TEST REPORT

Product Name	:	**paper shredder**
Model Number	:	**PN415D, PN310D, PN210D, ES531546AAA, PNxyyD, PN3bbD,PNzwwD**

Prepared For:	**NINGBO WONGHING INTELLIGENT MANUFACTURING CO.,LTD** **Zhengjia 17 House Settlement, XiePu ZhenHai, Ningbo, Zhejiang, 315203, P.R.China**
Prepared By:	**EMTEK(NINGBO) CO.,LTD.** **No. 8, Building 8, Lane 216, Qingyi Road, High-tech Zone, Ningbo City, Zhejiang Province. China** **Tel: +86-574-2790 7998** **Fax: +86-574-2772 1538**

Date of Test	:	**April 01, 2024 to April 12, 2024**
Date of Report	:	**April 15, 2024**
Report Number	:	**ENB2404010172S00401R**

TEST REPORT

IEC 62368-1

Audio/video, information and communication technology equipment

Part 1: Safety requirements

Report Number.....:	ENB2404010172S00401R
Compiled by (+ signature) .....:	Haoyun Zhang
Approved by (+ signature) .....:	Jimmy Qian
Date of issue.....:	April 15, 2024
Total number of pages.....:	89 pages

Testing Laboratory.....:	EMTEK (NINGBO) CO., LTD.
Address.....:	No. 8, Building 8, Lane 216, Qingyi Road, High-tech Zone, Ningbo City, Zhejiang Province. China
Testing location / address.....:	Same as above

Applicant's name.....:	NINGBO WONGHING INTELLIGENT MANUFACTURING CO.,LTD
Address.....:	Zhengjia 17 House Settlement, XiePu ZhenHai, Ningbo, Zhejiang, 315203, P.R.China

Test specification:	
Standard.....:	IEC 62368-1:2018 (Third Edition)
	J 62368-1:2023
Test procedure.....:	PSE report
Non-standard test method.....:	N/A

Test Report Form No.....:	IEC/EN 62368_1E
Test Report Form(s) Originator.....:	EMTEK
Master TRF.....:	2020-12

Test item description.....:	Paper Shredder
Trade Mark.....:	N/A
Manufacturer.....:	NINGBO WONGHING INTELLIGENT MANUFACTURING CO.,LTD
Address.....:	Zhengjia 17 House Settlement, XiePu ZhenHai, Ningbo, Zhejiang, 315203, P.R. China
Model/Type reference.....:	PN415D, PN310D, PN210D, ES531546AAA, PNxyyD, PN3bbD,PNzwwD
Ratings.....:	Input: 100V~, 50/60Hz, 2.7A, 250W, Class II

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

- Japan National Differences

-Attachment I: Photos

Summary of testing:

All tests were performed on model PN415D, PN310D, PN210D and passed.

Summary of compliance with National Differences:

Japan National Differences

☒ **The product fulfils the requirements of** ___ J 62368-1:2023_____ **(insert standard number and edition and delete the text in parenthesis or delete the whole sentence if not applicable)**

Copy of marking plate:

Remark:
The label of other models are same with model PN310D, only model name different.
Note:
- The above markings are the minimum requirements required by the safety standard. For the final production, the additional markings which do not give rise to misunderstanding may be added.

TEST ITEM PARTICULARS:	
Classification of use by.....:	☒ Ordinary person ☐ Instructed person ☐ Skilled person ☒ Children likely to be present
Supply Connection.....:	☒ AC Mains ☐ DC Mains ☐ External Circuit - 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 ☐ mating connector ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☐ mating connector ☐ other:__ __
Considered current rating of protective device as part of building or equipment installation.....:	__16__ A; Installation location: ☐ building ☐ equipment ☐ other:____
Equipment mobility.....:	☒ movable ☐ hand-held ☐ transportable ☐ stationary ☐ for building-in ☐ direct plug-in ☐ rack-mounting ☐ wall-mounted
Over voltage category (OVC) .....:	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other: ____
Class of equipment .....:	☐ Class I ☒ Class II ☐ Class III ☐ Class II with functional earthing ☐ Not classifed
Access location .....:	☐ restricted access area ☒ N/A
Pollution degree (PD) .....:	☐ PD 1 ☐ PD 2 ☒ PD 3
Manufacturer's specified maxium operating ambient.....:	__25__°C
IP protection class .....:	☒ IPX0 ☐ IP____

Power Systems .....:	☒ TN ☐ TT ☐ IT - ____ V_{L-L} ☐ DC mains ☐ N/A
Altitude during operation (m) ..... :	☒ 2000 m or less ☐ ____ m
Altitude of test laboratory (m) .....:	☒ 2000 m or less ☐ ____ m
Mass of equipment (kg) .....:	☒ __Approx. 8.1__ kg
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing:	
Date of receipt of test item.....:	April 01, 2024
Date (s) of performance of tests.....:	April 01, 2024 to April 12, 2024

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:

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

Name and address of factory (ies).....:	NINGBO WONGHING INTELLIGENT MANUFACTURING CO.,LTD Zhengjia 17 House Settlement, XiePu ZhenHai, Ningbo, Zhejiang, 315203, P.R. China

GENERAL PRODUCT INFORMATION:

Product Description –

1. The equipment is a paper shredder for the use as information technology equipment. Pollution degree of paper shredder was considered as Pollution degree 3.

2. The operating time is 8 minutes On, 50 minutes Off.

3. Operating ambient temperature (Tma): 25 °C.

4. The equipment has the function to shred papers, CD and cards.

Model Differences –

1. The model ES531546AAA and PN310D is the same product, only model name different.

2.Model list:

Model name	PNxyyD	PN3bbD	PNzwwD
Motor	DC motor (WX3445D100)		
Blade type	Cross cut	Micro cut	Micro cut
Max.Pappers caoacity	15	10	10
Remark: "x" can be 4 to 6 which indicates customer code; letter "z"can be 1 to 2 which indicates			

customer code. Letter “ww” denote micro-cut units and can be 01 to 10 which indicates the amount of paper shredded; “bb” denote micro-cut units and can be 01 to 10 which indicates the amount of paper shredded. “yy” denote cross-cut units and can be 01 to 15 which indicates the amount of paper shredded.
Additional application considerations – (Considerations used to test a component or sub-assembly) – N/A

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: The circuit connected to AC mains	Assumed to be accessible by ordinary person in end product	N/A	N/A	Enclosure, See 5.4.2, 5.4.3, 5.4.4
ES3: Stored charge on primary capacitor (EMC-C1)	Assumed to be accessible by ordinary person in end product	N/A	N/A	See 5.5.2.2
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: All components/ circuits inside the equipment enclosure	All combustible materials within equipment fire enclosure	1, No ignition occurred. 2, No parts exceeding 90% of its spontaneous ignition temperature.	1, PCB is complied with min. V-0 material. 2, All other components: at least V-2 except for mounted on min. V-1 material or small parts of combustible material. 3, V-0 Enclosures	N/A
PS3	PCB	See 6.3	V-0 or better	N/A
PS3	Enclosure	See 6.3	V-0 or better	N/A
PS3	Internal wire	See 6.3	VW-1 or better	N/A
PS3	Power supply cord	See 6.3	VW-1 or better	N/A
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Sharp edges	Ordinary person	N/A	N/A	N/A
MS2: 8.1kg	Ordinary person	N/A	N/A	Test according with Clause 8.6.3 and passed.

9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS3: Internal parts/circuits	Internal components and parts	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: Low power LED used as indicator	Ordinary person	N/A	N/A	N/A
Supplementary information: "B" – Basic Safeguard; "S" – Supplementary Safeguard; "R" – Reinforced Safeguard				

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

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Clause	Requirement + Test	Result - Remark	Verdict

4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies	(See appended table 4.1.2)	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment	P
4.1.3	Equipment design and construction	Safeguards are provided to reduce the likelihood of injury or, in the case of fire, property damage	P
4.1.4	Specified ambient temperature for outdoor use (°C) ..... :		N/A
4.1.5	Constructions and components not specifically covered		N/A
4.1.8	Liquids and liquid filled components (LFC)		N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness		P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Clause T.5)	P
4.4.3.3	Drop tests	(See Annex T.7)	N/A
4.4.3.4	Impact tests	(See Annex T.6)	P
4.4.3.5	Internal accessible safeguard tests	See Annex T.3)	P
4.4.3.6	Glass impact tests		N/A
4.4.3.7	Glass fixation tests		N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests	(See Annex T.8)	P
4.4.3.9	Air comprising a safeguard	Considered, but no such barrier or enclosure provided	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		N/A
4.4.5	Safety interlocks	(See Annex K)	P
4.5	**Explosion**		P

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Clause	Requirement + Test	Result - Remark	Verdict

4.5.1	General		P
4.5.2	No explosion during normal/abnormal operating condition	No explosion occurred under normal and abnormal operating conditions.	P
	No harm by explosion during single fault conditions	No explosion caused harm during single fault conditions and the equipment comply with the relevant parts of this standard.	P
4.6	**Fixing of conductors**		P
	Fix conductors not to defeat a safeguard		P
	Compliance is checked by test.....:		P
4.7	**Equipment for direct insertion into mains socket–outlets**		N/A
4.7.2	Mains plug part complies with relevant standard... :		N/A
4.7.3	Torque (Nm)..... :		N/A
4.8	**Equipment containing coin/button cell batteries**		N/A
4.8.1	General		N/A
4.8.2	Instructional safeguard..... :		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	**Likelihood of fire or shock due to entry of conductive object**		P
4.10	**Component requirements**		P
4.10.1	Disconnect Device		P
4.10.2	Switches and relays		P

5	**ELECTRICALLY-CAUSED INJURY**		P
5.2	**Classification and limits of electrical energy sources**		P
5.2.2	ES1, ES2 and ES3 limits	All circuits are considered as ES3	P

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Clause	Requirement + Test	Result - Remark	Verdict

5.2.2.2	Steady-state voltage and current limits..... :	See above	P
5.2.2.3	Capacitance limits..... :	(See sub-clause 5.5.2.2)	P
5.2.2.4	Single pulse limits.....:		N/A
5.2.2.5	Limits for repetitive pulses.....:		N/A
5.2.2.6	Ringing signals		N/A
5.2.2.7	Audio signals		N/A
5.3	**Protection against electrical energy sources**		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	See below	P
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits		P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards	No internal circuit can be accessed checked by test as below.	P
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements	Test probe can't contact internal live parts.	P
	Test with test probe from Annex V	Checked by Figure V.1 and Figure V.2	—
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		N/A
5.4	**Insulation materials and requirements**		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Material is non-hygroscopic		P
5.4.1.4	Maximum operating temperature for insulating materials..... :	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degrees.....:	Pollution degree III	P
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling test		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage..... :		P
5.4.1.9	Insulating surfaces		P

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		P
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		N/A
	Clearances in circuits connected to AC Mains, Alternative method		N/A
5.4.2.2	Procedure 1 for determining clearance		N/A
	Temporary overvoltage .....:		—
5.4.2.3	Procedure 2 for determining clearance		P
5.4.2.3.2.2	a.c. mains transient voltage..... :	1500V peak for Overvoltage Cat. II	—
5.4.2.3.2.3	d.c. mains transient voltage ..... :	No such transient voltage	—
5.4.2.3.2.4	External circuit transient voltage.....:	No such transient voltage	—
5.4.2.3.2.5	Transient voltage determined by measurement.....:		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test .....:		N/A
5.4.2.5	Multiplication factors for clearances and test voltages .....:		N/A
5.4.2.6	Clearance measurement.....:		N/A
5.4.3	Creepage distances		P
5.4.3.1	General		P
5.4.3.3	Material group.....:	IIIb	—
5.4.3.4	Creepage distances measurement.....:	(See appended table 5.4.3)	P
5.4.4	Solid insulation	See below	P
5.4.4.1	General requirements		P
5.4.4.2	Minimum distance through insulation ..... :	(See appended table 5.4.2)	P
5.4.4.3	Insulating compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.4.6.3	Non-separable thin sheet material		N/A
	Number of layers (pcs) ..... :		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material..... :		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P, K_R, d, V_{PW} (V)..... :		N/A
	Alternative by electric strength test, tested voltage (V), K_R..... :		N/A
5.4.5	Antenna terminal insulation		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		P
	Relative humidity (%), temperature (°C), duration (h) ..... :	93%, 25°C, 48h	—
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..... :	Compliance was checked immediately following temperature test in 5.4.1.4.	P
5.4.9.2	Test procedure for routine test	No routine tests considered. To be considered during the relevant national approval.	N/A
5.4.10	Safeguards against transient voltages from external circuits	No such external circuits.	N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test..... :		N/A
5.4.10.2.3	Steady-state test..... :		N/A
5.4.10.3	Verification for insulation breakdown for impulse test ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.4.11	Separation between external circuits and earth	No such connections for external circuit applied within the equipment	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V).....:		—
	Nominal voltage U_{peak} (V).....:		—
	Max increase due to variation ΔU_{sp} .....:		—
	Max increase due to ageing ΔU_{sa} .....:		—
5.4.11.3	Test method and compliance.....:		N/A
5.4.12	Insulating liquid		N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid.....:		N/A
5.4.12.3	Compatibility of an insulating liquid.....:		N/A
5.4.12.4	Container for insulating liquid..... :		N/A
5.5	**Components as safeguards**		P
5.5.1	General	See the following details.	P
5.5.2	Capacitors and RC units	EMC-C1 complied with IEC 60384-14.	P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....:	(See appended table 5.5.2.2)	P
5.5.3	Transformers		N/A
5.5.4	Optocouplers		N/A
5.5.5	Relays		P
5.5.6	Resistors		N/A
5.5.7	SPDs		N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable..... :		N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (Ma)..... :		—
5.6	**Protective conductor**		N/A
5.6.2	Requirement for protective conductors		N/A
5.6	**Protective conductor**		N/A

