125	1.4
Plug Holder/ 945(GG)	SABIC JAPAN L L C	2.5	125	1.4
Bobbin of transformer/4130	CHANG CHUN PLASTICS CO LTD	2.5	125	1.1
Supplementary information:				

IEC 62368-1			
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) [3]	cr (mm)
Basic								
Live to Neutral before fuse (on PCB)	340	240	N/A	1.8	3.0	N/A	2.5	3.0
Fuse (F1) in to out (on PCB)	340	240	N/A	1.8	2.9	N/A	2.5	2.9
Fuse (F2) in to out (on PCB)	340	240	N/A	1.8	2.8	N/A	2.5	2.8
Between two pins of CY1 (on PCB)	204	112	N/A	1.8	3.9	N/A	2.5	3.9
Between two pins of CY2 (on PCB)	96	71	N/A	1.8	4.1	N/A	2.5	4.1
Reinforced								
EU Plug Live and Neutral to External accessible parts (When the plug portion is plugged in the socket without the power supply correctly attached)	340	240	N/A	4.6	5.6	N/A	5.0	5.6
EU Plug blade (plug portion) to External accessible parts	340	240	N/A	4.6	9.0	N/A	5.0	9.0
Primary circuits to accessible enclosure without insulation tape around the PCB edge	340	240	N/A	4.6	5.8	N/A	5.0	5.8
Primary circuits to accessible enclosure with insulation tape around the PCB edge	340	240	N/A	4.6	8.0	N/A	5.0	8.0
CY1 Primary pinto– CY2 Secondary pin (on PCB)	348	203	N/A	4.6	8.0	N/A	8.0	7.8
T1 Primary to Secondary (on PCB)	528	225	64.7K	4.6	7.5	N/A	5.0	9.5 ***1)***
U1 Primary to Secondary (on PCB))	364	210	64.7K	4.6	7.5	N/A	5.0	9.5 ***1)***
Below for Transformer T1								
Reinforced: Primary to Secondary	528	225	64.7K	4.6	10.0	N/A	5.0	10.0

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

Reinforced: Secondary to Core	528	225	64.7K	4.6	10.0	N/A	5.0	10.0
Supplementary information:								
[1] Only for frequency above 30 kHz [2] Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied) [3] Provide Material Group 10N Test performed on the following conductor(s): Primary Heatsink, Secondary Heatsink, Secondary wire, CY1, CY2. T1 core regards as primary component. ***)*** A multiplier factor (1.14) was used to consider the additional altitude requirement for clearance as described under altitude 3000m. ****)*** Limit considered by cl.5.4.2.3.4 with required withstand voltage (2500V). Procedure 2 is used. ***1)*** There is a 1.2mm slot under component. The clearances/Crepage distance of all transformers form different manufactures were evaluated and the structures are the same.								

5.4.4.2	**TABLE: Minimum distance through insulation**			P
Distance through insulation (DTI) at/of	Peak voltage (V)	Insulation	Required DTI (mm)	Measured DTI (mm)
Plastic Enclosure	528	Reinforced	0.4	Min. 2.0
Insulation Tape of T1 (test with 1 layer)	528	Reinforced	2 layers	2 layers
Insulation Tape around the PCB edge (test with 1 layer)	528	Reinforced	2 layers	2 layers
Bobbin of T1	528	Reinforced	0.4	Min. 0.45
Supplementary information:				
Test voltage 4000Vp. No flash over or insulation breakdown after test. All sources considered.				

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

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz					P
Insulation material	E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)
Plastic Enclosure: 945(GG) ***1)***	33	64.7	0.35	2.0	Reinforced	528
Insulating tape wrapping around the PCB edge: All sources ***2)***	303	64.7	0.46	0.05 x 2	Reinforced	528
Insulation Tape of Transformer (T1): All sources ***2)***	303	64.7	0.46	0.05 x 2	Reinforced	528
Bobbin of Transformer (T1): T375J ***3)***	17	64.7	0.71	0.45	Reinforced	528
Bobbin of Transformer (T1): T375HF ***4)***	10	64.7	0.71	0.45	Reinforced	528
Bobbin of Transformer (T1): 4130 ***5)***	27	64.7	0.28	0.45	Reinforced	528
Bobbin of Transformer (T1): PM-9820 ***6)***	14	64.7	0.71	0.45	Reinforced	528
Bobbin of Transformer (T1): CP-J-8800 ***7)***	25	64.7	0.71	0.45	Reinforced	528

Supplementary information:

1) Calculated actual electric strength (Vw) for reinforced insulation = E_P x K_R x d = 33 x 0.35 x 2.0 = 23.1 kV, 2.4 times of peak working voltage Vpw for reinforced insulation = 2.4 x 528 / 1.41 = 0.899 kV, 23.1 kV > 0.899 kV.

2) Calculated actual electric strength (Vw) for reinforced insulation = E_P x K_R x d = 303 x 0.46 x 0.1 = 13.938 kV, 2.4 times of peak working voltage Vpw for reinforced insulation = 2.4 x 528 / 1.41 = 0.899 kV, 13.938 kV > 0.899 kV.

3) Calculated actual electric strength (Vw) for reinforced insulation = E_P x K_R x d = 17 x 0.71 x 0.45 = 5.431 kV, 2.4 times of peak working voltage Vpw for reinforced insulation = 2.4 x 528 / 1.41 = 0.899 kV, 5.431 kV > 0.899 kV.

4) Calculated actual electric strength (Vw) for reinforced insulation = E_P x K_R x d = 10 x 0.71 x 0.45 = 3.195 kV, 2.4 times of peak working voltage Vpw for reinforced insulation = 2.4 x 528 / 1.41 = 0.899 kV, 3.195 kV > 0.899 kV.

5) Calculated actual electric strength (Vw) for reinforced insulation = E_P x K_R x d = 27 x 0.28 x 0.45 = 3.402 kV, 2.4 times of peak working voltage Vpw for reinforced insulation = 2.4 x 528 / 1.41 = 0.899 kV, 3.402 kV > 0.899 kV.

6) Calculated actual electric strength (Vw) for reinforced insulation = E_P x K_R x d = 14 x 0.71 x 0.45 = 4.473 kV, 2.4 times of peak working voltage Vpw for reinforced insulation = 2.4 x 528 / 1.41 = 0.899 kV, 4.473 kV > 0.899 kV.

7) Calculated actual electric strength (Vw) for reinforced insulation = E_P x K_R x d = 25 x 0.71 x 0.45 = 7.987 kV, 2.4 times of peak working voltage Vpw for reinforced insulation = 2.4 x 528 / 1.41 = 0.899 kV, 7.987 kV > 0.899 kV.

IEC 62368-1			
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
Basic:				
Live – Neutral (disconnected fuse)		DC	2500V	No
Reinforced:				
Primary – Secondary		DC	4000V	No
Primary – Enclosure (wrap with foil)		DC	4000V	No
T1 Primary – Secondary		DC	4000V	No
T1 Secondary – Core ***1)***		DC	4000V	No
Insulation Tape of T1 (test with 1 layer)		DC	4000V	No
Insulation Tape around the PCB edge (test with 1 layer)		DC	4000V	No
Supplementary information:				
)** Method of transient voltage considered. No flash over or insulation breakdown after test. Transformer was tested separately from primary to secondary. The transformer manufactured by each factory passed the test. ***1) T1 core consider as primary. Tested on structure A and structure B. All sources of material were tested.				

5.5.2.2	TABLE: Stored discharge on capacitors					P
Location	Supply voltage (V)	Operating and fault condition [1)]	Switch position	Measured voltage (Vpk)	ES Class	
Line / Neutral	264	Normal	N/A	4	ES1	
Supplementary information:						
X-capacitors installed for testing: CX1=0.47μF ☒ bleeding resistor rating: R1=R2=360KΩ, Two in series ☐ ICX: 1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit						

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

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

5.7.4	**TABLE: Unearthed accessible parts**					P
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V_{rms} or V_{pk})	Current (A_{rms} or A_{pk})	Freq. (Hz)	
DC output port	Normal	264	--	0.069 mApk	60	ES1
DC output port	Fault (Refer to fault condition on table B.3 and B.4, output shutdown)	264	--	0.069 mApk	60	ES1
DC output port	Fault (Refer to fault condition on table B.3 and B.4, fuse open)	264	--	0.094 mApk	60	ES1
Accessible Enclosure (with metal foil)	Normal	264	--	0.030 mApk	60	ES1
Accessible Enclosure (with metal foil)	Fault (Refer to fault condition on table B.3 and B.4, output shutdown)	264	--	0.030 mApk	60	ES1
Accessible Enclosure (with metal foil)	Fault (Refer to fault condition on table B.3 and B.4, fuse open)	264	--	0.030 mApk	60	ES1
Supplementary information:						
Vin= 264Vac, 60Hz Test with IEC 60990 figure 4.						

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

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

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

6.2.2	TABLE: Power source circuit classifications					P
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power (W)	Time (S)	PS class
Model: GTM41061-1830, output 30Vdc/0.6A						
All circuits except for DC output	N/A	N/A	N/A	N/A	N/A	PS3
Output port	Normal	30.0	1.15	34.50	5	PS2
Output port	Single fault: U1 Pin 1 to 2 SC	0	0	0	5	PS2
Output port	Single fault: U1 Pin 3 to 4 SC	0	0	0	5	PS2
Output port	Single fault: U1 Pin 1 OC	0	0	0	5	PS2
Output port	Single fault: U1 Pin 3 OC	0	0	0	5	PS2
Output port	Single fault: R22 SC	0	0	0	5	PS2
Model: GTM41061-1812-7.0, output 5Vdc/3.6A						
All circuits except for DC output	N/A	N/A	N/A	N/A	N/A	PS3
Output port	Normal	5.13	4.33	19.1	5	PS2

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

Output port	Single fault: U1 Pin 1 to 2 SC	0	0	0	5	PS2
Output port	Single fault: U1 Pin 3 to 4 SC	0	0	0	5	PS2
Output port	Single fault: U1 Pin 1 OC	0	0	0	5	PS2
Output port	Single fault: U1 Pin 3 OC	0	0	0	5	PS2
Output port	Single fault: R22 SC	0	0	0	5	PS2
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.						

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
Varistor (MOV1, MOV2)	N/A	N/A	N/A	Yes *)
Supplementary information:				
*) An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (Vp) and normal operating condition rms current (Irms) is greater than 15W.). The arcing PIS is covered by the fire enclosure				

6.2.3.2	TABLE: Determination of resistive PIS		P
Location	Operating and fault condition	Dissipate power (W)	Resistive PIS? Yes / No
All Circuits	N/A	N/A	Yes *)
Supplementary information:			
Abbreviation: SC= short circuit; OC= open circuit *) Output measurement > 15W in normal and single fault condition is assumed as PS2 and all other circuit is assumed as PS3, therefore all circuits are resistive PIS and covered by fire enclosure.			

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

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

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

5.4.1.4, 9.3, B.1.5, B.2.6	**TABLE: Temperature measurements**				P
Supply voltage (V)..... :	90V 60Hz ***1)***	90V 60Hz ***1) #)***	90V 60Hz ***2)***	90V 60Hz ***2) #)***	—
Ambient temperature during test T_{amb} (°C) .... :	--	--	--	--	—
Maximum measured temperature *T* of part/at:	*T* (°C)				Allowed T_{max} (°C)
Model: GTM41061-1812-7.0, output 5Vdc/3.6A					
1. Plug holder outside	33.4	38.1	34.5	40.5	70
2. Plug holder inside	45.4	50.1	47.5	53.5	--
3. Plastic near Live	65.4	70.1	69.3	75.3	120
4. MOV1 body	56.1	60.8	60.1	66.1	105
5. MOV2 body	73.5	78.2	79.0	85.0	105
6. CX1 body	62.0	66.7	66.3	72.3	100
7. LF1 coil	72.4	77.1	78.0	84.0	120 *)
8. PCB near BD1	76.0	80.7	81.0	87.0	130
9. C1 body	72.8	77.5	77.3	83.3	105
10. U1 body	79.4	84.1	82.2	88.2	110
11. PWB near Q1	65.0	69.7	69.6	75.6	130
12. PWB near D7	95.3	100.0	96.0	102.0	130
13. LF3 coil	87.8	92.5	87.7	93.7	120 *)
14. MOV4 body	73.1	77.8	74.2	80.2	85
15. C12 body	80.5	85.2	80.1	86.1	105
16. Output wire inside	68.1	72.8	69.1	75.1	80
17. T1 coil	84.4	89.1	86.0	92.0	110 *)
18. T1 core	85.5	90.2	85.4	91.4	110 *)

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

19. Enclosure inside near T1 (Top side)	62.2	66.9	60.2	66.2	--
20. Enclosure inside near T1 (Bottom side)	59.9	64.6	60.8	66.8	--
21. Enclosure inside near primary heatsink	56.9	61.6	59.2	65.2	--
22. Output wire	40.3	45.0	41.4	47.4	80
23. Ambient	25.3	30.0	24.0	30.0	--
Accessible parts Touch temperatures					
1. Enclosure outside near T1 (Top side)	54.6	--	49.0	50.0	77 **)
2. Enclosure outside near T1 (Bottom side)	50.4	--	51.4	52.4	77 **)
3. Enclosure outside near primary heatsink	48.8	--	50.2	51.2	77 **)
4. output wire	40.3	--	41.4	42.4	77 **)
5. LED part	49.7	--	56.9	57.9	77 **)
6. Ambient	25.3	--	24.0	25.0	--

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

Supplementary information:

Tmra=30°C. If no limit is stated, temperature is for reference only.
*) Temperature limits of winding include less 10°C for thermocouple measurement method.
**) Considering exernal enclosure touched occasionally for periods (>1 s and <10 s)
1) Vertical. ***2)*** Horizontal. ***#)*** interpolated to 30°C.
Tested on structure A.

5.4.1.4, 9.3, B.1.5, B.2.6	**TABLE: Temperature measurements**				P
Supply voltage (V)..... :	264V 50Hz ***1)***	264V 50Hz ***1) #)***	264V 50Hz ***2)***	264V 50Hz ***2) #)***	—
Ambient temperature during test T_{amb} (°C) .... :	--	--	--	--	—
Maximum measured temperature *T* of part/at:	*T* (°C)				Allowed T_{max} (°C)
Model: GTM41061-1812-7.0, output 5Vdc/3.6A					
1. Plug holder outside	32.6	37.6	31.1	36.1	70
2. Plug holder inside	43.2	48.2	49.4	54.4	--
3. Plastic near Live	61.7	66.7	63.3	68.3	120
4. MOV1 body	53.1	58.1	55.9	60.9	105
5. MOV2 body	65.6	70.6	71.1	76.1	105
6. CX1 body	57.7	62.7	60.8	65.8	100
7. LF1 coil	60.6	65.6	64.8	69.8	120 *)
8. PCB near BD1	69.2	74.2	74.0	79.0	130
9. C1 body	68.4	73.4	72.3	77.3	105

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

10. U1 body	79.2	84.2	81.6	86.6	110
11. PWB near Q1	60.9	65.9	64.8	69.8	130
12. PWB near D7	94.6	99.6	94.5	99.5	130
13. LF3 coil	86.2	91.2	85.9	90.9	120 *)
14. MOV4 body	71.7	76.7	72.0	77.0	85
15. C12 body	79.9	84.9	78.6	83.6	105
16. Output wire inside	66.6	71.6	66.5	71.5	80
17. T1 coil	84.9	89.9	86.0	91.0	110 *)
18. T1 core	86.1	91.1	85.5	90.5	110 *)
19. Enclosure inside near T1 (Top side)	62.6	67.6	59.9	64.9	--
20. Enclosure inside near T1 (Bottom side)	59.2	64.2	59.1	64.1	--
21. Enclosure inside near primary heatsink	54.0	59.0	56.5	61.5	--
22. Output wire	39.0	44.0	38.9	43.9	80
23. Ambient	25.0	30.0	25.0	30.0	--
Accessible parts Touch temperatures					
1. Enclosure outside near T1 (Top side)	54.3	--	55.4	--	77 **)
2. Enclosure outside near T1 (Bottom side)	50.1	--	56.1	--	77 **)
3. Enclosure outside near primary heatsink	45.6	--	50.0	--	77 **)
4. output wire	39.0	--	38.9	--	77 **)
5. LED part	46.1	--	51.6	--	77 **)
6. Ambient	25.0	--	25.0	--	--

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

Supplementary information:

Tmra=30°C. If no limit is stated, temperature is for reference only.
*) Temperature limits of winding include less 10°C for thermocouple measurement method.
**) Considering exernal enclosure touched occasionally for periods (>1 s and <10 s)
1) Vertical. ***2)*** Horizontal. ***#)*** interpolated to 30°C
Tested on structure A.

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

5.4.1.4, 9.3, B.1.5, B.2.6	**TABLE: Temperature measurements**				P
Supply voltage (V)..... :	90V 60Hz ***1)***	90V 60Hz ***1) #)***	90V 60Hz ***2)***	90V 60Hz ***2) #)***	—
Ambient temperature during test T_{amb} (°C) .... :	--	--	--	--	—
Maximum measured temperature *T* of part/at:	*T* (°C)				Allowed T_{max} (°C)
Model: GTM41061-1812-7.0, output 5Vdc/3.6A					
1. Plug holder outside	31.5	36.5	35.2	40.1	70
2. Plug holder inside	45.1	50.1	49.9	54.8	--
3. Plastic near Live	62.2	67.2	66.6	71.5	120
4. MOV1 body	56.3	61.3	61.1	66.0	105
5. MOV2 body	75.0	80.0	80.4	85.3	105
6. CX1 body	61.2	66.2	65.8	70.7	100
7. LF1 coil	71.7	76.7	77.1	82.0	120 *)
8. PCB near BD1	78.2	83.2	82.2	87.1	130
9. C1 body	74.6	79.6	78.2	83.1	105
10. U1 body	79.7	84.7	81.4	86.3	110
11. PWB near Q1	63.8	68.8	68.2	73.1	130
12. PWB near D7	95.9	100.9	95.6	100.5	130
13. LF3 coil	79.5	84.5	79.4	84.3	120 *)
14. MOV4 body	68.0	73.0	71.8	76.7	85
15. C12 body	77.2	82.2	74.5	79.4	105
16. Output wire inside	69.9	74.9	71.3	76.2	80
17. T1 coil	92.7	97.7	91.4	96.3	110 *)
18. T1 core	84.6	89.6	84.1	89.0	110 *)
19. Enclosure inside near T1 (Top side)	64.4	69.4	59.5	64.4	--
20. Enclosure inside near T1 (Bottom side)	56.8	61.8	56.5	61.4	--
21. Enclosure inside near primary heatsink	53.7	58.7	57.1	62.0	--
22. Output wire	42.7	47.7	43.8	48.7	80
23. Ambient	25.0	30.0	25.1	30.0	--
Accessible parts Touch temperatures					
1. Enclosure outside near T1 (Top side)	54.8	--	49.0	--	77 **)
2. Enclosure outside near T1 (Bottom side)	52.1	--	52.0	--	77 **)
3. Enclosure outside near primary heatsink	47.4	--	47.9	--	77 **)
4. output wire	42.7	--	43.8	--	77 **)
5. LED part	50.9	--	45.3	--	77 **)

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

6. Ambient			25.0	--	25.1	--	--
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:							
Tmra=30°C. If no limit is stated, temperature is for reference only. *) Temperature limits of winding include less 10°C for thermocouple measurement method. **) Considering exernal enclosure touched occasionally for periods (>1 s and <10 s) ***1)*** Vertical. ***2)*** Horizontal. ***#)*** interpolated to 30°C. Tested on structure B.							

5.4.1.4, 9.3, B.1.5, B.2.6	**TABLE: Temperature measurements**				P
Supply voltage (V)..... :	264V 50Hz ***1)***	264V 50Hz ***1) #)***	264V 50Hz ***2)***	264V 50Hz ***2) #)***	—
Ambient temperature during test T_{amb} (°C) .... :	--	--	--	--	—
Maximum measured temperature *T* of part/at:	*T* (°C)				Allowed T_{max} (°C)
Model: GTM41061-1812-7.0, output 5Vdc/3.6A					
1. Plug holder outside	32.3	37.0	35.0	39.8	70
2. Plug holder inside	45.9	50.6	48.6	53.4	--
3. Plastic near Live	63.2	67.9	64.5	69.3	120
4. MOV1 body	57.1	61.8	57.7	62.5	105
5. MOV2 body	75.8	80.5	73.4	78.2	105
6. CX1 body	61.9	66.6	60.1	64.9	100
7. LF1 coil	72.4	77.1	65.4	70.2	120 *)
8. PCB near BD1	79.1	83.8	77.3	82.1	130
9. C1 body	75.6	80.3	75.3	80.1	105
10. U1 body	80.3	85.0	83.5	88.3	110
11. PWB near Q1	64.7	69.4	66.7	71.5	130
12. PWB near D7	96.8	101.5	96.5	101.3	130
13. LF3 coil	80.7	85.4	79.9	84.7	120 *)
14. MOV4 body	69.1	73.8	69.6	74.4	85
15. C12 body	77.2	81.9	75.2	80.0	105
16. Output wire inside	71.0	75.7	71.4	76.2	80
17. T1 coil	93.5	98.2	94.3	99.1	110 *)
18. T1 core	85.4	90.1	87.1	91.9	110 *)
19. Enclosure inside near T1 (Top side)	65.5	70.2	60.9	65.7	--
20. Enclosure inside near T1 (Bottom side)	56.7	61.4	57.6	62.4	--

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

21. Enclosure inside near primary heatsink		54.9	59.6	56.5	61.3	--
22. Output wire		42.6	47.3	44.7	49.5	80
23. Ambient		25.3	30.0	25.2	30.0	--
Accessible parts Touch temperatures						
1. Enclosure outside near T1 (Top side)		55.7	--	50.5	--	77 **)
2. Enclosure outside near T1 (Bottom side)		51.8	--	53.0	--	77 **)
3. Enclosure outside near primary heatsink		47.0	--	47.7	--	77 **)
4. output wire		42.6	--	44.7	--	77 **)
5. LED part		52.5	--	45.8	--	77 **)
6. Ambient		25.3	--	25.2	--	--
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:						
Tmra=30°C. If no limit is stated, temperature is for reference only. *) Temperature limits of winding include less 10°C for thermocouple measurement method. **) Considering exernal enclosure touched occasionally for periods (>1 s and <10 s) ***1)*** Vertical. ***2)*** Horizontal. ***#)*** interpolated to 30°C Tested on structure B.						

5.4.1.4, 9.3, B.1.5, B.2.6	**TABLE: Temperature measurements**				P
Supply voltage (V)..... :	90V 60Hz ***1)***	90V 60Hz ***1) #)***	90V 60Hz ***2)***	90V 60Hz ***2) #)***	—
Ambient temperature during test T_{amb} (°C) .... :	--	--	--	--	—
Maximum measured temperature *T* of part/at:	*T* (°C)				Allowed T_{max} (°C)
Model: GTM41061-1818-3.0, output 15Vdc/1.2A					
1. Plug holder outside	32.8	47.5	34.8	49.5	70
2. Plug holder inside	44.2	58.9	46.2	60.9	--
3. Plastic near Live	60.4	75.1	62.1	76.8	120
4. MOV1 body	52.7	67.4	54.3	69.0	105
5. MOV2 body	69.2	83.9	69.2	83.9	105
6. CX1 body	56.5	71.2	58.2	72.9	100
7. LF1 coil	71.2	85.9	72.0	86.7	120 *)
8. PCB near BD1	69.9	84.6	69.7	84.4	130
9. C1 body	65.5	80.2	65.8	80.5	105
10. U1 body	64.9	79.6	64.2	78.9	110
11. PWB near Q1	63.0	77.7	65.3	80.0	130

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

12. PWB near D7	62.7	77.4	61.3	76.0	130
13. LF3 coil	54.4	69.1	53.6	68.3	120 *)
14. MOV4 body	49.0	63.7	48.8	63.5	85
15. C12 body	55.9	70.6	54.5	69.2	105
16. Output wire inside	46.3	61.0	45.9	60.6	80
17. T1 coil	70.7	85.4	68.9	83.6	110 *)
18. T1 core	71.4	86.1	70.2	84.9	110 *)
19. Enclosure inside near T1 (Top side)	49.5	64.2	46.1	60.8	--
20. Enclosure inside near T1 (Bottom side)	47.7	62.4	45.9	60.6	--
21. Enclosure inside near primary heatsink	49.1	63.8	48.9	63.6	--
22. Output wire	32.4	47.1	31.6	46.3	80
23. Ambient	25.3	40.0	25.3	40.0	--
Accessible parts Touch temperatures					
1. Enclosure outside near T1 (Top side)	42.1	--	38.3	--	77 **)
2. Enclosure outside near T1 (Bottom side)	40.4	--	38.9	--	77 **)
3. Enclosure outside near primary heatsink	43.5	--	42.6	--	77 **)
4. output wire	32.4	--	31.6	--	77 **)
5. LED part	36.4	--	33.4	--	77 **)
6. Ambient	25.3	--	25.3	--	--

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:

Tmra=40°C. If no limit is stated, temperature is for reference only.
*) Temperature limits of winding include less 10°C for thermocouple measurement method.
**) Considering exernal enclosure touched occasionally for periods (>1 s and <10 s)
1) Vertical. ***2)*** Horizontal. ***#)*** interpolated to 40°C.
Tested on structure A.

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

Supply voltage (V)..... :	264V 50Hz ***1)***	264V 50Hz ***1) #)***	264V 50Hz ***2)***	264V 50Hz ***2) #)***	—
Ambient temperature during test T_{amb} (°C) .... :	--	--	--	--	—
Maximum measured temperature *T* of part/at:	*T* (°C)				Allowed T_{max} (°C)
Model: GTM41061-1818-3.0, output 15Vdc/1.2A					
1. Plug holder outside	32.1	46.7	34.2	49.0	70
2. Plug holder inside	43.6	58.2	45.8	60.6	--

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

3. Plastic near Live	58.6	73.2	60.7	75.5	120
4. MOV1 body	50.6	65.2	52.3	67.1	105
5. MOV2 body	62.2	76.8	63.6	78.4	105
6. CX1 body	54.1	68.7	55.9	70.7	100
7. LF1 coil	57.3	71.9	58.9	73.7	120 *)
8. PCB near BD1	65.2	79.8	66.1	80.9	130
9. C1 body	64.6	79.2	65.6	80.4	105
10. U1 body	67.2	81.8	67.0	81.8	110
11. PWB near Q1	63.9	78.5	66.3	81.1	130
12. PWB near D7	65.5	80.1	64.6	79.4	130
13. LF3 coil	55.3	69.9	54.9	69.7	120 *)
14. MOV4 body	49.3	63.9	49.4	64.2	85
15. C12 body	58.2	72.8	56.9	71.7	105
16. Output wire inside	46.5	61.1	46.5	61.3	80
17. T1 coil	73.3	87.9	71.8	86.6	110 *)
18. T1 core	73.9	88.5	73.3	88.1	110 *)
19. Enclosure inside near T1 (Top side)	50.6	65.2	47.3	62.1	--
20. Enclosure inside near T1 (Bottom side)	48.9	63.5	47.7	62.5	--
21. Enclosure inside near primary heatsink	51.7	66.3	51.4	66.2	--
22. Output wire	32.1	46.7	31.5	46.3	80
23. Ambient	25.4	40.0	25.2	40.0	--
Accessible parts Touch temperatures					
1. Enclosure outside near T1 (Top side)	41.9	--	38.8	--	77 **)
2. Enclosure outside near T1 (Bottom side)	41.4	--	40.3	--	77 **)
3. Enclosure outside near primary heatsink	45.4	--	44.1	--	77 **)
4. Output wire	32.1	--	31.5	--	77 **)
5. LED part	36.0	--	33.6	--	77 **)
6. Ambient	25.4	--	25.2	--	--

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:

Tmra=40°C. If no limit is stated, temperature is for reference only.
*) Temperature limits of winding include less 10°C for thermocouple measurement method.
**) Considering exernal enclosure touched occasionally for periods (>1 s and <10 s)
1) Vertical. ***2)*** Horizontal.
#) interpolated to 40°C.

Tested on structure A.

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

5.4.1.4, 9.3, B.1.5, B.2.6	**TABLE: Temperature measurements**				P
Supply voltage (V)..... :	90V 60Hz ***1)***	90V 60Hz ***1) #)***	90V 60Hz ***2)***	90V 60Hz ***2) #)***	—
Ambient temperature during test T_{amb} (°C) .... :	--	--	--	--	—
Maximum measured temperature *T* of part/at:	*T* (°C)				Allowed T_{max} (°C)
Model: GTM41061-1830, output 30Vdc/0.6A					
1. Plug holder outside	31.8	47.2	33.7	49.2	70
2. Plug holder inside	41.0	56.4	42.9	58.4	--
3. Plastic near Live	54.6	70.0	56.6	72.1	120
4. MOV1 body	49.8	65.2	51.2	66.7	105
5. MOV2 body	60.4	75.8	61.7	77.2	105
6. CX1 body	51.7	67.1	53.0	68.5	100
7. LF1 coil	60.7	76.1	62.3	77.8	120 *)
8. PCB near BD1	63.3	78.7	64.4	79.9	130
9. C1 body	61.3	76.7	61.8	77.3	105
10. U1 body	57.0	72.4	57.6	73.1	110
11. PWB near Q1	56.6	72.0	58.4	73.9	130
12. PWB near D7	56.5	71.9	56.7	72.2	130
13. LF3 coil	46.8	62.2	45.9	61.4	120 *)
14. MOV4 body	40.2	55.6	40.2	55.7	85
15. C12 body	49.4	64.8	47.4	62.9	105
16. Output wire inside	36.6	52.0	36.4	51.9	80
17. T1 coil	65.0	80.4	64.3	79.8	110 *)
18. T1 core	63.7	79.1	63.6	79.1	110 *)
19. Enclosure inside near T1 (Top side)	45.6	61.0	43.3	58.8	--
20. Enclosure inside near T1 (Bottom side)	45.5	60.9	45.6	61.1	--
21. Enclosure inside near primary heatsink	44.4	59.8	44.4	59.9	--
22. Output wire	29.9	45.3	29.7	45.2	80
23. Ambient	24.6	40.0	24.5	40.0	--
Accessible parts Touch temperatures					
1. Enclosure outside near T1 (Top side)	39.1	39.5	36.7	37.2	77 **)
2. Enclosure outside near T1 (Bottom side)	38.3	38.7	38.4	38.9	77 **)
3. Enclosure outside near primary heatsink	40.1	40.5	39.8	40.3	77 **)
4. Output wire	29.9	30.3	29.7	30.2	77 **)
5. LED part	33.1	33.5	31.1	31.6	77 **)

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

6. Ambient			24.6	25.0	24.5	25.0	--
Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
Supplementary information:							
Tmra=40°C. If no limit is stated, temperature is for reference only. *) Temperature limits of winding include less 10°C for thermocouple measurement method. **) Considering exernal enclosure touched occasionally for periods (>1 s and <10 s) ***1)*** Vertical. ***2)*** Horizontal. ***#)*** interpolated to 40°C. Tested on structure A.							

5.4.1.4, 9.3, B.1.5, B.2.6	**TABLE: Temperature measurements**				P
Supply voltage (V)..... :	264V 50Hz ***1)***	264V 50Hz ***1) #)***	264V 50Hz ***2)***	264V 50Hz ***2) #)***	—
Ambient temperature during test T_{amb} (°C) .... :	--	--	--	--	—
Maximum measured temperature *T* of part/at:	*T* (°C)				Allowed T_{max} (°C)
Model: GTM41061-1830, output 30Vdc/0.6A					
1. Plug holder outside	31.8	47.3	34.8	50.2	70
2. Plug holder inside	42.8	58.3	45.6	61.0	--
3. Plastic near Live	58.1	73.6	61.0	76.4	120
4. MOV1 body	53.4	68.9	55.2	70.6	105
5. MOV2 body	61.5	77.0	63.9	79.3	105
6. CX1 body	54.9	70.4	56.5	71.9	100
7. LF1 coil	55.9	71.4	58.1	73.5	120 *)
8. PCB near BD1	65.8	81.3	68.0	83.4	130
9. C1 body	67.4	82.9	68.7	84.1	105
10. U1 body	65.8	81.3	68.0	83.4	110
11. PWB near Q1	63.2	78.7	66.1	81.5	130
12. PWB near D7	64.9	80.4	65.7	81.1	130
13. LF3 coil	52.0	67.5	51.2	66.6	120 *)
14. MOV4 body	43.7	59.2	43.7	59.1	85
15. C12 body	58.6	74.1	56.1	71.5	105
16. Output wire inside	39.4	54.9	39.2	54.6	80
17. T1 coil	75.4	90.9	75.1	90.5	110 *)
18. T1 core	73.0	88.5	73.5	88.9	110 *)
19. Enclosure inside near T1 (Top side)	51.8	67.3	48.6	64.0	--
20. Enclosure inside near T1 (Bottom side)	53.2	68.7	54.4	69.8	--

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

21. Enclosure inside near primary heatsink	49.9	65.4	49.9	65.3	--
22. Output wire	30.8	46.3	30.9	46.3	80
23. Ambient	24.5	40.0	24.6	40.0	--
Accessible parts Touch temperatures					
1. Enclosure outside near T1 (Top side)	44.5	45.0	40.0	40.4	77 **)
2. Enclosure outside near T1 (Bottom side)	43.5	44.0	44.1	44.5	77 **)
3. Enclosure outside near primary heatsink	44.1	44.6	43.5	43.9	77 **)
4. Output wire	30.8	31.3	30.9	31.3	77 **)
5. LED part	34.7	35.2	32.6	33.0	77 **)
6. Ambient	24.5	25.0	24.6	25.0	--

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

Supplementary information:

Tmra=40°C. If no limit is stated, temperature is for reference only.
*) Temperature limits of winding include less 10°C for thermocouple measurement method.
**) Considering exernal enclosure touched occasionally for periods (>1 s and <10 s)
1) Vertical. ***2)*** Horizontal. ***#)*** interpolated to 40°C.

Tested on structure A.