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5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm^2) ..... :		—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm^2)..... :		—
5.6.4.2	Protective current rating (A)..... :		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)..... :		N/A
	Terminal size for connecting protective bonding conductors (mm)..... :		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective bonding system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method..... :		N/A
5.6.6.3	Resistance (Ω) or voltage drop..... :		N/A
5.6.7	Reliable connection of a protective earthing conductor		N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm^2)..... :		N/A
	Class II with functional earthing marking ..... :		N/A
	Appliance inlet cl & cr (mm)..... :		N/A
5.7	**Prospective touch voltage, touch current and protective conductor current**		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current	Figure 4 of IEC 60990 is used in determination of limits of ES1.	P
5.7.2.2	Measurement of voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		P

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5.7.4	Unearthed accessible parts..... :	(See appended Table 5.7.4)	P
5.7.5	Earthed accessible conductive parts.....:		N/A
5.7.6	Requirements when touch current exceeds ES2 limits		N/A
	Protective conductor current (Ma).....:		N/A
	Instructional Safeguard.....:		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits		N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	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 appended table 6.2.2)	P
6.2.3.1	Arcing PIS ..... :	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS .....:	(See appended table 6.2.3.2)	P
6.3	**Safeguards against fire under normal operating and abnormal operating conditions**		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials.....:	(See appended table B.1.5 and B.3)	P
	Combustible materials outside fire enclosure.....:		N/A
6.4	**Safeguards against fire under single fault conditions**		P
6.4.1	Safeguard method	Control fire spread	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

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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		N/A
6.4.5.2	Supplementary safeguards		N/A
6.4.6	Control of fire spread in PS3 circuits	Components other than PCB and wires are: - mounted on PCB rated V-1 or better, or - made of V-2/VTM-2 or better. (See appended tables 4.1.2 and Annex G)	P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	Equipment enclosure was evaluated for fire enclosure	P
6.4.8.2	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	Fire enclosure is made of V-0 class material and the available power of the equipment does not exceed 4000W	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings	Fire enclosure with top and bottom openings.	P
6.4.8.3.2	Fire barrier dimensions	No such fire barrier	N/A
6.4.8.3.3	Top openings and properties	Openings only for paper entrance, there are no PIS located below these openings.	P
	Openings dimensions (mm).....:		N/A
6.4.8.3.4	Bottom openings and properties	Top openings not apply to openings above a PIS as shown in Figure 4	P
	Openings dimensions (mm).....:		N/A
	Flammability tests for the bottom of a fire enclosure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructional Safeguard.....:		N/A
6.4.8.3.5	Side openings and properties	No openings	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.....:		N/A
6.5	Internal and external wiring		P
6.5.1	General requirements	The internal wires are complied with UL 758 standard, which test method and testing condition equivalent to IEC/EN 60695-11-21	P
6.5.2	Requirements for interconnection to building wiring .....:		N/A
6.5.3	Internal wiring size (mm2) for socket-outlets.....:		N/A
6.6	Safeguards against fire due to the connection to additional equipment		N/A

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

8	**MECHANICALLY-CAUSED INJURY**		P
8.2	**Mechanical energy source classifications**		P
8.3	**Safeguards against mechanical energy sources**		P
8.4	**Safeguards against parts with sharp edges and corners**		P
8.4.1	Safeguards	Edges and corners of product are rounded and smooth	P
	Instructional Safeguard.....:		N/A
8.4.2	Sharp edges or corners		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

8.5	**Safeguards against moving parts**		P
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts		N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		P
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard..... :	Instructional safeguard for Moving parts on enclosure surface	P
8.5.4	Special categories of equipment containing moving parts		P
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		P
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		P
8.5.4.3.1	Equipment safeguards		P
8.5.4.3.2	Instructional safeguards against moving parts..... :	Equipment used faraway from children marked in instruction.	P
8.5.4.3.3	Disconnection from the supply		P
8.5.4.3.4	Cut type and test force (N)..... :	≤90N	P
8.5.4.3.5	Compliance		P
8.5.5	High pressure lamps		N/A
	Explosion test.....:		N/A
8.5.5.3	Glass particles dimensions (mm)..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

8.6	**Stability of equipment**		P
8.6.1	General		P
	Instructional safeguard..... :	See 8.6.3	P
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		P
	Wheels diameter (mm)..... :	30mm	—
	Tilt test	No tip over.	P
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test..... :		N/A
8.7	**Equipment mounted to wall, ceiling or other structure**		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict

8.11	**Mounting means for slide-rail mounted equipment (SRME)**		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard.....:		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied..... :		N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	**Telescoping or rod antennas**		N/A
	Button/ball diameter (mm).....:		—

9	**THERMAL BURN INJURY**		P
9.2	**Thermal energy source classifications**		P
9.3	**Touch temperature limits**		P
9.3.1	Touch temperatures of accessible parts..... :	(See appended table 9.3)	P
9.3.2	Test method and compliance		P
9.4	**Safeguards against thermal energy sources**		P
9.5	**Requirements for safeguards**		P
9.5.1	Equipment safeguard	Enclosure provided to limit the transfer of thermal energy of internal parts under normal operating conditions and abnormal operating conditions.	P
9.5.2	Instructional safeguard..... :	Instructional safeguard is not required.	P
9.6	**Requirements for wireless power transmitters**		N/A
9.6.1	General		N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance.....:		N/A

10	**RADIATION**		P
10.2	**Radiation energy source classification**		P
10.2.1	General classification	Low power LED: RS1	P
	Lasers.....:		—
	Lamps and lamp systems.....:		—

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Clause	Requirement + Test	Result - Remark	Verdict

	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
	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		N/A
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, Db(A)..... :		N/A
	Unweighted RMS output voltage (Mv)..... :		N/A
	Digital output signal (Dbfs)..... :		N/A
10.6.3	Requirements for dose-based systems		N/A
10.6.3.1	General requirements		N/A
10.6.3.2	Dose-based warning and automatic decrease		N/A
10.6.3.3	Exposure-based warning and requirements		N/A
	30 s integrated exposure level (MEL30)..... :		N/A
	Warning for MEL ≥ 100 Db(A)..... :		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input		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
	Audio Amplifiers and equipment with audio amplifiers.....:	(See Annex E)	P
B.2.3	Supply voltage and tolerances	100Vac, +10%/-10%	P
B.2.5	Input test..... :	(See appended table B.2.5)	P
B.3	**Simulated abnormal operating conditions**		P
B.3.1	General	(See appended table B.3)	P
B.3.2	Covering of ventilation openings		P
	Instructional safeguard..... :		N/A
B.3.3	DC mains polarity test		N/A
B.3.4	Setting of voltage selector		N/A
B.3.5	Maximum load at output terminals		N/A
B.3.6	Reverse battery polarity		N/A
B.3.7	Audio amplifier abnormal operating conditions		N/A

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B.3.8	Safeguards functional during and after abnormal operating conditions..... :	During an abnormal operating condition that does not lead to a single fault condition, all safeguards are remained effective. After restoration of normal operating conditions, all safeguards are compliance with applicable requirements. For abnormal operating condition leads to a consequential fault, the compliance criteria of B.4.8 apply	P
B.4	**Simulated single fault conditions**		P
B.4.1	General		P
B.4.2	Temperature controlling device	No Temperature controlling device used.	N/A
B.4.3	Blocked motor test	(See appended table B.3&B.4)	P
B.4.4	Functional insulation	Short circuit	P
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.3 &B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.3 &B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards.	N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnection of passive components		P
B.4.7	Continuous operation of components		N/A
B.4.8	Compliance during and after single fault conditions ..... :	During and after a single fault condition, a class 1 or class 2 energy sources did not become a class 3 energy source. For a class 3 energy source, during and after a single fault condition, at least one safeguard continued to comply with the relevant safeguard requirements.	P

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Clause	Requirement + Test	Result - Remark	Verdict

B.4.9	Battery charging and discharging under single fault conditions	(See annex M)	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	(See appended table B.3)	N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	**General**		P
	Language ..... :	Japanese	—
F.2	**Letter symbols and graphical symbols**		P
F.2.1	Letter symbols according to IEC60027-1		P

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Clause	Requirement + Test	Result - Remark	Verdict

F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific		P
F.3	**Equipment markings**		P
F.3.1	Equipment marking locations		P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification .....:	See marking plate for details	P
F.3.2.2	Model identification .....:	See marking plate for details	P
F.3.3	Equipment rating markings	See marking plate for details	P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of the supply voltage.....:	~	P
F.3.3.4	Rated voltage.....:	100V	P
F.3.3.5	Rated frequency.....:	50/60Hz	P
F.3.3.6	Rated current or rated power.....:	2.7A, 250W	P
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings .....:		N/A
F.3.5.2	Switch position identification marking.....:		P
F.3.5.3	Replacement fuse identification and rating markings .....:	T5AL/250V	P
	Instructional safeguards for neutral fuse.....:		N/A
F.3.5.4	Replacement battery identification marking..... :		N/A
F.3.5.5	Neutral conductor terminal		N/A
F.3.5.6	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification	See below	N/A
F.3.6.1	Class I equipment	Class II apparatus	N/A
F.3.6.1.1	Protective earthing conductor terminal.....:		N/A
F.3.6.1.2	Protective bonding conductor terminals .....:		N/A
F.3.6.2	Equipment class marking..... :		P
F.3.6.3	Functional earthing terminal marking..... :		N/A
F.3.7	Equipment IP rating marking..... :		N/A
F.3.8	External power supply output marking.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

F.3.9	Durability, legibility and permanence of marking	See below	P
F.3.10	Test for permanence of markings	Conducted by rubbing the marking by hand without appreciable force for 15 s with a piece of cloth soaked with water and at a different place or on a different sample for 15 s with a piece of cloth soaked with the petroleum spirit specified the reagent grade hexane with a minimum of 85 % n-hexane. After each test, the marking remain legible, no curling and not be removable by hand.	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		P
	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	See marking on equipment and instruction	P
	j) Permanently connected equipment not provided with all-pole mains switch		N/A
	k) Replaceable components or modules providing safeguard function		N/A
	l) Equipment containing insulating liquid		N/A
	m) Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		P
G	**COMPONENTS**		P
G.1	**Switches**		P
G.1.1	General	Approved switch used.	P
G.1.2	Ratings, endurance, spacing, maximum load		P

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Clause	Requirement + Test	Result - Remark	Verdict

G.1.3	Test method and compliance		P
G.2	**Relays**		P
G.2.1	Requirements	Approved relays used.	P
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supplying power to other equipment		N/A
G.2.4	Test method and compliance		N/A
G.3	**Protective devices**		P
G.3.1	Thermal cut-offs	Approved motor protector used as thermal cut-off	P
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		P
	Thermal cut-outs tested as part of the equipment as indicated in c)		P
G.3.1.2	Test method and compliance		P
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	No PTC thermistor used as safeguard provided within the equipment.	N/A
G.3.4	Overcurrent protection devices	Fuses employed are compliance with IEC 60127-1 and IEC 60127-3	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.....:		P
G.4	**Connectors**		P
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration.....:	Mains plug complied with JIS 8303. No plugs for other countries provided.	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	**Wound components**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.1	Wire insulation in wound components	No such device	N/A
G.5.1.2	Protection against mechanical stress		N/A
G.5.2	Endurance test		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Test time (days per cycle)..... :		—
	Test temperature (°C)..... :		—
G.5.2.3	Wound components supplied from the mains		N/A
G.5.2.4	No insulation breakdown		N/A
G.5.3	Transformers		N/A
G.5.3.1	Compliance method..... :		N/A
	Position.....:		N/A
	Method of protection..... :		N/A
G.5.3.2	Insulation		N/A
	Protection from displacement of windings.....:		—
G.5.3.3	Transformer overload tests		N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding temperatures		N/A
G.5.3.3.3	Winding temperatures – alternative test method		N/A
G.5.3.4	Transformers using FIW		N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter..... :		—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation..... :		N/A
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A
G.5.3.4.7	Routine test		N/A
G.5.4	Motors		P
G.5.4.1	General requirements		P
G.5.4.2	Motor overload test conditions		P
G.5.4.3	Running overload test	(See appended table B.3)	P
G.5.4.4.2	Locked-rotor overload test	(See appended table B.3)	P

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Clause	Requirement + Test	Result - Remark	Verdict