B.2.5	**TABLE: Input test**							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
Model: GTM41061-1812-7.0, output: 5Vdc/3.6A								
90	50	0.432	--	23.6	--	F1, F2	0.432	Maximum Load
90	60	0.440	--	23.6	--	F1, F2	0.440	Maximum Load
100	50	0.396	0.6	23.4	--	F1, F2	0.396	Maximum Load
100	60	0.405	0.6	23.4	--	F1, F2	0.405	Maximum Load
240	50	0.209	0.6	23.2	--	F1, F2	0.209	Maximum Load
240	60	0.218	0.6	23.2	--	F1, F2	0.218	Maximum Load
264	50	0.195	--	23.4	--	F1, F2	0.195	Maximum Load
264	60	0.207	--	23.4	--	F1, F2	0.207	Maximum Load
Model: GTM41061-1818-3.0, output: 15Vdc/1.2A								
90	50	0.408	--	22.0	--	F1, F2	0.408	Maximum Load
90	60	0.420	--	22.0	--	F1, F2	0.420	Maximum Load
100	50	0.377	0.6	21.9	--	F1, F2	0.377	Maximum Load
100	60	0.386	0.6	21.9	--	F1, F2	0.386	Maximum Load
240	50	0.209	0.6	22.3	--	F1, F2	0.209	Maximum Load

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

240	60	0.211	0.6	22.2	--	F1, F2	0.211	Maximum Load
264	50	0.196	--	22.3	--	F1, F2	0.196	Maximum Load
264	60	0.199	--	22.2	--	F1, F2	0.199	Maximum Load
Model: GTM41061-1824, output: 24Vdc/0.75A								
90	50	0.403	--	21.1	--	F1, F2	0.403	Maximum Load
90	60	0.407	--	21.2	--	F1, F2	0.407	Maximum Load
100	50	0.370	0.6	20.8	--	F1, F2	0.370	Maximum Load
100	60	0.373	0.6	20.9	--	F1, F2	0.373	Maximum Load
240	50	0.208	0.6	21.4	--	F1, F2	0.208	Maximum Load
240	60	0.205	0.6	21.4	--	F1, F2	0.205	Maximum Load
264	50	0.195	--	21.9	--	F1, F2	0.195	Maximum Load
264	60	0.194	--	22.0	--	F1, F2	0.194	Maximum Load
Model: GTM41061-1830, output:30Vdc/0.6A								
90	50	0.398	--	21.1	--	F1, F2	0.398	Maximum Load
90	60	0.412	--	21.1	--	F1, F2	0.412	Maximum Load
100	50	0.370	0.6	21.0	--	F1, F2	0.370	Maximum Load
100	60	0.383	0.6	21.0	--	F1, F2	0.383	Maximum Load
240	50	0.209	0.6	22.1	--	F1, F2	0.209	Maximum Load
240	60	0.216	0.6	22.0	--	F1, F2	0.216	Maximum Load
264	50	0.198	--	22.4	--	F1, F2	0.198	Maximum Load
264	60	0.203	--	22.2	--	F1, F2	0.203	Maximum Load
Supplementary information:								
Equipment may be have rated current or rated power or both. Both should be measured.								

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

B.3, B.4	TABLE: Abnormal operating and fault condition tests	P
Ambient temperature T_{amb} (°C) ..... :	25°C, if not specify the ambient temperature.	—
Power source for EUT: Manufacturer, model/type, outputrating .. :	--	—

Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
Model: GTM41061-1830, output:30Vdc/0.6A						
BD1 AC to “+”	S-C	264	1S	F1, F2	*)	Fuse opened, No hazards.
C1	S-C	264	1S	F1, F2	*)	Fuse opened, No hazards.
Q1 Pin G to S	S-C	264	10 mins	F1, F2	0.02	Unit shut down immediately, Recoverable when fault removed. No damage, No hazards.
Q1 Pin G to D	S-C	264	1S	F1, F2	*)	Fuse opened, No hazards.
Q1 Pin D to S	S-C	264	1S	F1, F2	*)	Fuse opened, No hazards.
R22	S-C	264	1S	F1, F2	*)	Fuse opened, No hazards.
U3 Pin 5 to 2	S-C	264	10 mins	F1, F2	0.02	Unit shut down immediately, Recoverable when fault removed. No damage, No hazards.
U1 Pin 1 to 2	S-C	264	10 mins	F1, F2	0.02	Unit shut down immediately, Recoverable when fault removed. No damage, No hazards.
U1 Pin 3 to 4	S-C	264	10 mins	F1, F2	0.02	Unit shut down immediately, Recoverable when fault removed. No damage, No hazards.
U1 Pin 1	O-C	264	10 mins	F1, F2	0.02	Unit shut down immediately, Recoverable when fault removed. No damage, No hazards.
U1 Pin 3	O-C	264	10 mins	F1, F2	0.02	Unit shut down immediately, Recoverable when fault removed. No damage, No hazards.
T1 Pin 1 to 4	S-C	264	10 mins	F1, F2	0.02	Unit shut down immediately, Recoverable when fault removed. No damage, No hazards.
T1 Pin 2 to 5	S-C	264	10 mins	F1, F2	0.02	Unit shut down immediately, Recoverable when fault removed. No damage, No hazards.

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

Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
T1 Pin A to B	S-C	264	10 mins	F1, F2	0.02	Unit shut down immediately, Recoverable when fault removed. No damage, No hazards.
D7	S-C	264	10 mins	F1, F2	0.02	Unit shut down immediately, Recoverable when fault removed. No damage, No hazards.
Output	S-C	264	10 mins	F1, F2	0.02	Unit shut down immediately, Recoverable when fault removed. No damage, No hazards.
T1 after D7 to GND	O-L	264	4hrs	F1, F2	0.20A→ 0.26A→ 0.32A→ 0.02A	Temperature was stable when overload to 0.55A, when increase to 0.6A, Unit shutdown. Recoverable when fault removed. No hazards, No damaged. Max temperature as below: T1 coil: 104.1°C; T1 core: 100.3 °C; Enclosure outside near T1 (Top side): 56.2°C; Enclosure outside near T1 (Bottom side): 53.0°C; Enclosure outside near primary heatsink: 54.8°C; output wire: 33.4°C; LED part: 41.8°C; Ambient: 24.5°C;
Output (30Vdc)	O-L	264	6hrs	F1, F2	0.20A→ 0.31A→ 0.32A→ 0.03A	Temperature was stable when overload to 1.15A, when increase to 1.20A, Unit shutdown. Recoverable when fault removed. No hazards, No damaged. Max temperature as below: T1 coil: 104.7 °C; T1 core: 100.9 °C; Enclosure outside near T1 (Top side): 55.7 °C; Enclosure outside near T1 (Bottom side): 53.6 °C; Enclosure outside near primary heatsink: 54.3°C; output wire: 34.5 °C; LED part: 41.0°C; Ambient: 24.7°C
Model: GTM41061-1812-7.0, output:5Vdc/3.6A						

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

Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
Output (5Vdc)	O-L	264	7.7 hrs	F1, F2	0.20A→ 0.23A→ 0.24A→ 0.03A	Temperature was stable when overload to 4.25A, when increase to 4.30A, Unit shutdown. Recoverable when fault removed. No hazards, No damaged. Max temperature as below: T1 coil: 99.5 °C; T1 core: 101.5 °C; Enclosure outside near T1 (Top side): 59.9 °C; Enclosure outside near T1 (Bottom side): 56.2 °C; Enclosure outside near primary heatsink: 53.0 °C; output wire: 44.4 °C; LED part: 26.2°C; Ambient: 23.9 °C.
Supplementary information:						
S-C=short circuit, O-L=overload, NCD=No component damage, CD= component damage. Electric strength tests conducted after every single fault condition, no flash over or insulation breakdown. *) Fuse current is more than fuse rating times 2.1, repeated the test with each source of fuse and same result come out. After all the tests, the output voltage is also within ES1 limit.						

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

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

M.4.2	**TABLE: Charging safeguards for equipment containing a secondary lithium battery**					N/A
Maximum specified charging voltage (V) ..... :						—
Maximum specified charging current (A) ..... :						—
Highest specified charging temperature (°C) ..... :						
Lowest specified charging temperature (°C) ..... :						
Battery manufacturer/type	Operating and fault condition	Measurement			Observation	
		Charging voltage (V)	Charging current (A)	Temp. (°C)		
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature						

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

Q.1	**TABLE: Circuits intended for interconnection with building wiring (LPS)**						P
Output Circuit	Condition	U_{oc} (V)	Time (s)	I_{sc} (A)		S (VA)	
				Meas.	Limit	Meas.	Limit
Model: GTM41061-1830, output 30Vdc/0.6A							
Output port	Normal	30.0	5	1.15	8	34.5	100
Output port	Single fault: U1 Pin 1 to 2 SC	0	5	0	8	0	100
Output port	Single fault: U1 Pin 3 to 4 SC	0	5	0	8	0	100
Output port	Single fault: U1 Pin 1 OC	0	5	0	8	0	100
Output port	Single fault: U1 Pin 3 OC	0	5	0	8	0	100
Output port	Single fault: R22 SC	0	5	0	8	0	100
Model: GTM41061-1812-7.0, output 5Vdc/3.6A							
Output port	Normal	5.13	5	4.33	19.1	0	100
Output port	Single fault: U1 Pin 1 to 2 SC	0	5	0	8	0	100
Output port	Single fault: U1 Pin 3 to 4 SC	0	5	0	8	0	100
Output port	Single fault: U1 Pin 1 OC	0	5	0	8	0	100
Output port	Single fault: U1 Pin 3 OC	0	5	0	8	0	100
Output port	Single fault: R22 SC	0	5	0	8	0	100
Supplementary Information:							
S-C=Short circuit, O-C=Open circuit. Vin= 264Vac, 60Hz							

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

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Part/Location	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation
Enclosure	Thermoplastic	Min. 2.0mm	Circular Plane surface 30mm in diameter	100N	5sec	Safeguards remained effective
Primary Heatsink, Secondary Heatsink, Secondary wire, CY1, CY2.	--	--	Push-Pull tester	10N	5sec	Safeguards remained effective
Supplementary information:						

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

T.7	TABLE: Drop test				P
Location/part	Material	Thickness (mm)	Height (mm)	Observation	
Enclosure	See table 4.1.2	Min. 2.0mm	1000	Safeguards remained effective	
Supplementary information:					
All sources of material were tested.					

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

T.8	TABLE: Stress relief test				P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Enclosure	See table 4.1.2	Min. 2.0mm	87	7	No risk of shrinkage or distortion on material
Supplementary information:					
All sources of material were tested.					

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

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

4.1.2	**TABLE: Critical components information**	P

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity [1)]
PCB	WALEX ELECTRONIC (WUXI) CO LTD	T2, T4, T2A, T2B	Min. 1.6mm thickness, Min. V-0 Min. 130ºC	UL 796	UL E154355
Alt.)	SUZHOU CITY YILIHUA ELECTRONICS CO LTD	YLH-1	Min. 1.6mm thickness, Min. V-0 Min. 130ºC	UL 796	UL E251781
Alt.)	Dafeng Arex Electronics Technology Co Ltd	02V0, 03V0, 04V0	Min. 1.6mm thickness, Min. V-0 Min. 130ºC	UL 796	UL E186016
Alt.)	SHENZHEN TONGCHUANG XIN ELECTRONICS CO LTD	TCX	Min. 1.6mm thickness, Min. V-0 Min. 130ºC	UL 796	UL E250336
Alt.)	Interchangeable	Interchangeable	Min. V-0, Min. 130°C	UL 796	UL
Insulating tape wrapping around the PCB edge (Optional)	3M COMPANY	1350F-1 1350T-1 44	Min.130°C	UL 510	UL E17385
Alt.)	BONDTEC PACIFIC CO LTD	370S	Min.130°C	UL 510	UL E175868
Alt.)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ CT WF	Min.130°C	UL 510	UL E165111
Alt.)	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	Min.130°C	UL 510	UL E246950
Alt.)	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	Min.130°C	UL 510	UL E246820
Fuse (F1, F2) (F2 is optional)	Conquer Electronics Co., Ltd.	MST	T2A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017118 UL E82636

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

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity [1)]
Alt.	Suzhou Walter Electronic Co. Ltd.	2010	T2A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40018781 UL E56092
Alt.	Bel Fuse Ltd.	RST	T2A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40011144 UL E20624
Alt.	Shenzhen Lanson Electronics Co. Ltd.	SMT	T2A, 250V	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40012592 UL E221465
X-capacitor (CX1) (Optional)	Cheng Tung Industrial Co., Ltd.	CTX	Max. 0.47µF, Min. 250V, Min. 105°C Min. X2 type	IEC/EN 60384-14, UL 60384-14	ENEC 15 (ENEC-02671-M1) UL E193049
Alt.	Tenta Electric Industrial Co Ltd	MEX	Max. 0.47µF, Min. 250V, Min. 100°C Min. X2 type	IEC/EN 60384-14, UL 60384-14	VDE 119119 UL E222911
Alt.	Ultra Tech Xiphi Enterprise Co Ltd	HQX	Max. 0.47µF, Min. 250V, Min. 110°C Min. X2 type	IEC/EN 60384-14, UL 60384-14	VDE 40015608 UL E183780
Alt.	Dain Electronics Co., Ltd.	MEX, MPX, NPX	Max. 0.47µF, Min. 250V, Min. 100°C Min. X2 type	IEC/EN 60384-14, UL 60384-14	VDE 40018798 UL E147776
Alt.	Sinhua Electronics (Huzhou) Co., Ltd.	MPX	Max. 0.47µF, Min. 250V, Min. 110°C Min. X2 type	IEC/EN 60384-14, UL 60384-14	VDE 40014686 UL E237560
Alt.)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	MPX	Max 0.47µF, Min. 275V, Min. 110°C Min. X2 type	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40034679 UL E208107
Bleeder Resistor (R1, R2)	Yageo Corporation	RV series	R1=R2=360KΩ, Min. 1/4W (R1 and R2 are in series)	IEC/EN 62368-1	UL CB (Cert. No.: DK-108482-UL)
Alt.	Ralec Electronic Corp	RTV series	R1=R2=360KΩ, Min. 1/4W (R1 and R2 are in series)	IEC/EN 62368-1	UL CB (Cert. No.: DK-66106-M1-UL)

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

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity [1)]
Alt.	Guangdong Fenghua Advanced Technology Holding Co.,Ltd.	RVS series	R1=R2=360KΩ, Min. 1/4W (R1 and R2 are in series)	IEC/EN 62368-1	Nemko CB (NO109708)
Alt.	Viking Tech Corporation Kaoshiung Branch	HVRC series	R1=R2=360KΩ, Min. 1/4W (R1 and R2 are in series)	IEC/EN 62368-1	UL CB (Cert. No.: DK-121748-UL)
Alt.	Viking Tech Corporation Kaoshiung Branch	HVR05, HVR0A, HVR12	R1=R2=360KΩ, Min. 1/4W (R1 and R2 are in series)	IEC/EN 62368-1	UL CB (Cert. No.: DK-143770-UL)
Alt.	TZAI YUAN ENTERPRISE CO LTD	HSMD, SMD	R1=R2=360KΩ, Min. 1/4W (R1 and R2 are in series)	IEC/EN 62368-1	UL CB (Cert. No.: DK-29431-M1-UL)
Alt.	WALSIN TECHNOLOGY CORP	WF12N, WF20N, WF25N, WF08N, WF06N	R1=R2=360KΩ, Min. 1/4W (R1 and R2 are in series)	IEC/EN 62368-1	UL CB (Cert. No.: DK-119162-UL)
Alt.	Yageo Corporation	AH series	R1=R2=360KΩ, Min. 1/4W (R1 and R2 are in series)	IEC/EN 62368-1	UL CB (Cert. No.: DK-110207-UL)
Alt.	PDC	FVS03, FVS05, FVS06, FVS20, TF25V, TF06V, TF08V, TF12V, TF20V, FVS25	R1=R2=360KΩ, Min. 1/4W (R1 and R2 are in series)	IEC/EN 62368-1	UL CB (Cert No.: DK-101615-UL)
Bridging-Capacitor (CY1, CY2) (Optional)	TDK Corporation	CD	Max.1000pF, Min. 250V, Min. 125°C, Y1 type	IEC/EN 60384-14, UL 60384-14	VDE 40029780 UL E37861
Alt.)	Success Electronics Co., Ltd.	SE	Max.1000pF, Min. 250V, Min. 125°C, Y1 type	IEC/EN 60384-14, UL 60384-14	VDE 40037211 UL E114280
Alt.)	Success Electronics Co., Ltd.	SB	Max.1000pF, Min. 250V, Min. 125°C, Y1 type	IEC/EN 60384-14, UL 60384-14	VDE 40037221 UL E114280
Alt.)	Walsin Technology Corp.	AH	Max.1000pF, Min. 250V, Min. 125°C, Y1 type	IEC/EN 60384-14, UL 60384-14	VDE 40001804 UL E146544

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

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity [1)]
Alt.)	Haohua Electronic Co.	CT 7	Max.1000pF Min.250V Min.125°C Y1 type	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40003902 UL E233106
Alt.)	Murata Mfg. Co., Ltd.	KX	Max.1000pF, Min. 250V, Min. 125°C, Y1 type	IEC/EN 60384-14, UL 60384-14	VDE 40002831 UL E37921
Alt.)	JYA-NAY CO LTD	JN	Max.1000pF, Min. 250V, Min. 125°C, Y1 type	UL 60384-14	UL E201384
Alt.)	Guangdong Huiwan Electronics Technology Co Ltd	AR	Max.1000pF Min.500V Min.125°C Y1 type	IEC/EN 60384-14, UL 60384-14	VDE 40043989 UL E480105
Alt.)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co Ltd	CD	Max.1000pF Min.250V Min.125°C Y1 type	IEC/EN 60384-14, UL 60384-14	VDE 40025754 UL E208107
Varistor (MOV1, MOV2) (optional) ***)***	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	10D621K 14D621K	Max. Continuous voltage: 385Vac(rms), Min. 125°C, The coating is Min. V-0	IEC/EN 61051-1 IEC/EN 61051-2 UL1449	VDE 40023049 UL E330837
Alt.)	Guangdong Huiwan Electronics Technology Co.Ltd.	V-621K-10DEH, V-621K-14DEH for VDE V-621K-10D H, V-621K-14D H for UL	Max. Continuous voltage: 395Vac(rms), Min. 125°C, The coating is Min. V-0	IEC/EN 61051-1 IEC/EN 61051-2 UL1449	VDE 40043880 UL E480104
Alt.)	Thinking Electronic Industrial Co., Ltd.	TVR10621 TVR14621	Max. Continuous voltage: 395Vac(rms), Min. 105°C, The coating is Min. V-0	IEC/EN 61051-1 IEC/EN 61051-2 UL1449	VDE 005944 UL E314979