	Test duration (days) ..... :	60 cycles	—
G.5.4.5	Running overload test for DC motors		N/A
G.5.4.5.2	Tested in the unit		N/A
G.5.4.5.3	Alternative method		N/A
G.5.4.6	Locked-rotor overload test for DC motors		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature ..... :		N/A
G.5.4.6.3	Alternative method		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage ..... :		—
G.6	**Wire Insulation**		P
G.6.1	General	The internal wire were considered not under mechanical stress and comply with G 6.1 a)	P
G.6.2	Enamelled winding wire insulation		N/A
G.7	**Mains supply cords**		P
G.7.1	General requirements	Mains supply cord is of PVC sheathed type.	P
	Type..... :	VCTFK	—
G.7.2	Cross sectional area (mm^2 or AWG)..... :	See appended table 4.1.2	P
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		P
G.7.3.2	Cord strain relief		P
G.7.3.2.1	Requirements		P
	Strain relief test force (N)..... :	100N, <2mm	P
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)..... :		P
G.7.3.2.4	Strain relief and cord anchorage material	The anchorage/bushing material of plastic, test of G.7.3.2.1 complied after test of T.8	P
G.7.4	Cord Entry	(See appended table 5.4.9.1)	P
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

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	The non-detachable power supply cord is checked by inspection and by installation test with cord of 0.75mm2 and complied with designed requierement.	P
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	**Varistors**		N/A
G.8.1	General requirements	No such device	N/A
G.8.2	Safeguards against fire		N/A
G.8.2.1	General		N/A
G.8.2.2	Varistor overload test		N/A
G.8.2.3	Temporary overvoltage test		N/A
G.9	**Integrated circuit (IC) current limiters**		N/A
G.9.1	Requirements	No such device	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

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Clause	Requirement + Test	Result - Remark	Verdict

G.11.1	General requirements	(see appended table 4.1.2) X2 Capacitor as Basic safeguard with IEC/EN 60384-14.	P
G.11.2	Conditioning of capacitors and RC units	All capacitors complied as environmental category at least 40/100/21 (21 days humidity) 40/100/56 (56 days humidity)	P
G.11.3	Rules for selecting capacitors	The selection followed with table G.9 or G.12 bridging the relevant insulation.	P
G.12	**Optocouplers**		N/A
	Optocouplers comply with IEC 60747-5-5 with specifics	No such device	N/A
	Type test voltage $V_{ini,a}$ ..... :		—
	Routine test voltage, $V_{ini,b}$ ..... :		—
G.13	**Printed boards**		P
G.13.1	General requirements	See the following details.	P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board is compliant with the minimum requirements of clearances (5.4.2) and creepage distances (5.4.3).	P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation ..... :		N/A
	Number of insulation layers (pcs) ..... :		—
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	No such device	N/A
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A

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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 device	N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test.....:		—
	Mains voltage that impulses to be superimposed on .....:		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test.....:		—
G.16.3	Capacitor discharge test.....:		N/A
H	**CRITERIA FOR TELEPHONE RINGING SIGNALS**		N/A
H.1	**General**		N/A
H.2	**Method A**		N/A
H.3	**Method B**		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) ..... :		—
H.3.1.2	Voltage (V) .....:		—
H.3.1.3	Cadence; time (s) and voltage (V) .....:		—
H.3.1.4	Single fault current (Ma):.....:		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V).....:		N/A
J	**INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION**		N/A
J.1	**General**		N/A
	Winding wire insulation.....:		—

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Clause	Requirement + Test	Result - Remark	Verdict

	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**		P
K.1	**General requirements**		P
	Instructional safeguard..... :	Micro switch used as safety interlock to shut down the power supply and stop the motor running within 2s, against unitended touching once paper bin is removed.	P
K.2	**Components of safety interlock safeguard mechanism**		P
K.3	**Inadvertent change of operating mode**		P
K.4	**Interlock safeguard override**		P
K.5	**Fail-safe**		P
K.5.1	Under single fault condition		P
K.6	**Mechanically operated safety interlocks**		P
K.6.1	Endurance requirement		P
K.6.2	Test method and compliance..... :		P
K.7	**Interlock circuit isolation**		P
K.7.1	Separation distance for contact gaps & interlock circuit elements		P
	In circuit connected to mains, separation distance for contact gaps (mm)..... :		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm)..... :		N/A
	Electric strength test before and after the test of K.7.2..... :		N/A
K.7.2	Overload test, Current (A)..... :		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	**DISCONNECT DEVICES**		P
L.1	**General requirements**	AC plug on the power supply cord used to disconnect from AC mains.	P
L.2	**Permanently connected equipment**		N/A
L.3	**Parts that remain energized**	When AC plug is disconnected no remaining voltage in the equipment.	P

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Clause	Requirement + Test	Result - Remark	Verdict

L.4	**Single-phase equipment**	The mains plug disconnects both poles simultaneously.	P
L.5	**Three-phase equipment**		N/A
L.6	**Switches as disconnect devices**		N/A
L.7	**Plugs as disconnect devices**		P
L.8	**Multiple power sources**		N/A
	Instructional safeguard..... :		N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		N/A
M.1	**General requirements**		N/A
M.2	**Safety of batteries and their cells**		N/A
M.2.1	Batteries and their cells comply with relevant IEC standards..... :		N/A
M.3	**Protection circuits for batteries provided within the equipment**		N/A
M.3.1	Requirements		N/A
M.3.2	Test method		N/A
	Overcharging of a rechargeable battery		N/A
	Excessive discharging		N/A
	Unintentional charging of a non-rechargeable battery		N/A
	Reverse charging of a rechargeable battery	Battery cannot be reversed Charging per its structure.	N/A
M.3.3	Compliance		N/A
M.4	**Additional safeguards for equipment containing a portable secondary lithium battery**		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance.....:	(See appended table M.4)	N/A
M.4.3	Fire enclosure.....:	V-0 enclosure provide	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

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M.5	**Risk of burn due to short-circuit during carrying**		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
M.6	**Safeguards against short-circuits**		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance		N/A
M.7	**Risk of explosion from lead acid and NiCd batteries**		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
	Calculated hydrogen generation rate..... :		N/A
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m^3/h).....:		N/A
M.7.3	Ventilation tests		N/A
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%).....:		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate.....:		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%).....:		N/A
M.7.4	Marking.....:		N/A
M.8	**Protection against internal ignition from external spark sources of batteries with aqueous electrolyte**		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_Z (m^3/s)..... :		—
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..... :	Mentioned in user manual	N/A
N	**ELECTROCHEMICAL POTENTIALS**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Material(s) used..... :		—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		P
	Value of X (mm)..... :	Considered.	—
P	**SAFEGUARDS AGAINST CONDUCTIVE OBJECTS**		P
P.1	General		P
P.2	**Safeguards against entry or consequences of entry of a foreign object**		P
P.2.1	General	Equipment comply with the requirements of P.2.2	P
P.2.2	Safeguards against entry of a foreign object	No opening except for paper entrance and exit openings.	P
	Location and Dimensions (mm) ..... :	Max. Dimensions<1mm	—
P.2.3	Safeguards against the consequences of entry of a foreign object	Safety interlock as safeguard and no PIS around openings	P
P.2.3.1	Safeguard requirements	Entrance and exit openings, there are no bare conductive parts located within the projected volume.	P
	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
P.4	**Metallized coatings and adhesives securing parts**		N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T_C (°C)..... :		—
	Duration (weeks)..... :		—
Q	**CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING**		N/A
Q.1	**Limited power sources**	(See append table Annex Q.1)	N/A
Q.1.1	Requirements		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A

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	c) Regulating network limited output		N/A
	d) Overcurrent protective device limited output		N/A
	e) IC current limiter complying with G.9		N/A
Q.1.2	Test method and compliance.....:		N/A
	Current rating of overcurrent protective device (A) .....:		N/A
Q.2	**Test for external circuits – paired conductor cable**		N/A
	Maximum output current (A) ..... :		N/A
	Current limiting method.....:		—
R	**LIMITED SHORT CIRCUIT TEST**		N/A
R.1	**General**		N/A
R.2	**Test setup**		N/A
	Overcurrent protective device for test..... :		—
R.3	**Test method**		N/A
	Cord/cable used for test..... :		—
R.4	**Compliance**		N/A
S	**TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
S.1	**Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W**		N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C)..... :		—
	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

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	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 .....:**		N/A
T.5	**Steady force test, 250 N .....:**	(See appended table T.5)	P
T.6	**Enclosure impact test**	(See appended table T.6)	P
	Fall test		P
	Swing test		P
T.7	**Drop test..... :**		N/A
T.8	**Stress relief test.....:**	(See appended table T.8)	P
T.9	**Glass Impact Test.....:**		N/A
T.10	**Glass fragmentation test**		N/A
	Number of particles counted.....:		N/A
T.11	**Test for telescoping or rod antennas**		N/A
	Torque value (Nm) .....:		N/A
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	No hazards can be accessible	P
V.1.2	Surfaces and openings tested with jointed test probes		P

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V.1.3	Openings tested with straight unjointed test probes		P
V.1.4	Plugs, jacks, connectors tested with blunt probe		N/A
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		P
V.2	**Accessible part criterion**		P
X	**ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)**		N/A
	Clearance.....:		N/A
Y	**CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES**		N/A
Y.1	**General**		N/A
Y.2	**Resistance to UV radiation**		N/A
Y.3	**Resistance to corrosion**		N/A
Y.3	**Resistance to corrosion**		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by.....:		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure.....:		N/A
Y.3.5	Compliance		N/A
Y.4	**Gaskets**		N/A
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests		N/A
	Alternative test methods.....:		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means		N/A
Y.5	**Protection of equipment within an outdoor enclosure**		N/A
Y.5.1	General		N/A
Y.5.2	Protection from moisture		N/A
	Relevant tests of IEC 60529 or Y.5.3.....:		N/A
Y.5.3	Water spray test		N/A
Y.5.4	Protection from plants and vermin		N/A
Y.5.5	Protection from excessive dust		N/A

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Y.5.5.1	General		N/A
Y.5.5.2	IP5X equipment		N/A
Y.5.5.3	IP6X equipment		N/A
Y.6	**Mechanical strength of enclosures**		N/A
Y.6.1	General		N/A
Y.6.2	Impact test..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.2	TABLE: Classification of electrical energy sources						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type[1)]	Additional Info [2)]	
110Vac, 60Hz	All circuit	Normal	110V	--	SS	--	ES3 (declared)
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.							

5.2.2.3 - Capacitance Limits						
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
1	110V/60Hz	Line to Neutral	Normal	EMC-C1: 470	156	ES3
			Abnormal	--	--	
			Single fault – SC/OC	--	--	

5.2.2.4 - Single Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

5.2.2.5 - Repetitive Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Off time (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

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Test Conditions:

Normal –

Abnormal -

Supplementary information: SC=Short Circuit, OC=Short Circuit

5.4.1.8	**TABLE: Working voltage measurement**			N/A
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments
--	--	--	--	--
--	--	--	--	--
Supplementary information:				

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

5.4.1.10.3	**TABLE: Ball pressure test of thermoplastics**			P
Allowed impression diameter (mm)..... :	≤ 2 mm			—
Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)
PCB	1)	Min.2.5	125	0.89
Enclosure	1)	Min.2.5	75	1.02
Motor support plastic	1)	Min.2.5	125	0.97
Supplementary information: 1) See appended tables 4.1.2 for detail.				

5.4.2, 5.4.3	**TABLE: Minimum Clearances/Creepage distance**							P
Clearance (cl) and creepage distance (cr) at/of/between:	U_p (V)	U_{rms} (V)	Freq [1] (Hz)	Required cl (mm)	cl (mm)	E.S. [2] (V)	Required cr (mm)	cr (mm)

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Primary trace of different polarity before F1 (BI)	210	100	<30	1.27	3.8	--	2.2	3.8
Primary trace under Fuse	210	100	<30	1.27	2.7	--	2.2	2.7
Power PCB board to plastic enclosure	210	100	<30	2.54	>10.0	--	4.4	>10.0
Metal part of motor to blade	210	100	<30	2.54	>5.8	--	4.4	>5.8
Supplementary information:								
1) Only for frequency above 30 kHz 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied)								

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	210	See table 4.1.2	0.4	Min.3.0
LED	210	--	0.4	>0.4
Supplementary information:				

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

5.4.9	**TABLE: Electric strength tests**		P
Test voltage applied between:	Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No
L to N (with fuse opened)	DC	1500V Peak	No

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Live parts to enclosure	DC	2500V Peak	No
Live parts to blade	DC	2500V Peak	No
Unit primary to switch	DC	2500V Peak	No
Supplementary information:			

5.5.2.2	TABLE: Stored discharge on capacitors				P
Location	Supply voltage (V)	Operating and fault condition [1)]	Switch position	Measured voltage (Vpk)	ES Class
L/N	110V, 60Hz	Normal	switch on	14	ES1
L/N	110V, 60Hz	EMC_R1 OC	switch on	16	ES1
Supplementary information:					
X-capacitors installed for testing: EMC-C1=0.47μF [ ] bleeding resistor rating: EMC-R1=EMC-R2=EMC-R3=EMC-R4=1MΩ [ ] ICX: 1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit					

5.6.6	TABLE: Resistance of protective conductors and terminations			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)	
Accessible enclosure (with metal foil) to earth	Normal	110V	--	0.007	60	ES1
Accessible switch knob (with metal foil) to earth	Normal	110V	--	0.008	60	ES1
Accessible blade	Normal	110V	--	0.012	60	ES1

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Clause	Requirement + Test	Result - Remark	Verdict

to earth						
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						

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[1)] (W)	Time (S)	PS class
All circuit	Normal	N/A	N/A	N/A	>5	PS3
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit 1) Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.						

6.2.3.1	**TABLE: Determination of Arcing PIS**			P
Location	Open circuit voltage after 3 s (Vpk)	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No
All primary circuits and secondary circuits inside the equipment enclosure	*	*	*	Yes

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

6.2.3.2	TABLE: Determination of resistive PIS		P
Location	Operating and fault condition	Dissipate power (W)	Arcing PIS? Yes / No
All primary circuits and secondary circuits inside the equipment enclosure	*	*	Yes

Supplementary information:

A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.

If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.

A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.

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

Supplementary information:

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

Supplementary information:

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5.4.1.4, 9.3, B.1.5, B.2.6	**TABLE: Temperature measurements**				P
Supply voltage (V).....:	90V/60Hz	110V/60Hz	--	--	—
Ambient temperature during test T_{amb} (°C).....:	25.0	25.0	--	--	—
Maximum measured temperature *T* of part/at:	*T* (°C)				Allowed T_{max} (°C)
Enclosure inside near motor	46.8	50.4	--	--	Ref.
Enclosure outside near motor	42.0	44.2	--	--	77
The machine external plastic shell	39.4	39.3	--	--	77
Main switch button	27.9	27.4	--	--	77
Main switch inside	30.6	30.4	--	--	85
Power cord	26.6	26.1	--	--	70
Interlock switch (waster bin)	29.5	29.7			85
Input wire	31.3	31.4	--	--	80
Motor Running capacitor	47.8	48.5	--	--	105
Connector (J-SW)	41.0	40.4	--	--	Ref.
Connector (Motor)	51.9	50.7	--	--	Ref.
X capacitor (EMC-C1)	35.2	35.2	--	--	110
Inductor (T1)	48.7	48.5	--	--	130
PCB near DB1	72.2	71.1	--	--	130
Cap (C1)	47.1	47.9	--	--	105
Relay	56.9	57.5	--	--	85
PCB near relay	51.8	52.5	--	--	130
X capacitor (EMC-C2)	45.9	46.1	--	--	110
X capacitor (EMC-C3)	40.1	41.0	--	--	110
Inductor (EMC-L)	59.8	58.7	--	--	130
E-cap (C4)	42.3	45.8	--	--	105
E-cap (C5)	42.8	45.2	--	--	105
E-cap (C2)	41.4	46.4	--	--	105
PCB near D10	40.4	41.5	--	--	130
Main switch PCB	32.2	32.1	--	--	130
LED PCB	31.0	31.1	--	--	130
Motor enclosure 1	76.5	78.0	--	--	Ref.

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Motor enclosure 2	77.1	78.8	--	--	Ref.
Motor enclosure 3	75.4	77.1	--	--	Ref.
Internal wire to motor	60.1	60.4	--	--	80
Motor support plastic	63.0	65.9	--	--	Ref.
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: Test Duty cycle: 7 mins on, 50mins off.							
Note: Tma is not included in assessment of Touch Temperatures (Clause 9).							

B.2.5	**TABLE: Input test**							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
PN415D								
90	50	1.5003	--	122.0	--	F1	1.5003	15 pieces of printed A4 paper
100	50	1.6708	2.7	152.0	250	F1	1.6708	
110	50	1.7108	--	169.8	--	F1	1.7108	
90	60	1.5344	--	124.6	--	F1	1.5344	
100	60	1.5885	2.7	143.1	250	F1	1.5885	
110	60	1.6027	--	158.4	--	F1	1.6027	
90	50	0.7780	--	60.2	--	F1	0.7780	One CD
100	50	0.7459	2.7	63.3	250	F1	0.7459	
110	50	0.7198	--	68.0	--	F1	0.7198	
90	60	0.8126	--	63.8	--	F1	0.8126	
100	60	0.7828	2.7	67.0	250	F1	0.7828	
110	60	0.7698	--	72.1	--	F1	0.7698	
90	50	0.6330	--	48.7	--	F1	0.6330	One credit card
100	50	0.6404	2.7	53.9	250	F1	0.6404	
110	50	0.6590	--	60.1	--	F1	0.6590	
90	60	0.6360	--	48.5	--	F1	0.6360	
100	60	0.6605	2.7	55.8	250	F1	0.6605	
110	60	0.6804	--	63.0	--	F1	0.6804	
PN310D								
90	50	2.1839	--	178.3	--	F1	2.1839	10 pieces of printed A4

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Clause	Requirement + Test					Result - Remark		Verdict

100	50	2.3546	2.7	214.7	250	F1	2.3546	paper
110	50	2.2541	--	223.5	--	F1	2.2541	
90	60	2.0470	--	166.2	--	F1	2.0470	
100	60	2.1606	2.7	197.3	250	F1	2.1606	
110	60	2.2428	--	224.8	--	F1	2.2428	
90	50	0.9058	--	71.1	--	F1	0.9058	One CD
100	50	0.8463	2.7	73.1	250	F1	0.8463	
110	50	0.8450	--	79.2	--	F1	0.8450	
90	60	0.9350	--	73.3	--	F1	0.9350	
100	60	0.8861	2.7	77.0	250	F1	0.8861	
110	60	0.8289	--	77.9	--	F1	0.8289	
90	50	0.5657	--	42.7	--	F1	0.5657	One credit card
100	50	0.6314	2.7	52.8	250	F1	0.6314	
110	50	0.6012	--	54.4	--	F1	0.6012	
90	60	0.6726	--	51.8	--	F1	0.6726	
100	60	0.6147	2.7	52.1	--	F1	0.6147	
110	60	0.5889	--	53.8	--	F1	0.5889	
PC210D								
90	50	2.0657	--	170.5	--	F1	2.0657	10 pieces of printed A4 paper
100	50	2.1715	2.7	200.9	250	F1	2.1715	
110	50	2.2050	--	221.7	--	F1	2.2050	
90	60	2.0188	--	165.8	--	F1	2.0188	
100	60	2.1571	2.7	196.4	250	F1	2.1571	
110	60	2.2107	--	222.1	--	F1	2.2107	
90	50	0.6001	--	45.7	--	F1	0.6001	One CD
100	50	0.6460	2.7	54.2	250	F1	0.6460	
110	50	0.6777	--	62.3	--	F1	0.6777	
90	60	0.6535	--	50.1	--	F1	0.6535	
100	60	0.6875	2.7	58.3	250	F1	0.6875	
110	60	0.7842	--	73.7	--	F1	0.7842	
90	50	0.3892	--	28.3	--	F1	0.3892	One credit card
100	50	0.4392	2.7	35.2	250	F1	0.4392	
110	50	0.4484	--	39.2	--	F1	0.4484	
90	60	0.3615	--	26.2	--	F1	0.3615	

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100	60	0.4090	2.7	33.3	250	F1	0.4090	
110	60	0.4454	--	39.6	--	F1	0.4454	
Supplementary information:								

B.3, B.4	**TABLE: Abnormal operating and fault condition tests**					P
Ambient temperature T_{amb} (°C)..... :			25			—
Power source for EUT: Manufacturer, model/type, outputrating... :			--			—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
Motor	Locked	110V	60 cycles	F1	2.8033 → 0.0809	Input: 279.2→0.85W Unit shut down, recoverable, no hazard. Motor enclosure: 45.6 °C Ambient measured max: 25.0 °C. Touch current: 0.012mApk
Motor	O-L	110V	2h41mins	F1	2.4801	Input: 248.8W Shred over to 11 pieces of printed A4 paper. Protected when shred 12 sheets of paper for about 6.5 minutes. no damage, no hazard. Motor enclosure: 79.0 °C Enclosure outside near motor: 44.5 °C Ambient measured max: 25.0 °C. Touch current: 0.012mApk
Motor (Paper jam)	--	110V	10min	F1	0.081	P=0.4W Unit shut down, recoverable, no hazard Touch current: 0.014mApk
DB1	SC	90/110V	1s	F1	0	Fuse opened, no hazards. Touch current: 0.012mApk
C4	SC	110V	10mins	F1	2.2436	P=223.7w Normal work.No damage, no hazard. Touch current: 0.012mApk

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Clause	Requirement + Test	Result - Remark	Verdict

C2	SC	110V	10mins	F1	0.0792	P=0.82w Unit shut down, recoverable.No damage no hazards. Touch current: 0.012mApk
R10	SC	110V	10mins	F1	2.2455	P=223.8w Normal work.No damage, no hazard. Touch current: 0.012mApk
D3	SC	110V	10mins	F1	2.2452	P=224.1W Normal work.No damage, no hazard. Touch current: 0.012mApk
Relay pin 1-3	SC	110V	10mins	F1	0.9911	Input: 67.61W Unit reverse. No damage, no hazard. Touch current: 0.012mApk
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit, BL= Block						

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?.....:				No			—
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)			
See appended tables 4.1.2	--	--	--	--	--	--	
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.							
Specified battery temperature (°C).....:				0-45			--

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

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Clause	Requirement + Test	Result - Remark	Verdict

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

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

Battery identification	Charging at T_{lowest} (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation
--	--	--	--	--

Supplementary information:

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

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Clause	Requirement + Test	Result - Remark	Verdict

--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:

Abbreviation: SC= short circuit; OC= open circuit

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
Internal component or part	--	--	--	10	5	No damaged, no hazards.
External enclosure top	Thermoplastic	Min.2.0	a circular plane surface 30 mm in diameter	250	5	No damaged, no hazards.
External enclosure side	Thermoplastic	Min.2.0	a circular plane surface 30 mm in diameter	250	5	No damaged, no hazards.
External enclosure bottom	Thermoplastic	Min.2.0	a circular plane surface 30 mm in diameter	250	5	No damaged, no hazards.

Supplementary information:

1) See appended tables 4.1.2 for detail.

T.6, T.9	TABLE: Impact test	P

Location/Part	Material	Thickness (mm)	Height (mm)	Observation
Enclosure top	Thermoplastic	Min.2.0	1300	No damaged, no hazards.
Enclosure side	Thermoplastic	Min.2.0	1300	No damaged, no hazards.
Enclosure bottom	Thermoplastic	Min.2.0	1300	No damaged, no hazards.

Supplementary information:

1) See appended tables 4.1.2 for detail.

T.7	TABLE: Drop test	N/A

Location/Part	Material	Thickness (mm)	Height (mm)	Observation
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:
1) See appended tables 4.1.2 for detail.

T.8	**TABLE: Stress relief test**				P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Enclosure of completed product	Thermoplastic	Min.2.0	70	7	No class 3 energy sources become accessible to an ordinary person or to an instructed person
Supplementary information:					
1) See appended tables 4.1.2 for detail.					

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

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Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	**TABLE: Critical components information**				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1)]
Plug	DONGGUAN STAR THAI ELECTRIC CO.,LTD	HL-811	125 Vac, 7 A	Appendix 4 Section 1, Section 6 and Appendix 10 Chapter 5	JET (JET7940-43001-1001)
Alternative	DONGGUAN YINGHAO ELECTRIC WIRE PRODUCT CO.,LTD	SY-41	125 Vac, 7 A	Appendix 4 Section 1, Section 6 and Appendix 10 Chapter 5	JET (JET7555-43001-1001)
Alternative	ZHEJIANG JINTING NUCLEAR CABLE CO.,LTD	J2-7	125 Vac, 7 A	Appendix 4 Section 1, Section 6 and Appendix 10 Chapter 5	JET (JET5812-43001-1002)
Alternative	SHENZHEN DONGZHANWANG ELECTRONICS CO.,LTD	DZW-T16	125 Vac, 7 A	Appendix 4 Section 1, Section 6 and Appendix 10 Chapter 5	JET (JET7496-43001-1001)
Alternative	NINGBO LIGHT-HEAVY ELECTRONICS TECHNOLOGY CO., LTD.	FE-126P	125 Vac, 7 A	Appendix 4 Section 1, Section 6 and Appendix 10 Chapter 5	JET (JET5033-43001-1003)
Alternative	YUYAO JINGYI ELECTRONICS CO.,LTD	JY04	125 Vac, 7 A	Appendix 4 Section 1, Section 6 and Appendix 10 Chapter 5	JET (JET2382-43001-1004)
Alternative	KUNSHAN BAIDELI ELECTRONICS CO.,LTD	BDL-022	125 Vac, 7 A	Appendix 4 Section 1, Section 6 and Appendix 10 Chapter 5	JET (JET6219-43001-1001)
Alternative	VARIOUS	VARIOUS	125 Vac, 7 A	Appendix 4 Section 1, Section 6 and Appendix 10 Chapter 5	PSE JET Approved
Power cord	DONGGUAN STAR THAI ELECTRIC CO.,LTD	VCTFK	2x0.75 mm^2	Appendix 1 Section 1, (1), (6) and (9)	JET (JET7940-12009-1001)