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

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity [1)]
Alt.)	Xiamen Set Electronics Co.,Ltd	TFV8S471K	Max. Continuous voltage: 300Vac(rms), Min. 105°C, The coating is Min. V-0	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, IEC 62368-1:2018 Annex G.8.1 and G.8.2 UL 1449	TUV-RH J 50554061 UL E322662
Alt.)	Xiamen Set Electronics Co.,Ltd	TFV10S471K	Max. Continuous voltage: 300Vac(rms), Min. 105°C, The coating is Min. V-0	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, IEC 62368-1:2018 Annex G.8.1 and G.8.2 UL 1449	TUV-RH J 50554091 UL E322662
Optocoupler (U1)	Everlight Electronics Co., Ltd.	EL817	External Cr. & Cl. ≥7.6mm DTI ≥0.4mm Min. 110°C Thermal cycling test	IEC/EN 60747-5-5 IEC/EN 62368-1 UL1577	VDE 132249 UL E214129
Alt.)	LITE-ON TECHNOLOGY	LTV-817	External Cr. & Cl. ≥7.0mm DTI ≥0.4mm Min. 115°C Thermal cycling test	IEC/EN 60747-5-5 IEC/EN 62368-1 UL1577	VDE 40015248 UL E113898
Alt.)	Bright Led Electronics Corp.	BPC-817 A/B/C/D/L BPC-817 M BPC-817 S	External Cr. & Cl. ≥7.6mm DTI ≥0.4mm Min. 110°C Thermal cycling test	IEC/EN 60747-5-5 IEC/EN 62368-1 UL1577	VDE 40007240 UL E113898
Alt.)	Sharp Corporation	PC817	External Cr. & Cl. ≥6.4mm DTI ≥0.4mm Min. 110°C Thermal cycling test	IEC/EN 60747-5-5 UL1577	VDE 40008087 UL E64380
Line filter (LF1) (Optional)	GlobTek BOAM HAOPUWEI HEJIA	NF00030	Min. 130°C	IEC 62368-1	Tested in the equipment
-Bobbin	CHANG CHUN PLASTICS CO LTD	T375J T375HF	Phenolic, V-0, Min. 150°C, Min. 0.45mm thickness	UL 94 UL 746	UL E59481

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

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity [1)]
-Alt. -Alt.	SUMITOMO BAKELITE CO LTD Resonac Techno Service Corporation	PM-9820 CP-J-8800	Phenolic, V-0, Min. 150°C, Min. 0.45mm thickness Phenolic, V-0, Min. 150°C, Min. 0.45mm thickness	UL 94 UL 746 UL 94 UL 746	UL E41429 UL E514256
Plastic Enclosure and Plug holder material Alt.)	SABIC INNOVATIVE PLASTICS B V SABIC JAPAN L L C	945 (GG) 945 (GG)	Min. V-0, Min. thickness: 2.0mm, 120°C Min. V-0, Min. thickness: 2.0mm, 120°C	UL 94 UL 94	UL E45329 UL E207780
Bridge Diode (BD1)	Interchangeable	Interchangeable	Min.1A, Min.800V	IEC 62368-1: 2018	Tested in equipment
Storage Capacitor (C1)	Interchangeable	Interchangeable	Max. 47µF, Min. 400V, Min. 105°C	IEC 62368-1: 2018	Tested in equipment
MOSFET (Q1)	Interchangeable	Interchangeable	Min. 7A, Min. 600V	IEC 62368-1: 2018	Tested in equipment
Output cable Alt.)	GlobTek Inc. Interchangeable	1185 Interchangeable	VW-1, 300V, Min. 22AWG, 80°C VW-1 or FT-1, Min 80°C, Min. 60V, Min. 22AWG	UL 758 UL 758	UL E464257 UL
Transformer (T1)	GlobTek BOAM Haopuwei	TF001 (For output 5-12Vdc)) TF002 (For output 12.1-18Vdc) TF003 (For 18.1-24Vdc) TF004 (For 24.1-30Vdc)	Class B	IEC 62368-1: 2018	Tested in equipment
Insulation System -Triple-insulated wire Alt.)	GlobTek Great Leoflon Industrial Co., Ltd. TOTOKU INC	GTX-130-TM TRW (B)* , TRW(B)-I* TIW-2X$+	Class 130 (B) 130°C 130℃	UL 1446 IEC/EN 62368-1 UL 2353 IEC/EN 62368-1 UL 2353	UL E243347 VDE 136581 UL E211989 VDE 40051990 UL E166483

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

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity [1)]
Alt.)	HOI LUEN ELECTRICAL MFR CO LTD	THL-F-xx, THL-F-SB-xx	155℃	IEC/EN 62368-1 UL 2353	VDE 40020365 UL E257525
-Bobbin	CHANG CHUN PLASTICS CO LTD	T375J T375HF	Phenolic, V-0, Min. 150°C, Min. 0.45mm thickness	UL 94 UL 746	UL E59481
- Alt	CHANG CHUN PLASTICS CO LTD	4130	PBT, V-0, Min. 140°C, Min. 0.45mm thickness	UL 94 UL 746	UL E59481
-Alt.	SUMITOMO BAKELITE CO LTD	PM-9820	Phenolic, V-0, Min. 150°C, Min. 0.45mm thickness	UL 94 UL 746	UL E41429
-Alt.	Resonac Techno Service Corporation	CP-J-8800	Phenolic, V-0, Min. 150°C, Min. 0.45mm thickness	UL 94 UL 746	UL E514814
-Insulating tape	3M COMPANY	1350F-1 1350T-1 44	130°C	UL 510	UL E17385
-Alt.	BONDTEC PACIFIC CO LTD	370S	130°C	UL 510	UL E175868
-Alt.	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ CT WF	130°C	UL 510	UL E17385
-Alt.	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	130°C	UL 510	UL E246950
-Alt.	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	130°C	UL 510	UL E246820
Insulation System Alt.)	BOAM	BOAM-01	Class 130 (B)	UL 1446	UL E252329
-Triple-insulated wire	Furukawa Electric Co., Ltd	TEX-E	130°C	IEC/EN 62368-1 UL 2353	VDE 006735 UL E206440
-Bobbin	SUMITOMO BAKELITE CO LTD	PM-9820	Phenolic, V-0, Min. 150°C, Min. 0.45mm thickness	UL 94 UL 746	UL E41429
-Alt.	Resonac Techno Service Corporation	CP-J-8800	Phenolic, V-0, Min. 150°C, Min. 0.45mm thickness	UL 94 UL 746	UL E514814

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

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity [1)]
-Insulating tape	3M COMPANY	1350F-1 1350T-1 44	130°C	UL 510	UL E17385
-Alt.	BONDTEC PACIFIC CO LTD	370S	130°C	UL 510	UL E175868
-Alt.	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ CT WF	130°C	UL 510	UL E17385
-Alt.	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	130°C	UL 510	UL E246820
Insulation System Alt.)	HAOPUWEI	ZT-130	Class 130 (B)	UL 1446	UL E315275
-Triple-insulated wire	KBI COSMOLINK CO., LTD.	TIW-M(XX)	130°C	IEC/EN 62368-1 UL 2353	VDE 138053 UL E213764
Alt.)	Great Leoflon Industrial Co., Ltd.	TRW (B)*, TRW(B)-I*	130°C	IEC/EN 62368-1 UL 2353	VDE 136581 UL E211989
Alt.)	TOTOKU INC	TIW-2X$+	130°C	IEC/EN 62368-1 UL 2353	VDE 40051990 UL E166483
Alt.)	HOI LUEN ELECTRICAL MFR CO LTD	THL-F-xx, THL-F-SB-xx	155°C	IEC/EN 62368-1 UL 2353	VDE 40020365 UL E257525
-Bobbin	CHANG CHUN PLASTICS CO LTD	T375J T375HF	Phenolic, V-0, Min. 150°C, Min. 0.45mm thickness	UL 94 UL 746	UL E59481
- Alt	CHANG CHUN PLASTICS CO LTD	4130	PBT, V-0, Min. 140°C, Min. 0.45mm thickness	UL 94 UL 746	UL E59481
-Alt.	SUMITOMO BAKELITE CO LTD	PM-9820	Phenolic, V-0, Min. 150°C, Min. 0.45mm thickness	UL 94 UL 746	UL E41429
-Alt.	Resonac Techno Service Corporation	CP-J-8800	Phenolic, V-0, Min. 150°C, Min. 0.45mm thickness	UL 94 UL 746	UL E514814
-Insulating tape	3M COMPANY	1350F-1 1350T-1 44	130°C	UL 510	UL E17385

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

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity [1)]
-Alt.	YAHUA	PZ CT WF	130°C	UL 510	UL E17385
-Alt.	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	130°C	UL 510	UL E246950
-Alt.	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	130°C	UL 510	UL E246820
Current Resistor (R22)	Interchangeable	Interchangeable	Min. 0.15 Ω, Min. 1/4W	IEC 62368-1: 2018	Tested in equipment

Supplementary information:

[1)] An asterisk indicates a mark which assures the agreed level of surveillance.
***)** Varistor complies with UL 1449 which cover the required 15 combination pulses 6kV (1.2/50µs)/ 3kA (8/20µs) test this is more strict than table I group 1 of IEC 61051-2.