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Alternative	DONGGUAN POWERYUAN WIRE INDUSTRIES CO.,LTD	VCTFK	2x0.75 mm^2	Appendix 1 Section 1, (1), (6) and (9)	JET (JET6563-12009-1001)
Alternative	ZHEJIANG JINTING NUCLEAR CABLE CO.,LTD	VCTFK	2x0.75 mm^2	Appendix 1 Section 1, (1), (6) and (9)	JET (JET5812-12009-1001)
Alternative	SHENZHEN DONGZHANWANG ELECTRONICS CO.,LTD	VCTFK	2x0.75 mm^2	Appendix 1 Section 1, (1), (6) and (9)	JET (JET7496-12009-1001)
Alternative	NINGBO LIGHT-HEAVY ELECTRONICS TECHNOLOGY CO., LTD.	VCTFK	2x0.75 mm^2	Appendix 1 Section 1, (1), (6) and (9)	JET (JET5033-12009-1001)
Alternative	YUYAO JINGYI ELECTRONICS CO.,LTD	VCTFK	2x0.75 mm^2	Appendix 1 Section 1, (1), (6) and (9)	JET (JET2382-12009-1004)
Alternative	KUNSHAN BRANDLI ELECTRONICS CO.,LTD	VCTFK	2x0.75 mm^2	Appendix 1 Section 1, (1), (6) and (9)	JET (JET7608-12009-1001)
Alternative	VARIOUS	VCTFK	2x0.75 mm^2	Appendix 1 Section 1, (1), (6) and (9)	PSE JET Approved
Slide Switch (SW1)	ZHEJIANG ZHONGXUN ELECTRONICS CO.,LTD	PBS-110-L	250Vac, 3A, T85, 1E4	EN 61058-1	TUV R 50139655
Alternative	YUEQING SIWIG ELECTRONICS CO.,LTD	SW01	250Vac, 8(4)A, T115,1E4	EN 61058-1	TUV R 50510508
Alternative	SUZHOU XINNAN ELECTRIC CO.,LTD	XN-2-2308	250Vac, 8A, T85, 1E4	EN 61058-1	VDE 40019229
Alternative	DICGU ELECTRONICS CO.,LTD	VS011-4	250Vac, 3A, T85, 1E4	EN 61058-1	VDE 123614
Alternative	SUZHOU IE-TECH CO.,LTD	SSD-2313	250Vac, 10A, T85, 1E4	EN 61058-1	TUV R 50147134
Alternative	FONGDA ELECTRONIC CO.,LTD	FDL06	250Vac, 6A, T85, 6E3	EN 61058-1	VDE 40018708
Alternative	HUIYANG ZING EAR INDUSTY CO.,LTD	SL01-3	250Vac, 13(3)A, T125, 1E4	EN 61058-1	ENEC 234464
Micro interlock switch	YUEQING SIWIG ELECTRONICS CO.,LTD	G20-16	125/250Vac,16(10)A, T125, 5E4	EN61058-1	ENEC 01678

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Alternative	ZHONGXUN ELECTRONICS INDUSTRY COMPANY	KW11-7	250Vac, 16(8)A, T85, 5E4	EN 61058-1	TUV R 50046626
Alternative	ZHONGSHAN JUFOND ELECTRIC APPLIANCE CO., LTD	SW315	250Vac, 16(2)A, T125, 1E5	EN 61058-1	TUV R 50112960
Alternative	TRANTEK ELECTRONICS CO., LTD.	TXJ6	125/250Vac, 6A, T130, 1E4	EN 61058-1	ENEC17 159776
Alternative	TRANTEK ELECTRONICS CO., LTD.	163	125/250Vac, 6A, T130, 5E4	EN 61058-1	ENEC05 35-110257
Alternative	TRANTEK ELECTRONICS CO., LTD.	162	125/250Vac,16(4)A, T130, 5E4	EN 61058-1	ENEC05 35-110477
Alternative	SUZHOU XIN NAN ELECTRIC CO.,LTD	XN-5	250Vac, 15(2.5)A, T85, 5E4	EN 61058-1	TUV R 50245691
Alternative	YUEQING TONGDA WIRE ELECTRIC FACTORY	HK-14	250Vac, 16(3) A, T125, 5E4	EN 61058-1	VDE 40027032
Alternative	HUIYANG ZING EAR INDUSTRY CO.,LTD	G5T16	250Vac, 16(4)A, T125, 5E4	EN 61058-1	ENEC NO 246256
Alternative	FONGDA ELECTRONIC CO., LTD.	FDJ05	250 Vac, 5A, T85, 10E3	EN 61058-1	VDE 40018353
Alternative	SUZHOU IE-TECH CO., LTD.	MS-1115	250 Vac, 15(3) A, T130, 50E3	EN 61058-1	VDE 40018494
Alternative	ZHEJIANG QIAOH CONTROL COMPONENT CO., LTD.	KW9	250 Vac, 16(4) A, T105, 1E4	EN 61058-1	ENEC 00074
Alternative	FOSHAN SHUNDE YUSHUN ELECTRIC APPLIANCE LTD	KW-16	125/250Vac,16(4)A, T125, 5E4	EN 61058-1	TUV R 50179582
Fuse(F1)	XC ELECTRONICS (SHEN ZHEN) CORP. LTD.	3T	T5A, 250VAC	EN 60127-1 EN 60127-3	VDE 40019614
Alternative	SUNNY EAST ENTERPRISE CO., LTD.	TDP	T5A, 250VAC	EN 60127-1 EN 60127-3	VDE 40024676
Alternative	DONGGUAN REOMAX ELECTRONICS CO.,LTD	TBP	T5A, 250VAC	EN 60127-1 EN 60127-3	VDE 40032053
Alternative	HONGHU BLUELIGHT ELECTRONIC CO., LTD.	L3T	T5A, 250VAC	EN 60127-1 EN 60127-3	VDE 40026874

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Clause	Requirement + Test	Result - Remark	Verdict

Alternative	DONGGUAN BETTER ELECTRONIVS TECHNOLOGY CO.,LTD	332	T5A, 250VAC	EN 60127-1 EN 60127-3	TUV J501589 50
Alternative	HOLLYLAND COMPANY LIMITED	32S 30TS	T5A, 250VAC	EN 60127-1 EN 60127-3	VDE 400118 30
PCB	CIXI CITY LUTENG ELECTRONIC TECHNOLOGY CO.,LTD	CEM1, FR1	V-0, 130°C	EN 62368-1 UL 796 UL 94	UL E32175 0 + tested with applianc e
Alternative	ZHEJIANG CHANGSHAN DEXUNDA ELECTRONIC TECHNOLOGY CO.,LTD	DXD-D1， DXD-S1, DXD-S2	V-0, 130°C	EN 62368-1 UL 796 UL 94	UL E47429 2 + tested with applianc e
Alternative	YANGZHOU YONGLI ELECTRONIC CO., LTD.	YL-01, YL-03, YL-V0	V-0, 130°C	EN 62368-1 UL 796 UL 94	UL E21710 2 + tested with applianc e
Alternative	CHANGZHOU YUNFENG ELECTRONICS CO., LTD	HD-2, HD-4, HD-5	V-0, 130°C	EN 62368-1 UL 796 UL 94	UL E17465 1 + tested with applianc e
Alternative	GUANGDONG CHAOHUA TECHNOLOGY CO.,LTD	C-102, C-104	V-0, 130°C	EN 62368-1 UL 796 UL 94	UL E23115 1 + tested with applianc e
Alternative	HANGZHOU BAOLIN PRINTED CIRCUIT BOARD CO.,LTD	BL1, BL2, BL3	V-0, 130°C	EN 62368-1 UL 796 UL 94	UL E20714 3 + tested with applianc e

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

Alternative	HANGZHOU SHENGDA ELECTRONICS CO.,LTD	SD-1, SD-2	V-0, 130°C	EN 62368-1 UL 796 UL 94	UL E349766 + tested with appliance
Alternative	VARIOUS	Various	V-0, 130°C	EN 62368-1 UL 796 UL 94	UL + tested with appliance
X2 capacitor	DAIN ELECTRONICS CO., LTD.	MPX	X2 type, Max.0.47μF, 275Vac, 40/110/21	EN 60384-14	VDE 40018798
Alternative	SHANGHAI JIABAO PAN OCEAN ELECTRON CO., LTD.	MPX	X2 type, Max.0.47μF, 275Vac, 40/100/56	EN 60384-14	VDE 40043363
Alternative	GUANGDONG FENGMING ELECTRONIC TECH. CO., LTD.	MKP-X2	X2 type, Max.0.47μF, 275 Vac, 40/105/21	EN 60384-14	VDE 40025702
Alternative	SHENZHEN JING YU ELECTRONICS CO.,LTD	CBBX2	X2 type, Max.0.47μF, 275 Vac, 40/100/21	EN 60384-14	VDE 40025597
Alternative	FOSHAN CITY XIN YUAN ELECTRONIC CO.,LTD	MKP-X2	X2 type, Max.0.47μF, 275 Vac, 40/105/21	EN 60384-14	VDE 40027433
Alternative	JIMSON ELECTRONICS (XIAMEN) CO., LTD.	MKP	X2 type, Max.0.47μF, 275 Vac, 40/100/21	EN 60384-14	VDE 40000463
Alternative	HSUAN TAI ELECTRONIC CO., LTD.	MCY	X2 type, Max.0.47μF, 275 Vac, 25/110/21	EN 60384-14	VDE 125205
Alternative	FOSHAN SHUNDE BEIJIAO HUA DA ELECTRIC INDUSTRIAL CO.,LTD	HD MKP	X2 type, Max.0.47μF, 275 Vac, 40/105/21	EN 60384-14	VDE 40027182
Relay	YUYAO HUI LONG CANG RELAYS MFG FACTORY	973-24VDC-SL-C	250Vac, 10A, T85, 24Vdc	EN 61810-1	TUV R 50156096
Alternative	LI YANG QLRELAY ELECTRONIC CO.,LTD	BRD-SS-124L	250Vac, 7A, T85, 24Vdc	EN 61810-1	TUV R 50489202
Alternative	NINGBO TIANBO GANGLIAN ELECTRONICS CO.,LTD	HJR-3FF-S-Z	240Vac, 7A, T85, 24Vdc	EN 61810-1	TUV R 50116163
Alternative	HUNAN SANYI PRECISION TECHNOLOGY CO.,LTD	SED-24D	250Vac, 10A, T85, 24Vdc	EN 61810-1	TUV R 50328904

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

Alternative	NINGBO SONGLE RELAY CO.,LTD	SRD-24VDC-SL-C	250Vac, 10A, T85, 24Vdc	EN 61810-1	TUV R 50056114
Alternative	SHENZHEN YUANZE ELECTRIC CO.,LTD	Y3F-SS-124D	250Vac, 10A, T85, 24Vdc	EN 61810-1	TUV R 50197243
Alternative	WANGRONG ELECTRONICS (SHENZHEN) CO.,LTD	RD-124DF-S, RD-124D	277Vac,10A,T85, 24Vdc	EN 61810-1	TUV R 50244311
Alternative	NINGBO ZETTLER ELECTRONICS CO., LTD.	JQC-3FF 24VDC-1ZS	277Vac, 10A, T105, 24Vdc	EN 61810-1	TUV R 50265555
Alternative	NINGBO BAO CHENG ELECTRONICS CO.,LTD	T73-24VDC-SL-C	250Vac,10A,T85,24Vdc	EN61810-1	TUV R 50546941
Internal wire	SHENZHEN DONG JU WIRE & CABLE CO., LTD.	1007	300V, 80°C, 20-26AWG	EN 62368-1 UL 758	UL E189674 + tested with appliance
Alternative	XINYA ELECTRONIC CO.,LTD.	1007	300V, 80°C, 20-26AWG	EN 62368-1 UL 758	UL E170689 + tested with appliance
Alternative	XINGDA ELECTRONICS WIRE & CABLE CO., LTD.	1007	300V, 80°C, 20-26AWG	EN 62368-1 UL 758	UL E187208 + tested with appliance
Alternative	QIFURUI ELECTRONICS CO.	1007	300V, 80°C, 20-26AWG	EN 62368-1 UL 758	UL E211048 + tested with appliance
Alternative	SHANGHAI MINGZHAN WIRE & CABLE CO., LTD.	1007	300V, 80°C, 20-26AWG	EN 62368-1 UL 758	UL E243220 + tested with appliance

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

Alternative	SHEN ZHEN BAOHING ELECTRIC WIRE & CABLE MFRCO., LTD.	1007	300V, 80°C, 20-26AWG	EN 62368-1 UL 758	UL E168141 + tested with appliance
Alternative	LEADER ELECTRIC WIRE & CABLE CO., LTD.	1007	300V, 80°C, 20-26AWG	EN 62368-1 UL 758	UL E154283 + tested with appliance
Alternative	EVER BRIGHT DEVELOPMENT COMPANY	1007	300V, 80°C, 20-26AWG	EN 62368-1 UL 758	UL E191230 + tested with appliance
Alternative	HONG KONG DONG TIAN TONG LI ELECTRICITY CO., LTD.	1007	300V, 80°C, 20-26AWG	EN 62368-1 UL 758	UL E254854 + tested with appliance
Alternative	VARIOUS	1007	300V, 80°C, 20-26AWG	EN 62368-1 UL 758	UL Approved + tested with appliance
Internal wire connected to motor	SHENZHEN DONG JU WIRE & CABLE CO., LTD.	1015	600V, 105°C, 22AWG	EN 62368-1 UL 758	UL E189674 + tested with appliance
Alternative	QIFURUI ELECTRONICS CO.	1015	600V, 105°C, 22AWG	EN 62368-1 UL 758	UL E211048 + tested with appliance