-- End of Report --

Photos

Overview with EU and Singapore plug

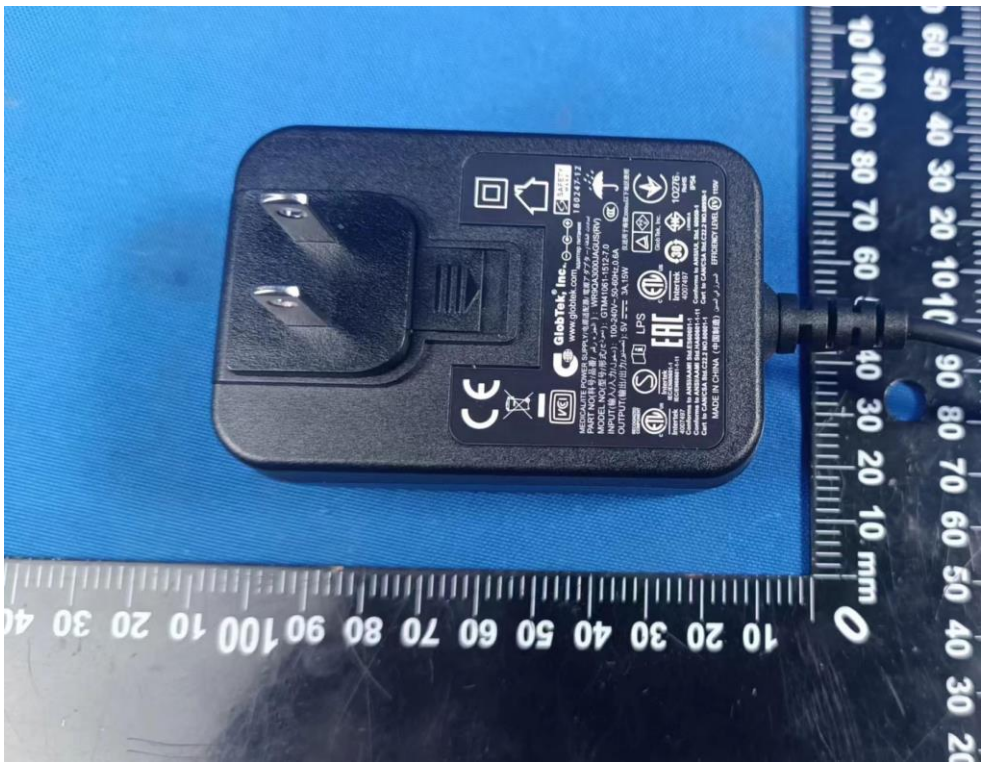


Overview with EU plug

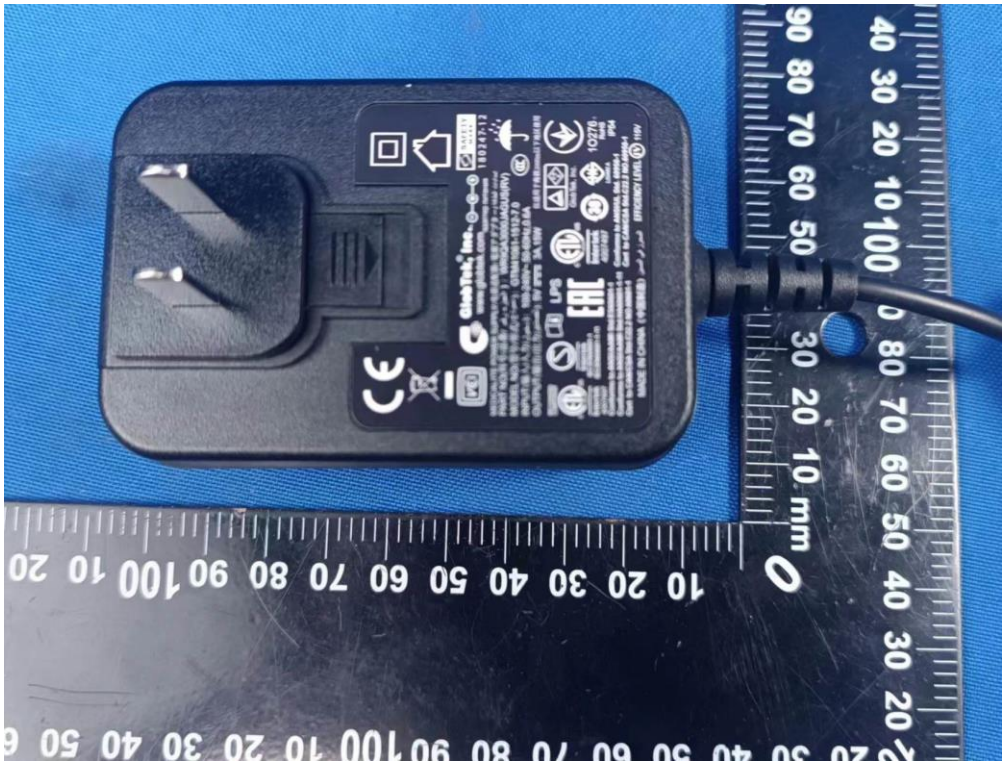


Photos

Overview with USA and Japan plug

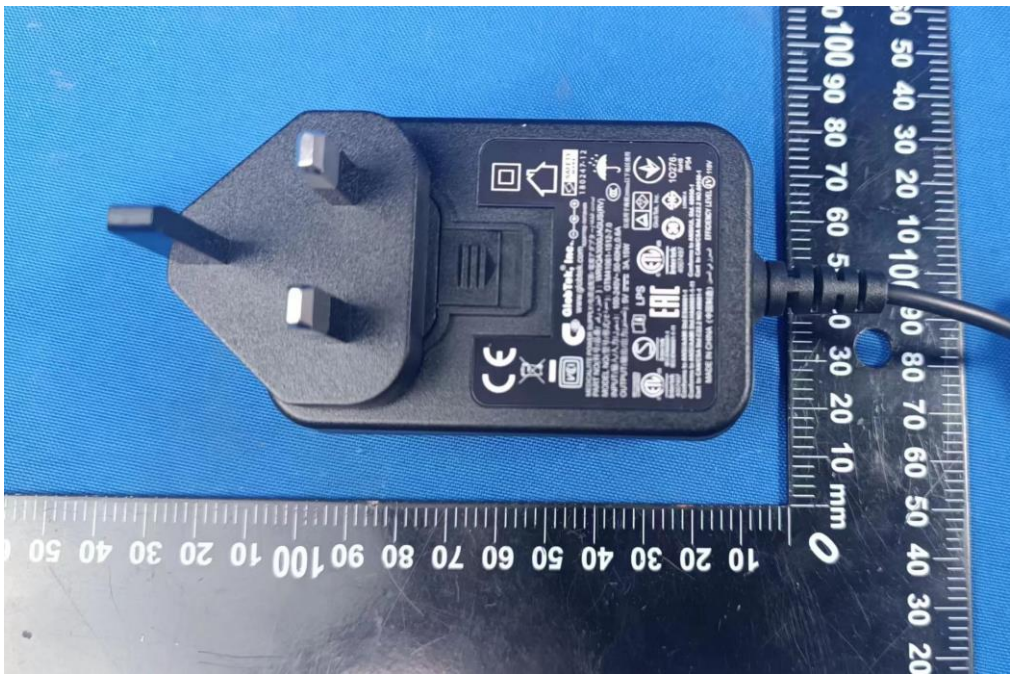


Overview with China plug



Photos

Overview with UK and Singapore plug



Overview with Australia plug



Photos

Overview



Overview



Photos

Internal view



Internal view



Photos

Internal view

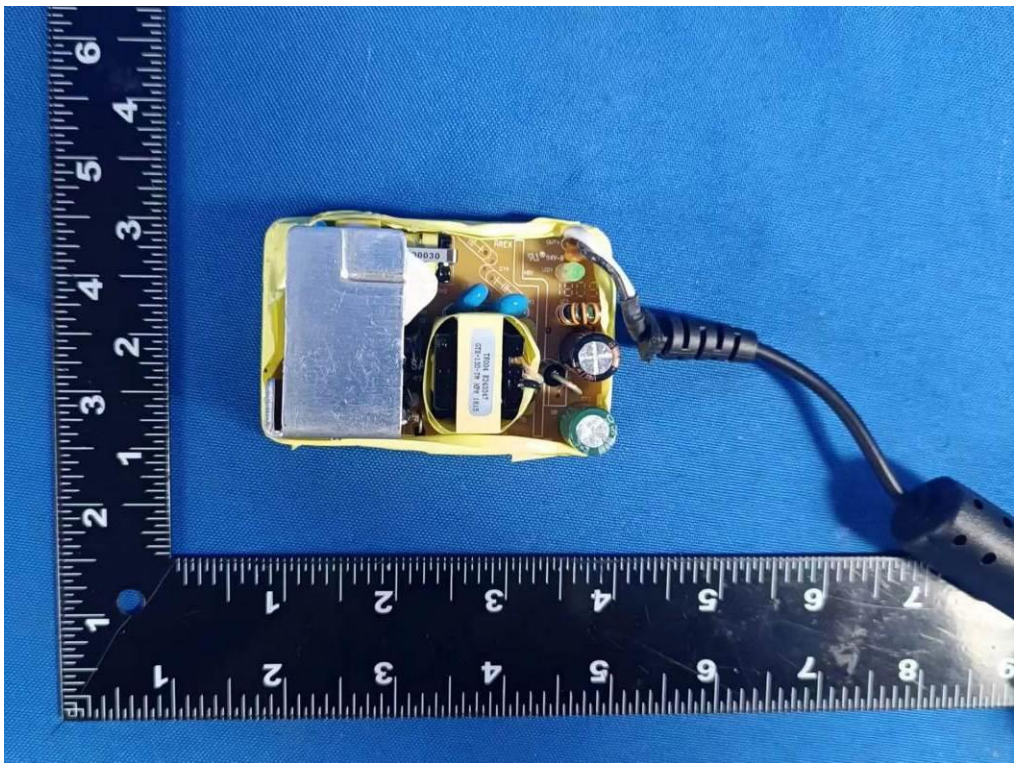


Internal view

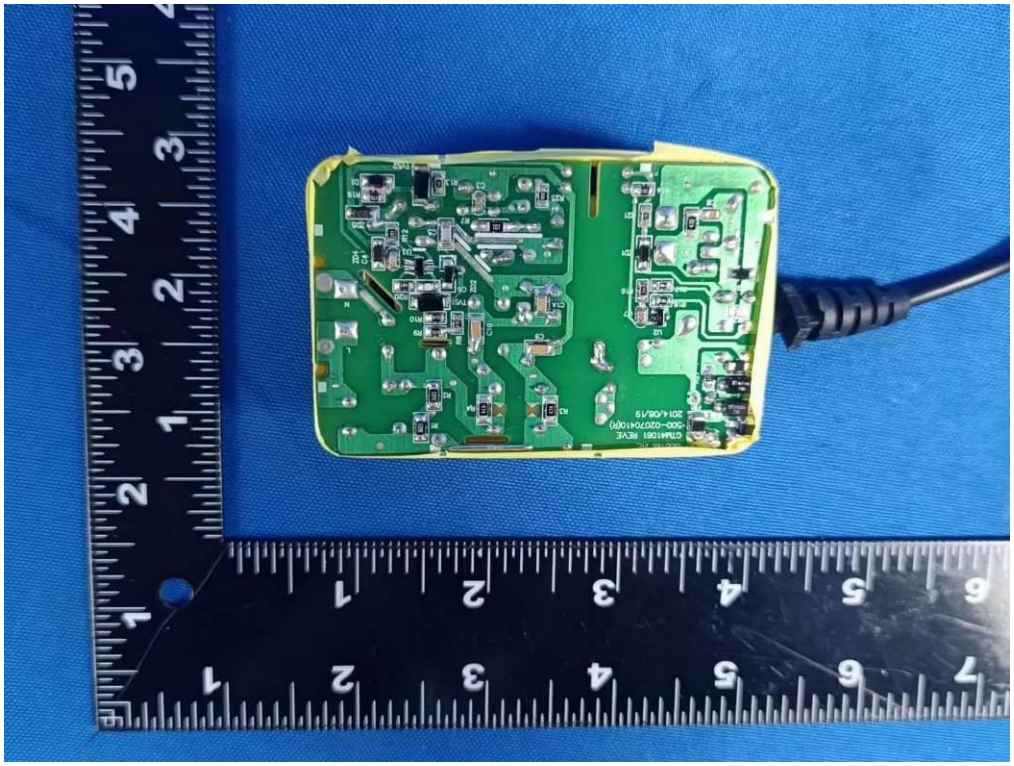


Photos

PCB Components view

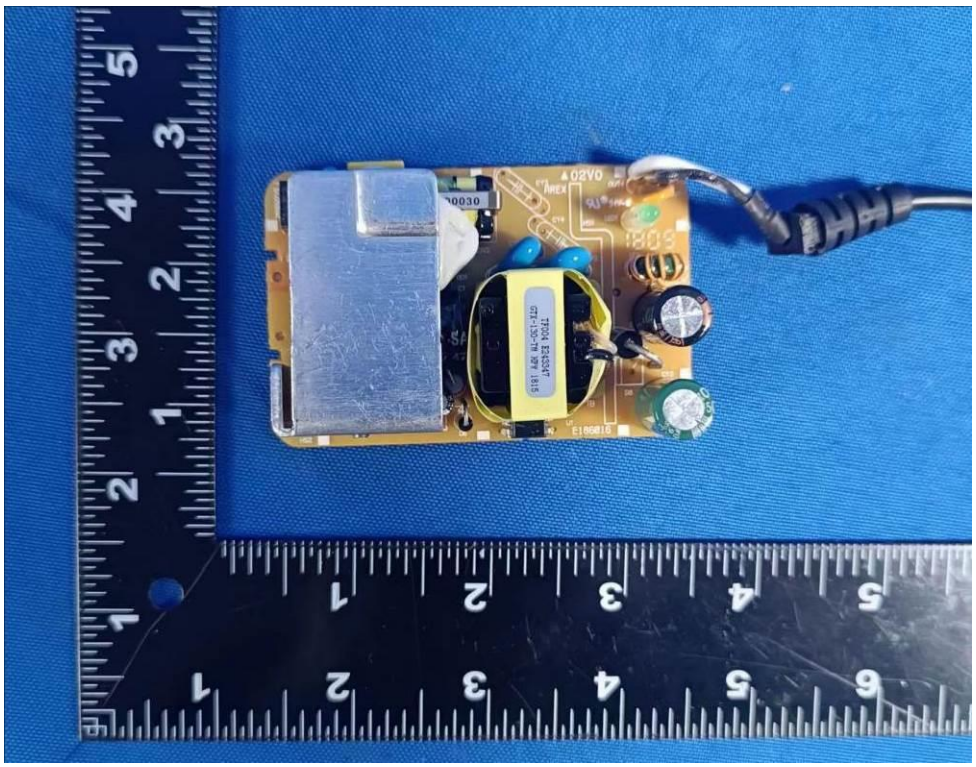


PCB Solderl view

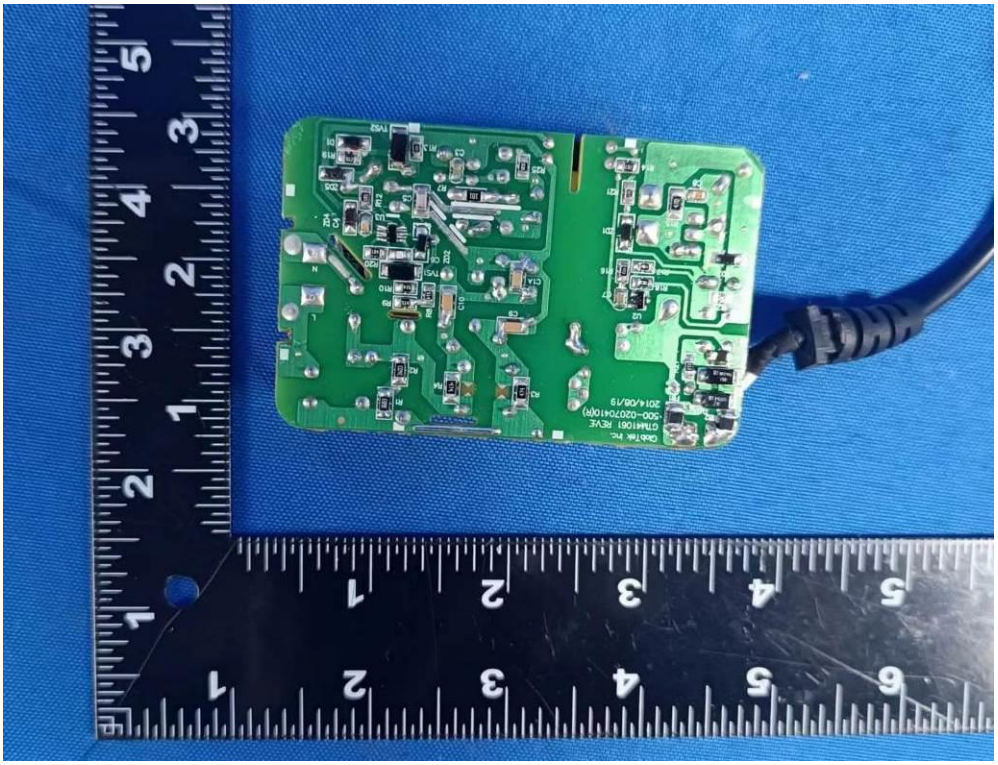


Photos

PCB Components view



PCB Solder view



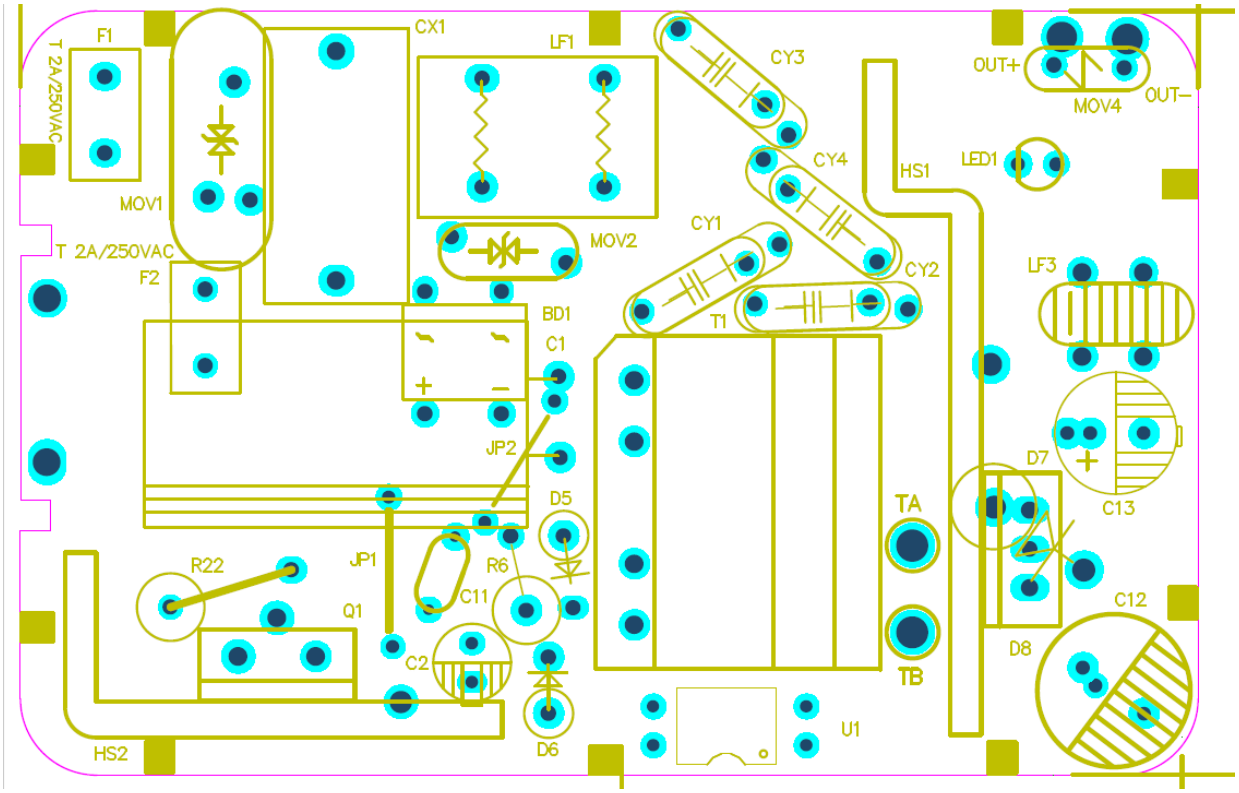
Photos

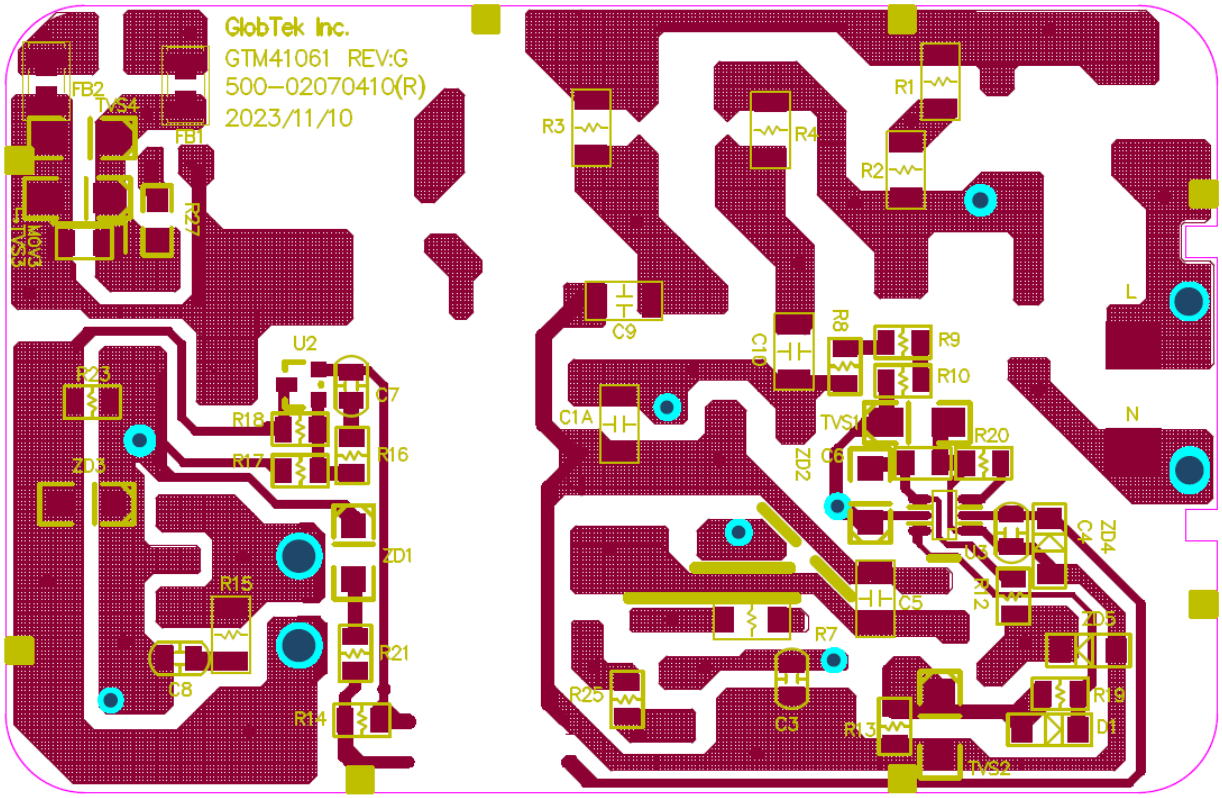
Transformer model: TF001, TF002, TF003 and TF004



PCB Layout

Copy of PCB, layout of tracing (not in 1:1 scale):

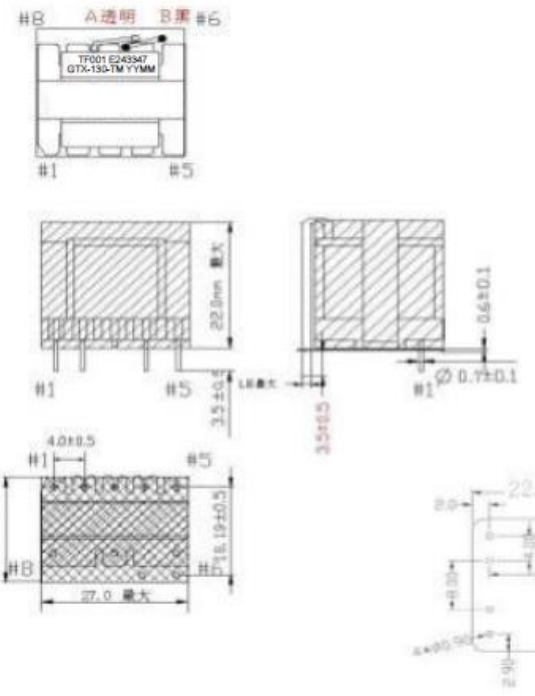




Transformer specification

Construction / winding diagram / component part no.: T1 (TF001)

1. DIMENSION (UNIT : mm)

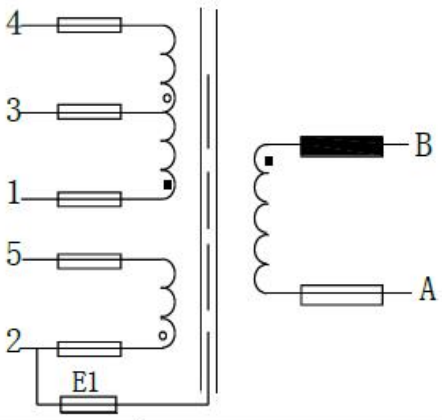




PIN6，7，8 为空脚。PIN3 CUT OFF 2/3.

1. 磁芯外包 3 圈 9.0mm 胶带。
2. 靠初级针脚侧贴一片 28mm*45mm（双层） 胶带。成品外围沿骨架边缘外包 2 圈 0.05*17mm 胶带。
3. 底板与磁芯装配良好，无空隙 。外包 2 圈 9.0mm 胶带。
4. 飞线整形时靠近变压器本体。

2. SHCEMATIC:



Construction / winding diagram / component part no.: T1 (TF001)

	Winding Core	AC2.0KV/5mA/3S	

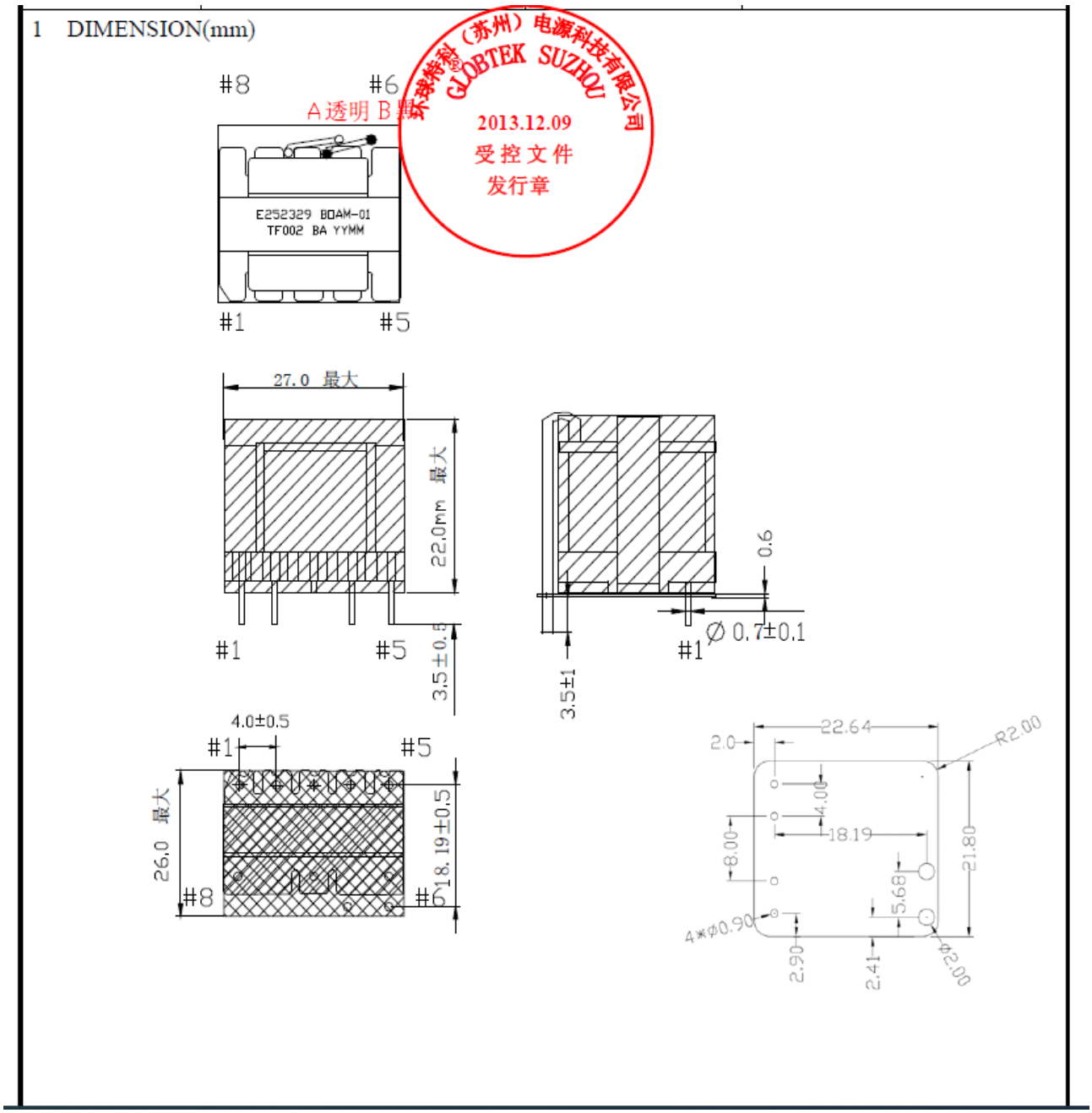
4. WINDING SPEC

NO	TERMINAL		TURNS	WIRE	STRANDS	INSULATION MATERIAL	INSULATION LAYERS
	S	F					
N1	1	3	42	2UEW/130 ϕ 0.35	1	PET 0.025	1
N2	2	5	13	2UEW/130 ϕ 0.19	3	PET 0.025	2
N3	B	A	5	TRWB ϕ 0.45	4	PET 0.025	2
E1		2	0.9	0.05*5W(背胶)		PET 0.025	2
N4	3	4	18	2UEW/130 ϕ 0.35	1	PET 0.025	3

5. MATERIAL LIST

Transformer specification

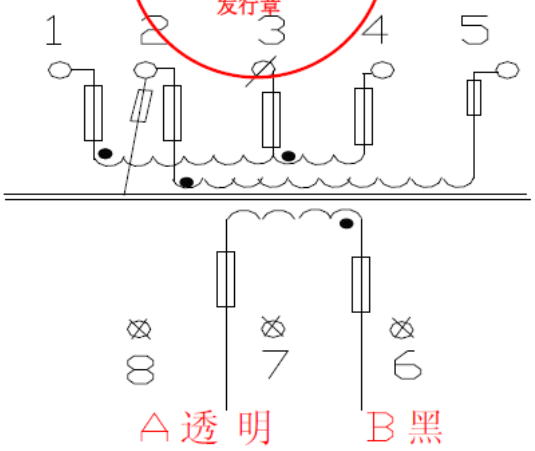
Construction / winding diagram / component part no.: T1 (TF002)



Transformer specification

Construction / winding diagram / component part no.: T1 (TF002)

2 EQUIVALENT CIRCUIT (BOTTOM VIEW)



环旭电子(苏州)电源科技有限公司 GLOBTEK SUZHOU
2013.12.09
受控文件
发行章

* THE "●" MARKS ARE START POINT
*REMOVE PIN 6# 7# #8
*CUTTING PIN #3
*TUBE

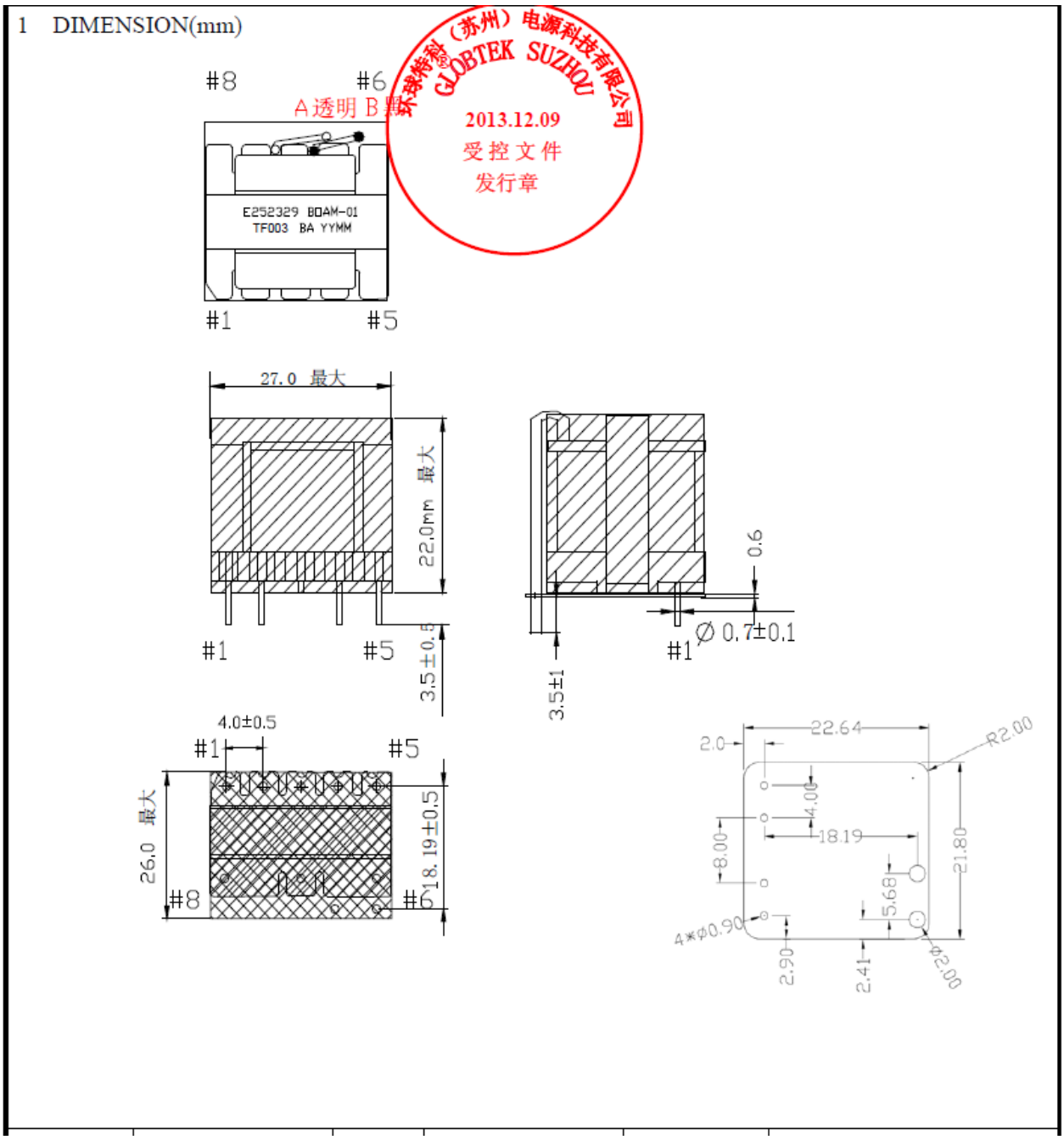
4. WINDING SPECIFICATION

NO	PIN NO. (S-F) S:START, F:FINISH	WIRE	TURNS	WINDING METHOD
W1	(1)—(3)	2UEW Φ0.35	40	SOLENOID WINDING
	INSULATION: POLYESTER TAPE t= 0.025mm, w=9.0 mm,1Ts			
W2	(2)--(5)	2UEW Φ0.19*3	12	SOLENOID WINDING
	INSULATION: POLYESTER TAPE t= 0.025mm, w=9.0mm,2Ts			
W3	(B 黑)—(A 透明)	TEX-E 0.4*2	12	SOLENOID WINDING
	INSULATION: POLYESTER TAPE t= 0.025mm, w=9.0 mm, 2 Ts			
W4	—(2)	0.05/7.0 mm,COPER+TAPE	0.9	CENTER
	INSULATION: POLYESTER TAPE t= 0.025mm, w=9.0 mm, 2Ts			
W5	(3)--(4)	2UEW Φ0.35	20	SOLENOID WINDING
	INSULATION: POLYESTER TAPE t= 0.025mm, w=9.0 mm, 3Ts			
	CORE FIXING :POLYESTER TAPE t= 0.025mm, w=8.5mm, 3Ts			
	CORE TAPE:2LAYER POLYESTER TAPE t= 0.025mm, w=28.0 mm,LENGTH:45mm			
	INSULATION: POLYESTER TAPE t= 0.05mm, w=17.0mm,2LAYER			
	CORE FIXING :POLYESTER TAPE t= 0.025mm, w=8.5mm, 2Ts			

环旭电子(苏州)电源科技有限公司 GLOBTEK SUZHOU
2013.12.09
受控文件
发行章

Transformer specification

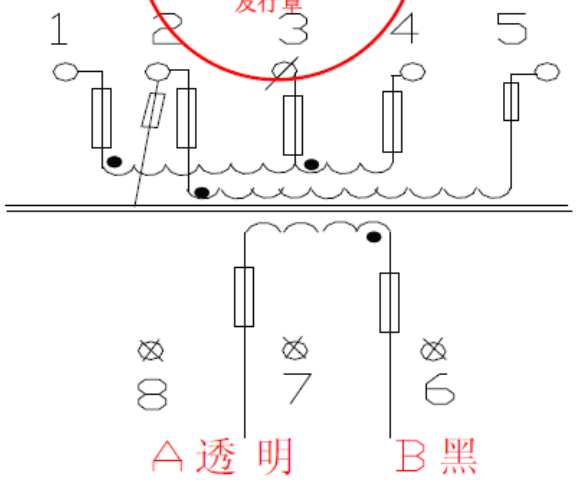
Construction / winding diagram / component part no.: T1 (TF003)



Transformer specification

Construction / winding diagram / component part no.: T1 (TF003)

2 EQUIVALENT CIRCUIT (BOTTOM VIEW)



(苏州)电源科技有限公司 GLOBTEK SUZHOU
2013.12.09
受控文件
发行章

* THE "●" MARKS ARE START POINT
*REMOVE PIN 6# 7# #8
*CUTTING PIN #3
*TUBE

4. WINDING SPECIFICATION

NO	PIN NO. (S-F) S:START, F:FINISH	WIRE	TURNS	WINDING METHOD
W1	(1)—(3)	2UEW Φ0.35	40	SOLENOID WINDING
	INSULATION: POLYESTER TAPE t= 0.025mm, w=9.0.mm,1Ts			
W2	(2)--(5)	2UEW Φ0.19*3	13	SOLENOID WINDING
	INSULATION: POLYESTER TAPE t= 0.025mm, w=9.0mm,2Ts			
W3	(B 黑)—(A 透明)	TEX-E 0.60	17	SOLENOID WINDING
	INSULATION: POLYESTER TAPE t= 0.025mm, w=9.0.mm, 2 Ts			
W4	—(2)	0.05/7.0 mm,COPER+TAPE	0.9	CENTER
	INSULATION: POLYESTER TAPE t= 0.025mm, w=9.0.mm, 2Ts			
W5	(3)--(4)	2UEW Φ0.35	20	SOLENOID WINDING
	INSULATION: POLYESTER TAPE t= 0.025mm, w=9.0.mm, 3Ts			
	CORE FIXING :POLYESTER TAPE t= 0.025mm, w=8.5mm, 3Ts			
	CORE TAPE:2LAYER POLYESTER TAPE t= 0.025mm, w=28.0.mm,LENGTH:45mm			
	INSULATION: POLYESTER TAPE t= 0.05mm, w=17.0mm,2LAYER			
	CORE FIXING :POLYESTER TAPE t= 0.025mm, w=8.5mm, 2Ts			

Transformer specification

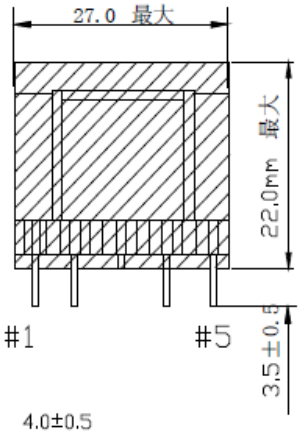
Construction / winding diagram / component part no.: T1 (TF004)

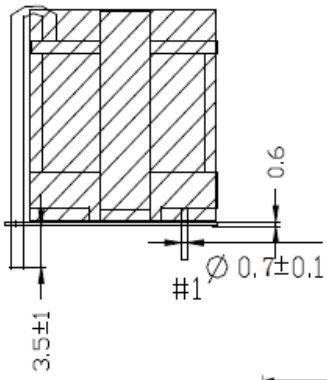
MODEL NO. EE2218W PART NO.

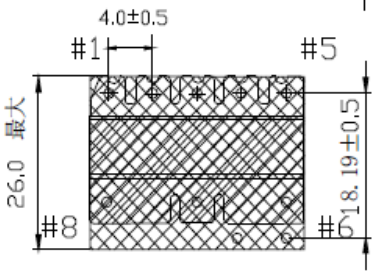
1 DIMENSION(mm)

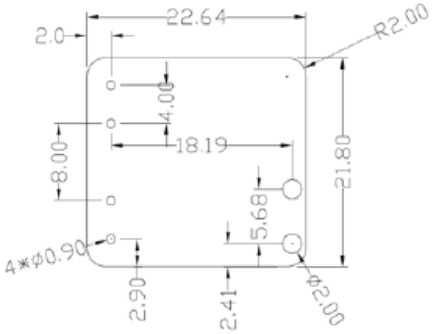


环球特科（苏州）电源科技有限公司
GLOBTEK SUZHOU
2013.12.09
受控文件
发行章





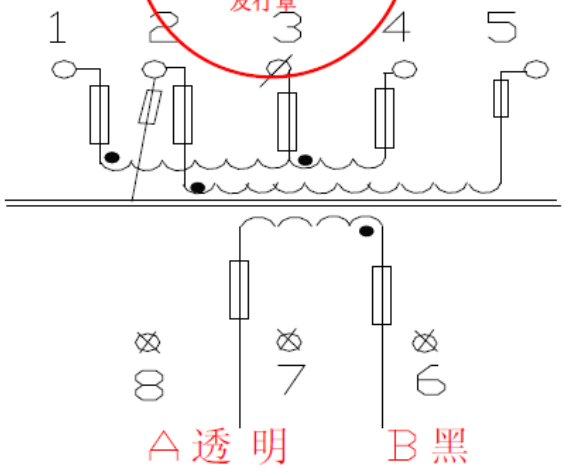




Transformer specification

Construction / winding diagram / component part no.: T1 (TF004)

2 EQUIVALENT CIRCUIT (BOTTOM VIEW)



环旭电子(苏州)有限公司 GLOBTEK SUZHOU
2013.12.09
受控文件
发行章

* THE "●" MARKS ARE START POINT
*REMOVE PIN 6# 7# #8
*CUTTING PIN #3
*TUBE

4. WINDING SPECIFICATION

NO	PIN NO. (S-F) S:START, F:FINISH	WIRE	TURNS	WINDING METHOD
W1	(1)—(3)	2UEW Φ0.35	40	SOLENOID WINDING
	INSULATION: POLYESTER TAPE t= 0.025mm, w=9.0 mm,1Ts			
W2	(2)--(5)	2UEW Φ0.19*3	13	SOLENOID WINDING
	INSULATION: POLYESTER TAPE t= 0.025mm, w=9.0mm,2Ts			
W3	(B 黑)—(A 透明)	TEX-E 0.45	24	SOLENOID WINDING
	INSULATION: POLYESTER TAPE t= 0.025mm, w=9.0 mm, 2 Ts			
W4	—(2)	0.05/7.0 mm,COPER+TAPE	0.9	CENTER
	INSULATION: POLYESTER TAPE t= 0.025mm, w=9.0 mm, 2Ts			
W5	(3)--(4)	2UEW Φ0.35	20	SOLENOID WINDING
	INSULATION: POLYESTER TAPE t= 0.025mm, w=9.0 mm, 3Ts			
	CORE FIXING :POLYESTER TAPE t= 0.025mm, w=8.5mm, 3Ts			
	CORE TAPE:2LAYER POLYESTER TAPE t= 0.025mm, w=28.0 mm,LENGTH:45mm			
	INSULATION: POLYESTER TAPE t= 0.05mm, w=17.0mm,2LAYER			
	CORE FIXING :POLYESTER TAPE t= 0.025mm, w=8.5mm, 2Ts			

环旭电子(苏州)有限公司 GLOBTEK SUZHOU
2013.12.09
受控文件
发行章

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT

IEC 62368-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
(Audio/video, information and communication technology equipment - Part 1: Safety requirements)

Differences according to ..... : EN IEC 62368-1:2020+A11:2020

Attachment Form No. ..... : EU_GD_IEC62368_1E

Attachment Originator ..... : UL(Demko)

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

Copyright © 2021 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.

	CENELEC COMMON MODIFICATIONS (EN)	P
	Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2020+A11:2020. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2018. Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2018 are prefixed “Z”.	P
	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords	P
1	**Modification to Clause 3 .**	
3.3.19	**Sound exposure** *Replace 3.3.19 of IEC 62368-1 with the following definitions:*	N/A

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

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	long-term exposure to excessive sound pressure levels from personal music players closely coupled to the ear are specified below. Requirements for earphones and headphones intended for use with personal music players are also covered. A personal music player is a portable equipment intended for use by an **ordinary person**, that: – is designed to allow the user to listen to audio or audiovisual content / material; and – uses a listening device, such as headphones or earphones that can be worn in or on or around the ears; and – has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.). EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment. Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3. NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360. NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.5 as soon as possible. Listening devices sold separately shall comply with the requirements of 10.6.6. These requirements are valid for music or video mode only. The requirements do not apply to: – professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment. – hearing aid equipment and other devices for assistive listening; – the following type of analogue personal music players: • long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and • cassette player/recorder; NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.		

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	– a player while connected to an external amplifier that does not allow the user to walk around while in use. For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply. The relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.		
10.6.1.2	**Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz** The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body mounted devices, attention is drawn to EN 50360 and EN 50566.		N/A
10.6.2	**Classification of devices without the capacity to estimate sound dose**		N/A
10.6.2.1	**General** This standard is transitioning from short-term based (30 s) requirements to long-term based (40 hour) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3. For classifying the acoustic output $L_{Aeq,T}$, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period. For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, measurements may be done over the duration of the complete song. In this case, T becomes the duration of the song. NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song does not exceed the required limit. For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	song is not above the basic limit of 85 dB.		
10.6.2.2	**RS1 limits (to be superseded, see 10.6.3.2)** RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 85 dB when playing the fixed "programme simulation noise" described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1. – The RS1 limits will be updated for all devices as per 10.6.3.2.		N/A
10.6.2.3	**RS2 limits (to be superseded, see 10.6.3.3)** RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or when the combination of player and listening device is known by other means such as setting or automatic 130 detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 100 dB(A) when playing the fixed "programme simulation noise" as described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed "programme simulation noise" as described in EN 50332-1.		N/A
10.6.2.4	**RS3 limits** RS3 is a class 3 acoustic energy source that exceeds RS2 limits.		N/A
10.6.3	**Classification of devices (new)**		N/A
10.6.3.1	**General** Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	below.		
10.6.3.2	**RS1 limits (new)** RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 80 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.		N/A
10.6.3.3	**RS2 limits (new)** RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.		N/A
10.6.4	**Requirements for maximum sound exposure**		N/A
10.6.4.1	**Measurement methods** All volume controls shall be turned to maximum during tests. Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.		N/A
10.6.4.2	**Protection of persons** Except as given below, protection requirements for parts **accessible** to **ordinary persons**, **instructed**		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	persons and **skilled persons** are given in 4.3. NOTE 1 Volume control is not considered a **safeguard.** Between RS2 and an **ordinary person**, the **basic safeguard** may be replaced by an **instructional safeguard** in accordance with Clause F.5, except that the **instructional safeguard** shall be placed on the equipment, or on the packaging, or in the instruction manual. Alternatively, the **instructional safeguard** may be given through the equipment display during use. The elements of the **instructional safeguard** shall be as follows: – element 1a: the symbol , IEC 60417-6044 (2011-01) – element 2: “High sound pressure” or equivalent wording – element 3: “Hearing damage risk” or equivalent wording – element 4: “Do not listen at high volume levels for long periods.” or equivalent wording An **equipment safeguard** shall prevent exposure of an **ordinary person** to an RS2 source without intentional physical action from the **ordinary person** and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off. The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output exceeding RS1. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output exceeding RS1. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time. NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed. NOTE 3 The 20 h listening time is the accumulative listening time, independent of how often and how long the personal music player has been switched off. A **skilled person** shall not be unintentionally exposed to RS3.		
10.6.5	**Requirements for dose-based systems**		N/A
10.6.5.1	**General requirements** Personal music players shall give the warnings as provided below when tested according to EN		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	50332-3, using the limits from this clause. The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the safeguards. This allows the users to be informed in a method that best meets their physical capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration. The personal music player shall be supplied with easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.		
10.6.5.2	**Dose-based warning and requirements** When a dose of 100 % *CSD* is reached, and at least at every 100 % further increase of *CSD*, the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1. The warning shall at least clearly indicate that listening above 100 % *CSD* leads to the risk of hearing damage or loss.		N/A
10.6.5.3	**Exposure-based requirements** With only dose-based requirements, cause and effect could be far separated in time, defying the purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-term sound level a user can listen at. The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3. The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster. Test of EL functionality is conducted according to EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface. NOTE In case the source is known not to be music (or test signal), the EL may be disabled.		
10.6.6	**Requirements for listening devices (headphones, earphones, etc.)**		N/A
10.6.6.1	**Corded listening devices with analogue input** With 94 dB L_{Aeq} acoustic pressure output of the listening device, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the input voltage of the listening device when playing the fixed "programme simulation noise" as described in EN 50332-1 shall be ≥ 75 mV. NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.		N/A
10.6.6.2	**Corded listening devices with digital input** With any playing device playing the fixed "programme simulation noise" described in EN 50332-1, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.3	**Cordless listening devices** In cordless mode, – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the $L_{Aeq,T}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.		N/A
10.6.6.4	**Measurement method** *Measurements shall be made in accordance with*		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	EN 50332-2 as applicable.		
3	**Modification to the whole document**		
	Delete all the “country” notes in the reference document according to the following list:		P

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

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

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

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

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

8	**Modification to 10.5.1**		
10.5.1	***Add*** *the following after the first paragraph:* For RS 1 compliance is checked by measurement under the following conditions: In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or pre-sets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made. NOTE Z1 Soldered joints and paint lockings are examples of adequate locking. The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm^2, at any point 10 cm from the outer surface of the apparatus. Moreover, the measurement shall be made under fault conditions causing an increase of the high voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made. For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level. NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.		N/A
9	**Modification to G.7.1**		
G.7.1	***Add*** *the following note:* NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

10	**Modification to Bibliography**		
	Add the following notes for the standards indicated: IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.		P
11	**ADDITION OF ANNEXES**		
ZB	**ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)**		N/A
4.1.15	**Denmark, Finland, Norway** and **Sweden** To the end of the subclause the following is added: **Class I pluggable equipment type A** intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and **accessible** parts, have a marking stating that the equipment shall be connected to an earthed **mains** socket-outlet. The marking text in the applicable countries shall be as follows: In **Denmark**: “Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.” In **Finland**: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In **Norway**: “Apparatet må tilkoples jordet stikkontakt” In **Sweden**: “Apparaten skall anslutas till jordat uttag”	Class II equipment.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	**United Kingdom** To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex		N/A
5.2.2.2	**Denmark** After the 2nd paragraph add the following: A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A
5.4.11.1 and Annex G	**Finland and Sweden** To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: • the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11; • the additional testing shall be performed on all the test specimens as described in EN 60384-14; the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		
5.5.2.1	**Norway** After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Capacitors rated min. 250V.	P
5.5.6	**Finland, Norway** and **Sweden** To the end of the subclause the following is added: Resistors used as **basic safeguard** or bridging **basic insulation** in **class I pluggable equipment type A** shall comply with G.10.1 and the test of G.10.2.		N/A
5.6.1	**Denmark** **Add** to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. *Justification:* In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.	Fuse is integrated in the equipment.	P
5.6.4.2.1	**Ireland and United Kingdom** After the indent for **pluggable equipment type A**, the following is added: – the **protective current rating** is taken to be 13 A, this being the largest rating of fuse used in the **mains** plug.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.4.2.1	**France** After the indent for **pluggable equipment type A**, the following is added: – in certain cases, the **protective current rating** of the circuit supplied from the mains is taken as 20 A instead of 16 A.		N/A
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm^2 to 1,5 mm^2 in cross-sectional area.		N/A
5.6.8	**Norway** To the end of the subclause the following is added: Equipment connected with an earthed mains plug is classified as **class I equipment**. See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.		N/A
5.7.6	**Denmark** To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the **protective conductor current** exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A
5.7.6.2	**Denmark** To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .		N/A
5.7.7.1	**Norway and Sweden** To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by a retailer, for example. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Apparatus connected to the protective earthing of the building installation through the mains	Not TV.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)" NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): "Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet." Translation to Swedish: "Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.".		
8.5.4.2.3	**United Kingdom** Add the following after the 2nd dash bullet in 3rd paragraph: An emergency stop system complying with the requirements of IEC 60204-1 and ISO 13850 is required where there is a risk of personal injury.	Not an emergency stop system.	N/A
B.3.1 and B.4	**Ireland and United Kingdom** The following is applicable: To protect against excessive currents and short-circuits in the primary circuit of **direct plug-in equipment**, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the **direct plug-in equipment**, until the requirements of Annexes B.3.1 and B.4 are met		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	**Denmark** To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a polyphase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a *Justification:* Heavy Current Regulations, Section 6c		N/A
G.4.2	**United Kingdom** To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	**United Kingdom** To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc. (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	Direct plug in equipment.	N/A
G.7.1	**Ireland** To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard		N/A
G.7.2	**Ireland and United Kingdom** To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm^2 is allowed for equipment which is rated over 10 A and up to and including 13 A.	Direct plug in equipment.	N/A
ZC	**ANNEX ZC, NATIONAL DEVIATIONS (EN)**		
10.5.2	**Germany** The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. *Justification*: German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. **NOTE** Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de	No CRT.	N/A

IEC62368_1E - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)	

N/A

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

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT **IEC 62368-1** **U.S.A. AND CANADA NATIONAL DIFFERENCES** (AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT – PART 1: SAFETY REQUIREMENTS)			
Differences according to.....:	CSA/UL 62368-1:2019		
TRF template used: .....:	IECEE OD-2020-F3, Ed. 1.1		
Attachment Form No.....:	US_CA_ND_IEC62368_1E		
Attachment Originator .....:	UL(US)		
Master Attachment.....:	Dated 2022-03-04		
Copyright © 2022 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
IEC 62368-1 - US and Canadian National Differences **Special National Conditions based on Regulations and Other National Differences**			
1 (1DV.1) (1.3)	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part 1, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.	Must be checked when market to the country	—
1 (1DV.2.1)	This standard includes additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities. See Annex DVB.		N/A
1 (1DV.2.2)	This standard includes additional requirements for equipment intended for mounting under cabinets. See Annex DVC.		N/A
1 (1DV.2.3)	IEC 62368-3 clause 5 for DC power transfer at ES1 or ES2 voltage levels is considered informative. IEC 62368-3 clause 6 for remote power feeding telecommunication (RFT) circuits is considered normative (see ITU K.50). Alternatively, equipment with RFT circuits are given in either UL 2391 or CSA/UL 60950-21. RFT-C circuits are not permitted unless the RFT-C circuit complies with RFT-V limits (≤ 200V per conductor to earth).		N/A
1 (1DV.3)	For protection against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72 for additional requirements.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1 (DV.5)	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		N/A
4.1 (4.1.17)	For lengths exceeding 3.05 m, external interconnecting cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.	Direct plug in equipment.	N/A
	For lengths 3.05 m or less, external interconnecting cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.		N/A
4.6 (4.6.2)	Wire-wrap terminals have special construction and performance requirements.		N/A
4.8 (4.8.3, 4.8.4.5, 4.8.5)	Coin / button cell batteries have modified special construction and performance requirements.	No battery used.	N/A
5.4.2.3.2 (5.4.2.3.2.1	Surge Arrestors and Transient Voltage Surge Suppressors installed external to the equipment are required to comply with the appropriate NEC and CEC requirements.		N/A
5.5.9	Receptacles, rated 125-V, single phase, 15- or 20-A accessible to either ordinary, instructed, or skilled persons are required to be provided with GFCI Protection for Personnel if the equipment containing the receptacles is installed outdoors. The protection devices are required to comply with UL 943, and CAN/CSA C22.2 No.144.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.7, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment.	Class II equipment.	N/A
5.7.8 (5.7.8.1)	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure is required to comply with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A
Annex F (F.3.3.9)	Output terminals provided for supply of other equipment, except mains supply, are required to be marked with a maximum rating or reference to equipment permitted to be connected.	Max. output rating is listed on the product.	P
Annex F (F.3.7)	Outdoor Enclosures are required to be classified and marked in accordance with UL 50 or 50E, or CAN/CSA C22.2 No. 94.1 or 94.2.		N/A
Annex G (G.7)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	No permanently connected equipment.	N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
	Power supply cords for outdoor equipment are required to be suitable outdoor use type as required by Section 400.4 of the NEC and Rule 4-012 of the CEC, i.e., marked “W.”		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
Annex Q (Q.3)	Equipment with paired conductor and/or coax communications cables/wiring connected to building wiring are required to have special voltage, current, power and marking requirements.		N/A
Annex DVA (1)	Equipment that is designed such that it may be powered from a separate electrical service, is required to meet applicable requirements for service equipment for control and protection of services and their installation and complies with Article 230 of the National Electrical Code (NEC), NFPA 70 and Section 6 of the Canadian Electrical Code, Part I, CSA C22.1.		N/A
	Equipment intended for use in spaces used for environmental air (plenums) are subjected to special flammability requirements for heat and visible smoke release.		N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m^3 (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. and Canadian Regulations.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
	Storage batteries and battery management equipment, other than associated with lead-acid batteries, and including battery backup systems that are not an integral part of stationary AV and ICT equipment, such as provided in separate cabinets, are required to be certified (listed) to the appropriate standard(s) for such storage batteries and equipment.		N/A
Annex DVA (5.6)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	See main report.	P
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m^2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a minimum flammability classification of V-1.		N/A
Annex DVA (10.3)	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (10.5)	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (F.3.3.4)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or that are lower than the “Normal Operating Condition” in Table 2 of CAN/CSA C22.2 No. 235.”	No applicable.	N/A
Annex DVA (F.3.3.6)	Equipment identified for ITE (computer) room installation is required to be marked with the rated current.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position, where mounted in an enclosure, vertically mounted **disconnect switches** and **circuit breakers** with vertical operating means extending outside the enclosure are required to indicate in a location visible when accessing the external operating means whether the switch or circuit breaker is in the open (off) or closed (on) position.		N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-400 and 10-612.		N/A
Annex DVA (G.4.3)	Interconnection of units by conductors supplied by a limited power source, or a Class 2 circuit defined in the NEC/CEC may have field wiring connections other than specified in DVH.3, such as wire-wrap and crimp-on types, if the limited power source and Class 2 circuits are separated from all other circuits by barriers, routing or fixing.		N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
Annex DVA (G.7)	Flexible cords used outdoors are required to have the suffix “W” marked on the flexible cord.		N/A
Annex DVA (M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (Q)	If applicable per NEC 725.121(C), some limited power sources supplied from AV/ICT equipment are required to have a label indicating the maximum voltage and rated current output for per conductor for each connection point. Where multiple connection points have the same rating, a single label is permitted to be used.		N/A
	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1are required to be marked with the voltage rating and “Class 2” or equivalent. The marking is located adjacent to the terminals and visible during wiring.		N/A
	Applicable parts of Chapter 8 of the NEC, and Rules 54 and 60 of the CEC, may be applicable to ITE installed outdoors with connections to communication systems.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These equipment and components include: appliance couplers, attachment plugs, battery backup systems, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, modular data centres, power supply cords, some power distribution equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	See table 4.1.2 in main report. Critical components are IEC and UL certified.	P
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.		N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are required to be in accordance with the NEC/CEC.		N/A
Annex DVH (DVH.2.1)	For safe and reliable connection to a mains, permanently connected equipment is to be provided.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVH (DVH.2.2)	Additional considerations for D.C. mains.		N/A
Annex DVH (DVH.3.2.1)	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified.		N/A
Annex DVH (DVH.3.2.3)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm^2).		N/A
Annex DVH (DVH.3.2.4)	All associated mains supply terminals are located in proximity to each other and to the main protective earthing terminal, if any.		N/A
Annex DVH (DVH.3.2.5)	Terminals are located, guarded or insulated so that, should a strand of a conductor escape when the conductor is fitted, there is no likelihood of accidental contact between such a strand and accessible conductive parts or unearthed conductive parts separated from accessible conductive parts by supplementary insulation only.		N/A
Annex DVH (DVH.3.3)	When field connection to an external circuit is via wires (example, free conductors), the wires are not smaller than 18 AWG (0.82 mm^2) and the free length of the wire inside an outlet box or wiring compartment is 150 mm or more.		N/A
Annex DVH (DVH.3.4)	Size of protective earthing conductors and terminals	(See sub-clause 5.6.5)	N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH.4.1)	Wire bending space		N/A
Annex DVH (DVH.4.2)	Volume of wiring compartment		N/A
Annex DVH (DVH.4.3)	Separation of circuits		N/A
Annex DVH (DVH.5)	Equipment markings and instructional safeguards		N/A
Annex DVH (DVH.5.1)	Identification of protective earthing terminal		N/A
Annex DVH (DVH.5.2)	Identification of terminal for earthed conductor (neutral)		N/A
Annex DVH (DVH.5.3)	Identification of terminals for aluminium conductors		N/A
Annex DVH (DVH.5.4)	Wire temperature ratings		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.		N/A

IEC62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.		N/A
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT **IEC 62368-1:2018** **JAPAN NATIONAL DIFFERENCES** AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT – PART 1: SAFETY REQUIREMENTS			
Differences according to ..... : J62368-1(2023)			
TRF template used:.....: IECEE OD-2020-F3:2022, Ed. 1.2			
Attachment Form No. ..... : JP_ND_IEC62368_1E **Attachment Originator.....** : UL Solutions (JP) **Master Attachment**..... : Dated 2023-05-12			
Copyright © 2023 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this document or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.	Considered.	P
5.6.1	Mains socket-outlet and interconnection coupler shall comply with Clause G.4.2A if they are incorporated as part of the equipment.	Not applicable.	N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
5.6.2.1	Connection for protective conductor of class 0I equipment provided with instructional safeguard in accordance with Clause F.3.6.1A is considered to make earlier and break later than supply connection. Mains plug having a lead wire for protective earthing connection of class 0I equipment shall comply with all of the following: – Not to be used for equipment having a rated voltage of 150 V or more – Clip is not used for the earthing connection of the lead wire. – The lead wire for earthing is at least 10 cm long If class 0I equipment provides an independent main protective earthing terminal and is intended to be installed by ordinary person, earthing wire shall be provided in the package of the equipment.	Class II equipment.	N/A
5.6.2.2	Internal earthing conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector need not be green-and-yellow.	Not applicable.	N/A
5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cab tire cable with 1.25 mm^2 or more cross-sectional area		N/A
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series, JIS C 8300 or JIS C 8303, or that is provided with mains appliance outlet as specified in JIS C 8283 series for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.	Class II equipment.	N/A
5.7.5	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990:2016.	Class II equipment.	N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
6.4.3.2	A fuse complying with JIC C 6575 series or a fuse having equivalent characteristics shall open within 1 s. A fuse having time/current characteristics other than those specified in IEC 60127 shall be tested with the characteristics taken into account. In case of Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”.		N/A
8.5.4.3.1	Only three-phase stationary equipment rated more than AC 200 V can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.		N/A
8.5.4.3.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.		N/A
8.5.4.3.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.		N/A
8.5.4.3.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.		N/A
F.3.5.1	When the mains socket-outlet is configured in accordance with JIS C 8282 series, JIS C 8300 or JIS C 8303, the assigned current or power shall be marked. If the voltage of the socket-outlet is the same as the mains voltage, the voltage need not be marked. Instructional safeguard of Class 0I equipment shall be provided with an instructional safeguard in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8300 or JIS C 8303 to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.		N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic shall be included.	See main report.	P

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.2 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions shall be provided regarding the earthing connection. In addition to the above, for class 0I equipment, an instruction to connect earthing before and disconnect earthing after the connection of supply conductors shall be marked on the visible place of the main body or shall be in the text of an accompanying document.		N/A
F.3.6.2	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.		N/A
F.3.8A	Attention marking for aging deterioration of CRT television Year of manufacture, standard usage period by design according to JIS C 9921-5 and cautionary statement for possible risks of aging deterioration when used beyond the specified period shall be marked on CRT television except for industrial use CRT television.		N/A
F.4	For audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A, the instructions shall require that the external wiring connected to these terminals shall be installed by a skilled person, or shall be connected by means of ready-made leads or cords that are constructed in a way that would prevent contact with any ES3 circuit. For class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided in the package of the equipment, if the protective earthing connection is made by instructed person or skilled person, the suitable installation instruction for the protective earthing connection shall be provided.		N/A
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.		N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
G.3.4	Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the applicable JIS or IEC standard in accordance with 4.1.2 or shall have equivalent or better properties. Such a protective device shall have adequate breaking (rupturing) capacity to interrupt the maximum fault current (including short-circuit current) that can flow.		N/A
G.4.1	This requirement does not apply to connectors covered in Clauses G.4.2 and G.4.2A.		N/A
G.4.2	Mains connectors, mains plugs and socket-outlets shall comply with JIS C 8283 series, JIS C 8285, IEC 60309 series, JIS C 8282 series, JIS C 8300, JIS C 8303, or have equivalent or better properties. A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286. Construction shall prevent mechanical stress not to transmit to the soldering part of appliance inlet terminal. When an equipment is rated not more than 125 V and all of the following are met, Type C14 and C18 appliance inlet complying with JIS C 8283-3 can be considered as rated 15 A. – The temperature of appliance inlet does not exceed the value specified in JIS C 8283-1 under the most unfavourable normal operating condition as specified in Clause B.2.1. – "Use only designated cord set attached in this equipment" or equivalent text is described in the operating instruction. If the cord set is not provided in the package of the equipment, suitable information regarding to the cord set is described in the operating instruction.		N/A
G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively		N/A
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.		N/A
G.7.2 Table G.7	Cross-sectional area of equipment rated up to and including 3 A shall be 0.75 mm^2.		N/A

ATTACHMENT to TRF IEC62368_1E			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.6.1 Table G.9	The cross-sectional area of mains cords according to JIS C 3010 may comply with relevant Japanese wiring regulation. For cables other than those complying with JIS C 3662 series or JIS C 3663 series, the terminals shall be suitable for the size of the intended cables.		N/A

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT **IEC 62368-1** **CHINA NATIONAL DIFFERENCES** (**AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT -PART 1: SAFETY REQUIREMENTS**)			
Differences according to ..... :	GB 4943.1-2022		
TRF template used:..... :	IECEE OD-2020-F3, Ed. 1.1		
Attachment Form No. ..... : **Attachment Originator**..... : **Master Attachment**..... :	CN_ND_IEC62368_1E CQC Dated 2022-12-01		
Copyright © 2020 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.			
	National Differences		P
4.1.2	**Use of components** Add a paragraph: A component used shall comply with related requirements corresponding altitude of the equipment.		P
4.11	Add clause 4.11,as follows: Protection in PRIMARY CIRCUITS against overcurrent short-circuits and earth faults shall be provided as an integral part of the equipment except the device shall meet the all requirement of Fault conditions. If pluggable equipment type B or permanently connected equipment depends on protective devices outside the equipment for protection, this shall be stated in the installation instructions of the equipment, with requirements for short-circuit protection, over-current protection ,or both if necessary.		P
5.3.2.2	**Contact requirements** Amend the 2nd paragraph of table 8 to be: For equipment intended to be used at altitude of 2000m to 5000m, the values in this table are multiplied by the multiplication factor corresponding altitude of 5000m.	3000m considered.	P

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.2.5	**Multiplication factors for altitudes higher than 2 000 m above sea level** Amend the 1st paragraph to be: For equipment to be operated at more than 2000 m above sea level and up to 5000m above sea level, the minimum CLEARANCE in tables 10,11 and 14,and resistance test voltages required in table 15, shall meet the requirements of 5000 m above sea level, This is multiplied by the multiplication factor corresponding altitude of 5000m in table 16. For equipment to be used at equal or less than 2000 m above sea level, the minimum CLEARANCE in tables 10, 11 and 14, and resistance test voltages required in table 15, shall meet the requirements of 2000 m above sea level. This is multiplied by the multiplication factor corresponding altitude of 2000m in table 16. Delete note 2 of Clause 5.4.2.5.	Comply with altitude 3000m.	P
5.4.5.1	**General** Delete the 2nd paragraph of Clause 5.4.5.1: This test does not apply to equipment where one antenna terminal on the equipment is connected to earth in accordance with 5.6.7. Add the following: The Insulation resistance between CATV antenna coaxial sockets and protective earth of apparatus shall comply with BASIC INSULATION. If it's possible that CLASS II apparatus with CATV antenna coaxial sockets connect with protective earth of another CLASS I apparatus by other terminals, the insulation resistance between them shall comply with BASIC INSULATION as well. If antenna cable separated from the protective earth before connection to the apparatus, there is no requirements of Insulation resistance between them but F.4 requirements shall be meet. *Del*ete "NOTE" of Clause 5.4.5.1	Considered. See main report.	P

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.8	**Humidity conditioning** Amend clause 5.4.8 as follows : The humidity conditioning is conducted for 120 h in a cabinet or room containing air with ambient temperature (40±2) °C and a relative humidity of (93±3)%. During this conditioning, the component or subassembly is not energized. For equipment not to be operated at tropical climatic conditions, humidity conditioning is conducted for 48 h in a cabinet or room containing air with a relative humidity of (93±3) %. The temperature of the air, at all places where samples can be located, is maintained within 2 °C of any convenient value between 20 °C and 30 °C such that condensation does not occur. Add note: For equipment to be operated at 2000 m - 5000m above sea level, assessment and requirement of humidity conditioning for Insulation material properties are considered. Pre-processing conditions and requirements below 2000m can be used until additional data is available.	Considered. See main report.	P
6.4.9 Y.4.3	Delete references to ASTM and NEMA.		N/A
6.5.1	**General requirements** Delete the text of the Note “Wire complying with UL 2556 VW-1 is considered to comply with these requirements”.		N/A
F.1	Amend the second paragraph of annex F.1 to be: Unless symbols are used or otherwise specified, safety related equipment markings, instructions, and instructional safeguards shall be in normative Chinese.	Must be considered when market to the country.	--

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
F.2.2	After the first paragraph of annex F.2.2 ,add the following: For apparatus intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording or a symbol shown below shall fixed to the equipment at readily visible place. "Only used at altitude not exceeding 2000m."  For apparatus intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording or a symbol shown below shall fixed to the equipment at readily visible place. "Only used in not-tropical climate regions."  If only symbol used, the explanation of the symbol shall be contained in the instruction manual. The statements above shall be given in a language acceptable to the regions where the apparatus is intended to be used.	Must be considered when market to the country.	--
F.3.3.4	After the last paragraph, Added: …for single rated voltage, “220 V” or three-phase “380V” shall be marked only. For a rating voltage range, 220 V or three-phase 380V shall be covered. For multiple rated voltages, one of them shall be 220 V or three-phase 380V and which default setting from manufacture shall be 220 V or three-phase 380V as well.	100-240V~	P
F.3.3.5	After the last paragraph, Added: Rated frequency shall be 50Hz or frequency range shall cover 50Hz.	50-60Hz	P
F.4	**Instructions** Added: – For apparatus incorporating antenna coaxial sockets which is non-separated with CATV network, a warning wording or a similar shall be given in the instruction manual: “A CATV cable intended to be connected to apparatus shall be separated with the protective earth of the apparatus, otherwise fire hazard might be caused.”		N/A
F.5	**Instructional safeguards** In table F.2 ， change 230V to 220V， change 400Y/230V 3Ø to 380 Y/220 V 3Ø		N/A

IEC 62368_1E ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	Amend clause G.4.2 as follows : Plugs connected to the MAINS in apparatus shall comply with GB/T 1002,GB/T 1003,GB/T 2099.1 or GB/T11918（All parts） series. Appliance coupler shall comply with GB/T 17465（All parts） series or GB/T 11918（All parts） series.		P
	Special national conditions (if any)		
0.12	Add clause 0.12 Description of relevant information.		P
1	GB 4943.1-2022 applies to equipment used at altitudes not exceeding 5000m above sea level, For apparatus intended to be used at altitude not exceeding 2000m, The requirements can be appropriately reduced, but warning instructions shall be provided.. Revise the sixth paragraph of 1 as: In addition to specified by the manufacturer, this document assumes a maximum altitude of 5000m	3000m	P
B.2.6.1	Amend T_{ma} as follows: T_{ma} is the maximum ambient temperature permitted by the manufacturer's specification, or 35 °C, whichever is greater. Add note 1: For equipment not to be operated at tropical climatic conditions, T_{ma} is the maximum ambient temperature permitted by the manufacturer's specification, or 25 °C, whichever is greater. Add note 2: For equipment to be operated at 2000m-5000m above sea leave, its temperature test conditions and temperature limits are under consideration. temperature test conditions and temperature limits below 2000m can be used until additional data is available.	See main report.	P
Annex Z **(normative)**	Added annex Z: Instructions of the new safety warning labels.	Must be considered when market to the country.	--
Annex AA (informative)	Added annex AA: Illustration relative to safety explanation in normative Chinese, Tibetan, Mongolian, Zhuang Language and Uighur.	Must be considered when market to the country.	--

ATTACHMENT TO TEST REPORT

IEC 62368-1
SINGAPORE NATIONAL DIFFERENCES
AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT - PART 1: SAFETY REQUIREMENTS

Differences according to ..... :	Special National Conditions
TRF template used:.....:	IECEE OD-2020-F3, Ed. 1.1
Attachment Form No. ..... :	SG_ND_IEC62368_1E
Attachment Originator..... :	Intertek Testing Services (Singapore) Pte Ltd
Master Attachment..... :	2022-07-08

Copyright © 2022 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.

	National Differences		P
	Not Applicable		
Chapter 4.2	**Special national conditions (if any)** Controlled goods under the Consumer Protection (Safety Requirements) Registration Scheme (CPS) are required to be tested to additional requirements stipulated by the Consumer Product Safety Office (CPSO) of Enterprise Singapore in Chapter 7 of the CPS information booklet. The CPS information booklet is updated on an ongoing basis. At the point of testing, refer to the latest copy of the CPS information booklet for the minimum edition of standard to apply for testing of products under the CPS scheme and any new requirements. Link to CPS information booklet: https://www.consumerproductsafety.gov.sg/files/cps-info-booklet.pdf		P
Clause 1	All appliances must be tested to 230 VAC, 50 Hz.	Tested within the range.	P
4	Appliance fitted with voltage selector shall be tested as follows: Connect appliance to 230 VAC mains with voltage selector switch to settings not suitable for operation at 230 VAC.	No voltage selector.	N/A

5	All appliances (with tropical test requirements in applicable Standards) shall comply with the tropical condition test as stated in the relevant IEC Standards.	Must be checked when market into the country.	—
7	All Class I appliances must be fitted with 3-pin mains plugs that are registered with the CPSO.	Must be checked when market into the country.	—
8	a) All Class II appliances must be fitted with 2-pin mains plug complying with EN 50075. b) Class II appliances that are fitted with 3-pin mains plugs must use plugs that are registered with the CPSO.	See main report.	P
9	Detachable power cord set must be listed in the test report critical component list.		N/A
14	AC Adaptor incorporated with 13A socket-outlet to be tested to additional tests clauses 13, 17 and 18 of SS 145 Part 3: 2020.		N/A
15	Supplier who is supplying AC adaptors with detachable interchangeable plug pins must include with its products, written instructions to inform customer on the type of detachable interchangeable plug pins that are approved and suitable to use in Singapore. These instructions are to be submitted to the Conformity Assessment Body for verification when applying for Certificate of Conformity.	Must be checked when market into the country.	—
16	For AC Adaptors supplied together with Personal Mobility Devices: 1. Registered Supplier to declare the model of the AC adaptor that is to be used with/ bundled together with the PMDs; 2. Registered Supplier to provide valid IEC 60950-1 or IEC 62368-1 test reports for certification and registration of the declared AC adaptor under the CPS scheme; and 3. Registered Supplier to provide the UL 2272 test report as supporting document, showing that the listed AC adaptor in the UL 2272 test report is the model declared to be used with/ bundled together with the PMDs.		N/A
18	CD/ DVD ROMs (used in personal computers) to have test certificate showing that CD/DVD ROM drive has complied with IEC 60825- 1.		N/A
19	Modem card incorporated in the personal computer must be tested at set level (sub-clauses 5.1 & 6 of IEC 60950) or at component level.		N/A

20	Powerline Ethernet Adaptor incorporated with 13A socket-outlet, to be tested to additional test clauses 13, 17 & 18 of SS 145 Part 3: 2020.	Not used.	N/A
	Other additional requirements which may be included in Chapter 7 of the information booklet in ongoing basis at the time of testing.	No powerline Ethernet Adaptor.	N/A