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

Alternative	HONG KONG DONG TIAN TONG LI ELECTRICITY CO., LTD.	1015	600V, 105°C, 22AWG	EN 62368-1 UL 758	UL E254854 + tested with applianc e
Alternative	XINYA ELECTRONIC CO., LTD.	1015	600V, 105°C, 22AWG	EN 62368-1 UL 758	UL E170689 + tested with applianc e
Alternative	XINGDA ELECTRONICS WIRE & CABLE CO., LTD.	1015	600V, 105°C, 22AWG	EN 62368-1 UL 758	UL E187208 + tested with applianc e
Alternative	EVER BRIGHT DEVELOPMENT COMPANY	1015	600V, 105°C, 22AWG	EN 62368-1 UL 758	UL E191230 + tested with applianc e
Alternative	LEADER ELECTRIC WIRE & CABLE CO., LTD.	1015	600V, 105°C, 22AWG	EN 62368-1 UL 758	UL E154283 + tested with applianc e
Alternative	SHEN ZHEN BAOHING ELECTRIC WIRE & CABLE MFRCO., LTD.	1015	600V, 105°C, 22AWG	EN 62368-1 UL 758	UL E168141 + tested with applianc e
Alternative	SHANGHAI MINGZHAN WIRE & CABLE CO., LTD.	1015	600V, 105°C, 22AWG	EN 62368-1 UL 758	UL E243220 + tested with applianc e

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

Alternative	VARIOUS	1015	600V, 105°C, 22AWG	EN 62368-1 UL 758	UL Approved + tested with appliance
Enclosure of main parts	NINGBO LG YONGXING CHEMICAL CO., LTD.	FR-500H	ABS, V-0, 60°C, min. thickness 2.0mm	EN 62368-1 UL 758	UL E203955 + tested with appliance
Alternative	CHI MEI CORPORATION	PA-765A	V-0, 85°C, min. thickness 2.0mm	UL746	UL (E56070) + tested with appliance
Motor	DONG CHANG MOTOR	WX3445D100	100VDC, Class B	EN 62368-1	Tested with appliance
Motor protector	JIANGSU CHANGSHENG ELECTRIC APPLIANCE CO., LTD.	17AM-D	AC250V, Tf 65°C	EN 60730-1 EN 60730-2-2	VDE 40016509
-Alternative	JIANGSU MEIKAI ELECTRIC CO.,LTD	17AMC	AC250V, Tf 65°C	EN 60730-1 EN 60730-2-2	VDE 40030600
-Alternative	SENSATA TECHNOLOGIES HOLLAND B.V.	17AMC	AC250V, Tf 65°C	EN 60730-1 EN 60730-2-2	KEMA No.2092331 .01
-Alternative	SENSATA TECHNOLOGIES HOLLAND B.V.	17AM	AC250V, Tf 65°C	EN 60730-1 EN 60730-2-2	KEMA No.201453 1.05
-Alternative	SENSATA TECHNOLOGIES HOLLAND B.V.	8CM	AC250V, Tf 65°C	EN 60730-1 EN 60730-2-2	KEMA No.201453 1.02
-Alternative	CHWEN-DER THERMOSTAT & CO., LTD.	CD79F	AC250V, Tf 65°C	EN 60730-1 EN 60730-2-2	VDE 40004958
-Alternative	FOSHAN JI HUI ELECTRICAL APPLIANCE CO.,LTD	BW	AC250V, Tf 65°C	EN 60730-1 EN 60730-2-2	VDE 40019595
-Alternative	HUBEI JIHUI CO.,LTD	17AM	AC250V, Tf 65°C	EN 60730-1 EN 60730-2-2	TUV SUD B1051280006

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

-Y2 capacitor	JYH CHUNG ELECTRONIC CO., LTD.	JY	Y2 type, Max.4700pF, 300Vac, 40/085/21/C	EN 60384-14	VDE 123326
-Alternative	HSUAN TAI ELECTRONIC CO., LTD.	CY	Y2 type, Max.4700pF, 250Vac, 40/085/21/C	EN 60384-14	VDE 118413
-Alternative	JYA-NAY CO., LTD	JY	Y2 type, Max.4700pF, 250Vac, 25/125/21/A	EN 60384-14	TUV R 50232061
-Alternative	SUCCESS ELECTRONICS CO., LTD.	SF	Y2 type, Max.4700pF, 250Vac, 40/125/56/C	EN 60384-14	VDE 40016665
-Alternative	DONGGUAN CITY DAFU ELECTRONICS CO.,LTD	CT7 Y2	Y2 type, Max.4700pF, 250Vac, 25/085/21/C	EN 60384-14	VDE 40041521
Supplementary information:					
[1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

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			
	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.		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.	No mains socket-outlet and appliance outlet.	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.		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.		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.		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.		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”.		P
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.		P
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.		P
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.		P
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.		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.		P
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.		P

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.		P
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.	Approved Plug used	P
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.		P

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.		P

Picture:

Fig.1 Over view

Fig.2 Rear view

Picture:

Fig.3 Side View

Fig.4 Side View

Picture:

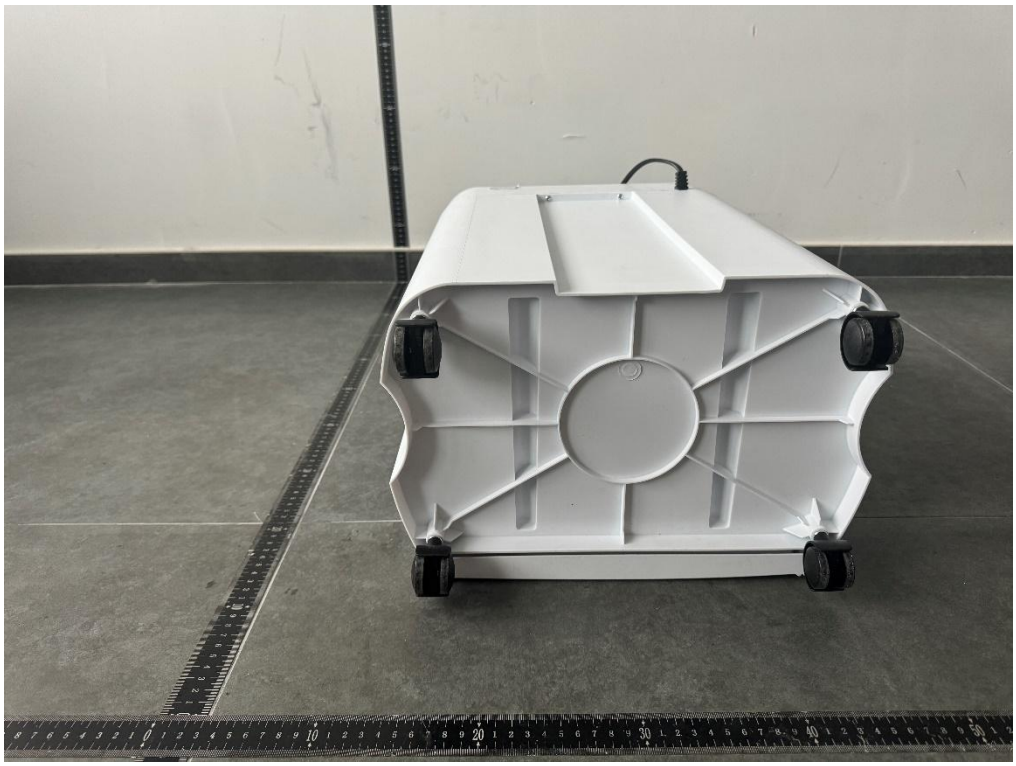

Fig.5 Bottom View

Fig.6 Waste container

Picture:

Fig.7 Cord Strain proof view

Fig.8 Main part top view for model PN210D

Picture:

Fig.9 Main part bottom view for model PN210D

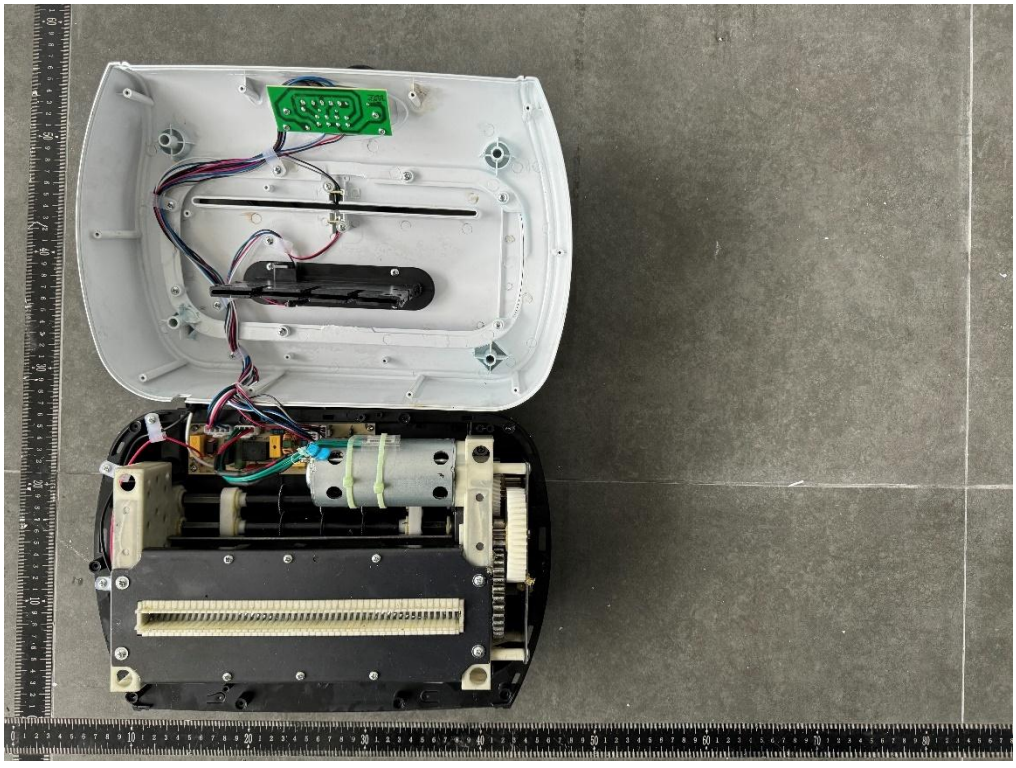

Fig.10 Internal view for model PN210D

Picture:

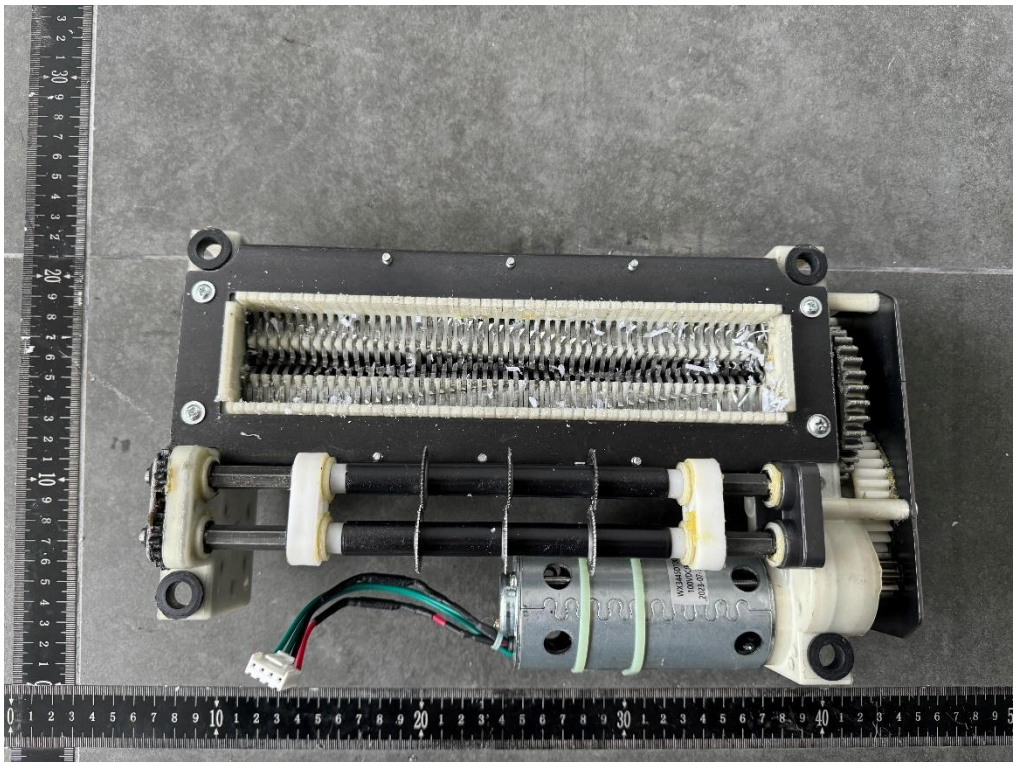

Fig.11 Blade and motor top view for model PN210D

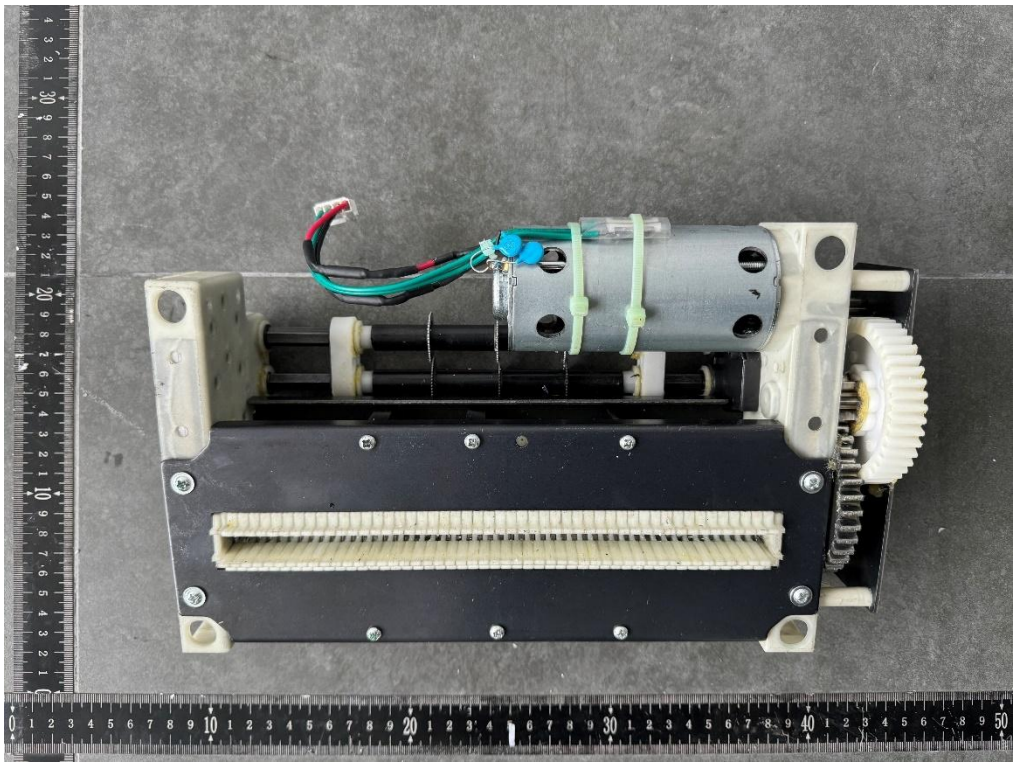

Fig.12 Blade and motor bottom view for model PN210D

Picture:

Fig.13 Main parts top view for model PN310D

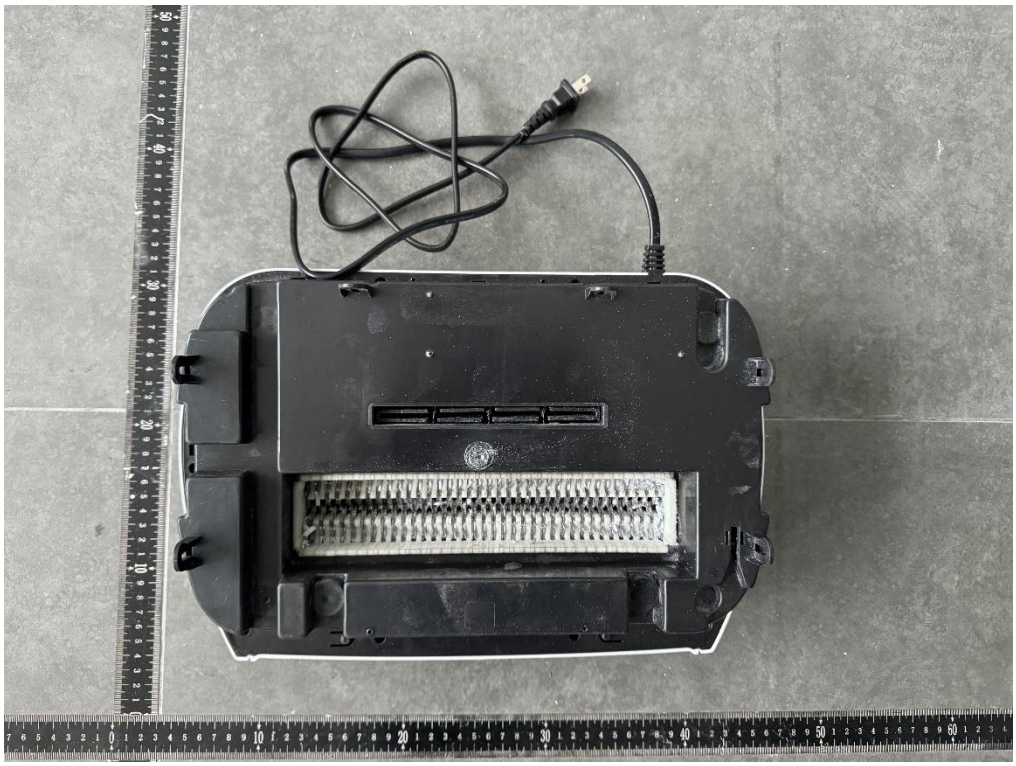

Fig.14 Main parts top view for model PN310D

Picture:

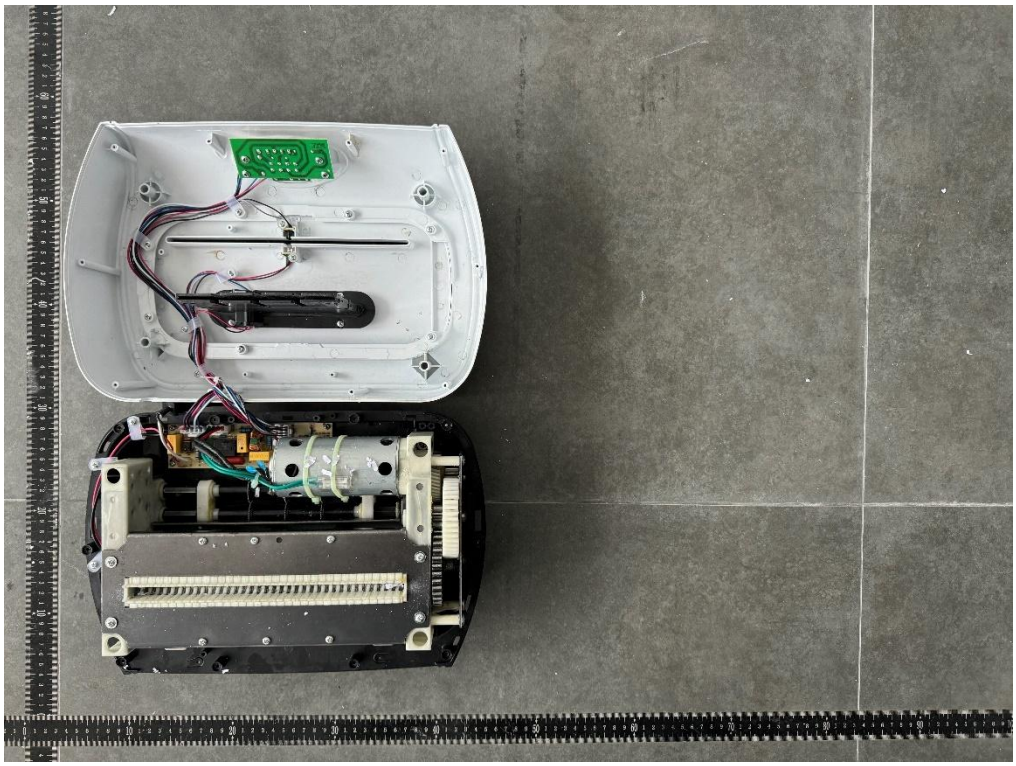

Fig.15 Internal view for model PN310D

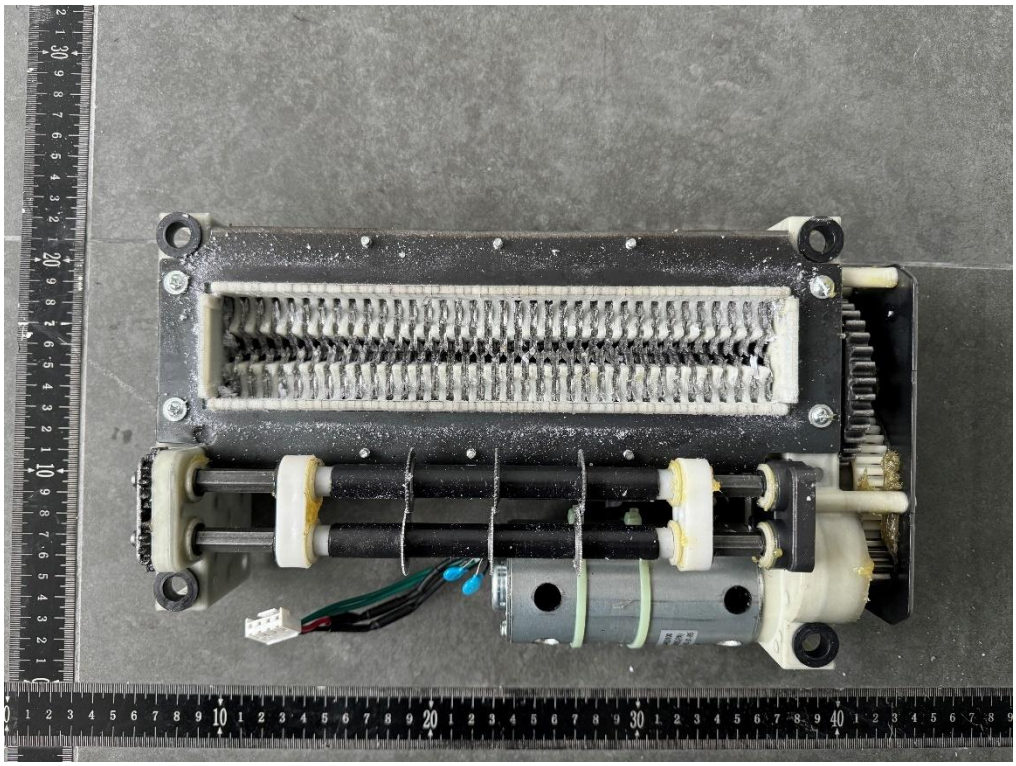

Fig.16 Blade and motor top view for model PN310D

Picture:

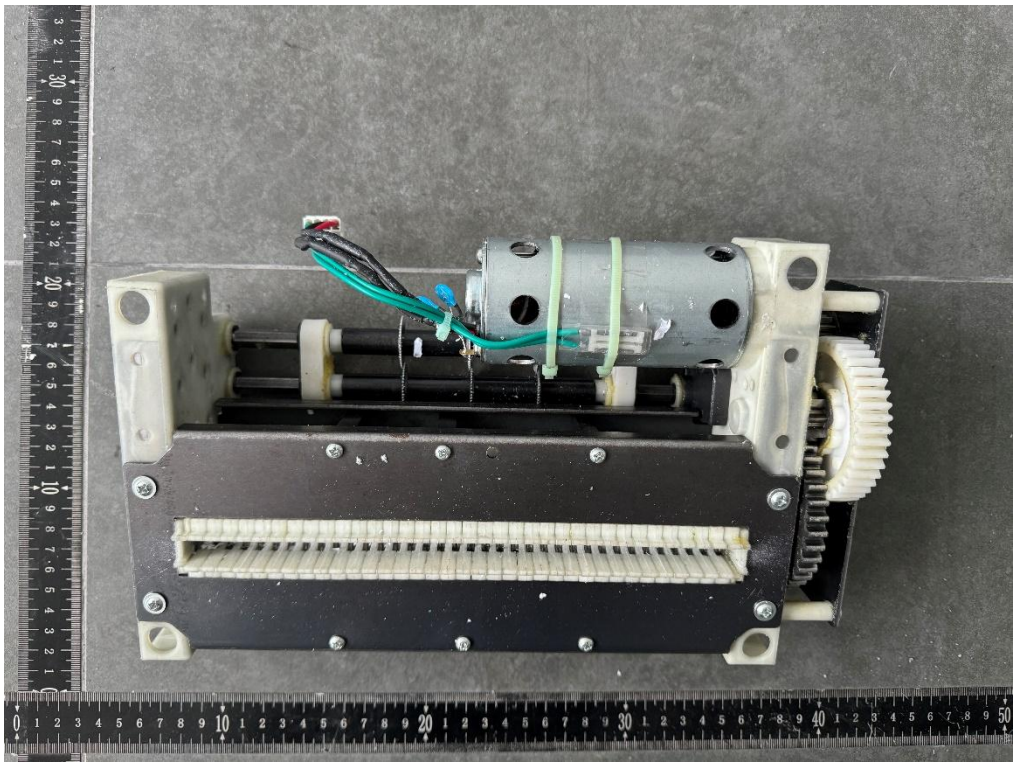

Fig.17 Blade and motor bottom view for model PN310D

Fig.18 Main parts top view for model PN415D

Picture:

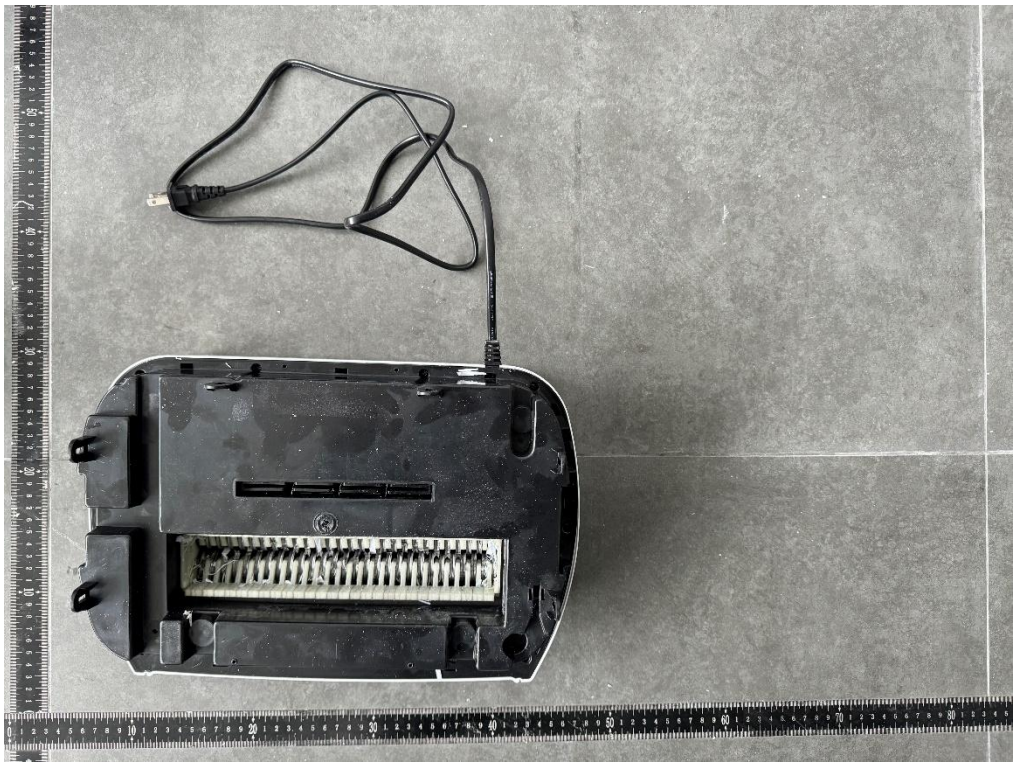

Fig.19 Blade view for model PN415D

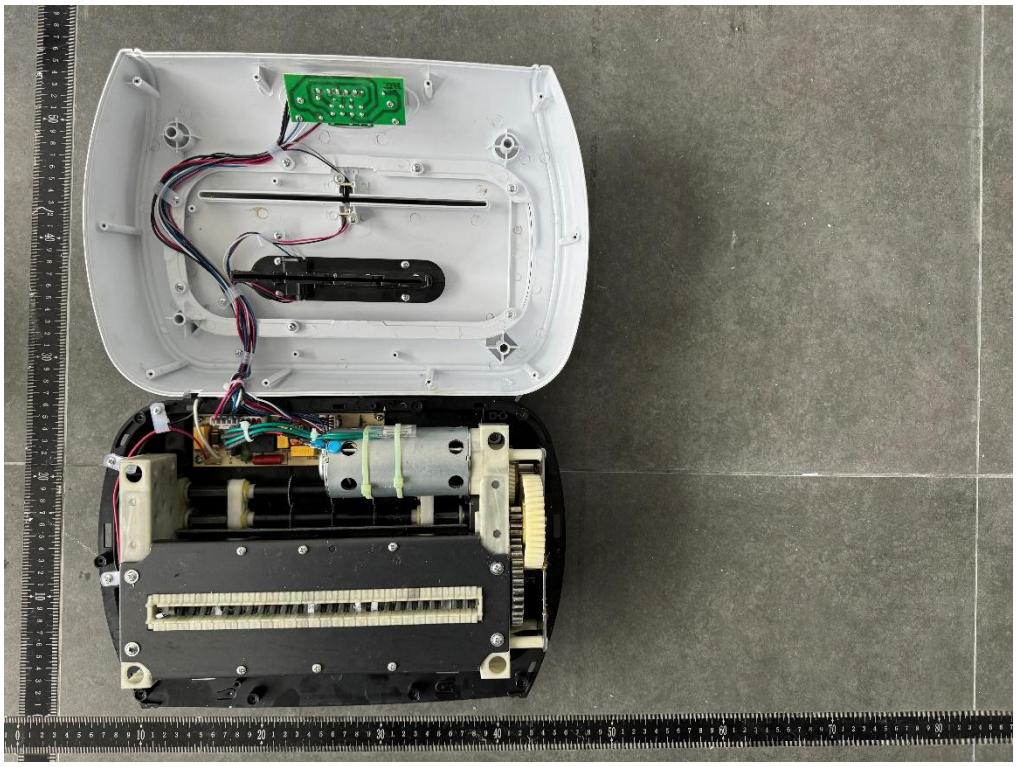

Fig.20 Internal view for model PN415D

Picture:

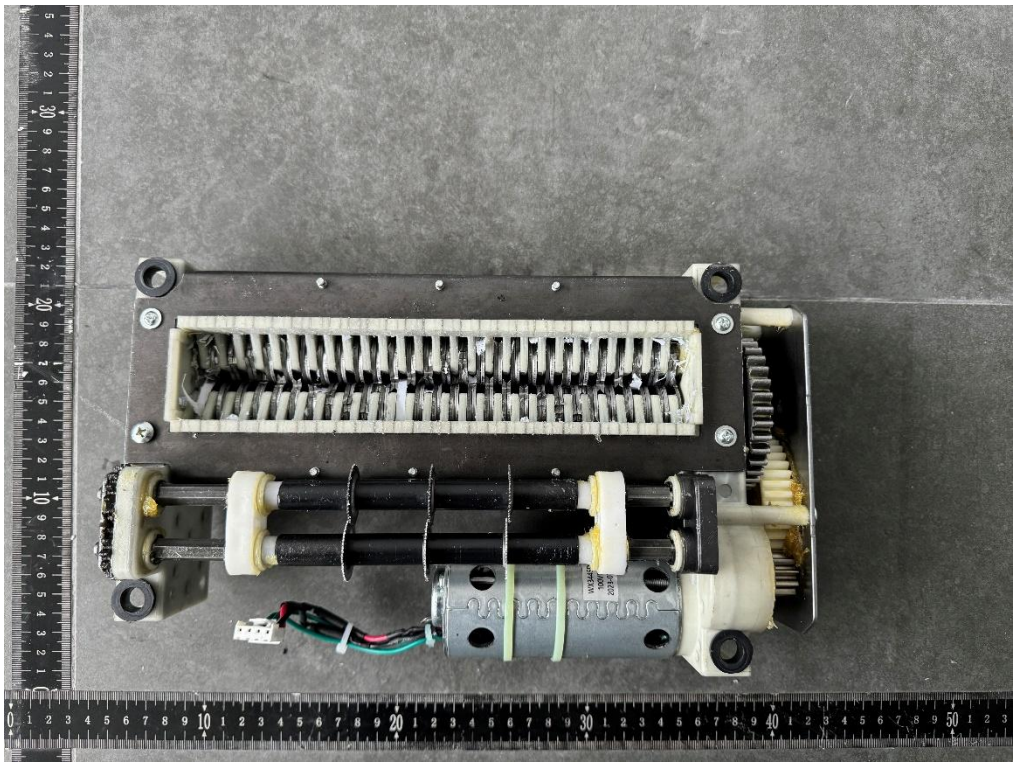

Fig.21 Blade and motor top view for model PN415D

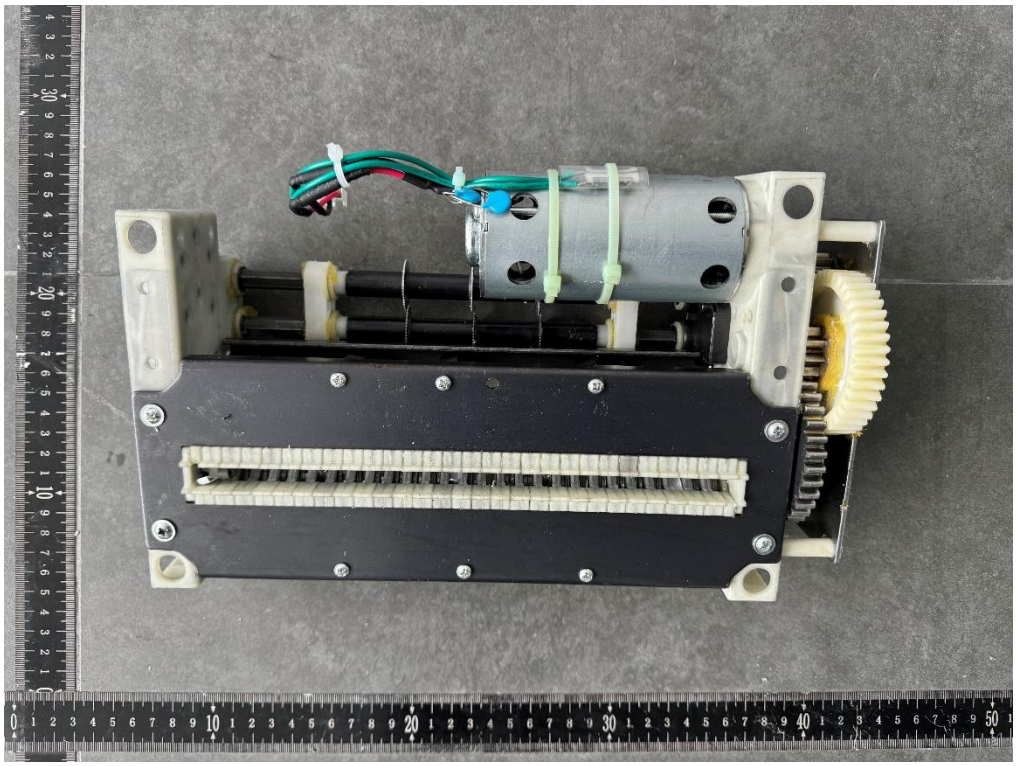

Fig.22 Blade and motor bottom view for model PN415D

Picture:

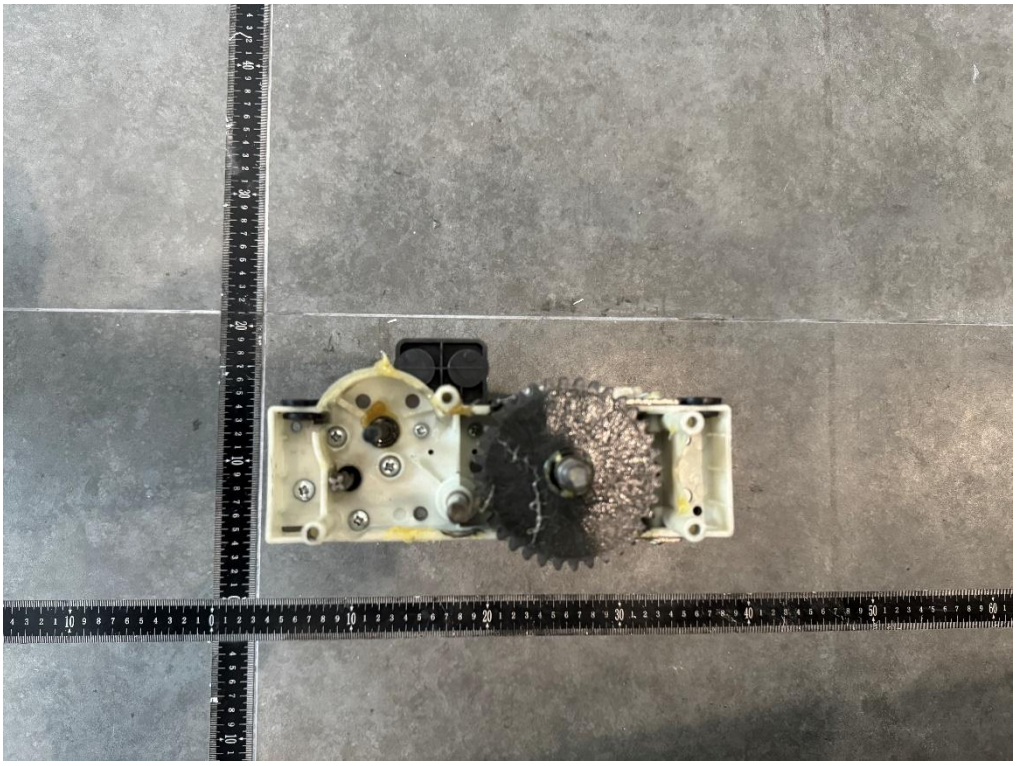

Fig.23 Blade and motor side view for all models

Fig.24 Motor view for all models

Picture:

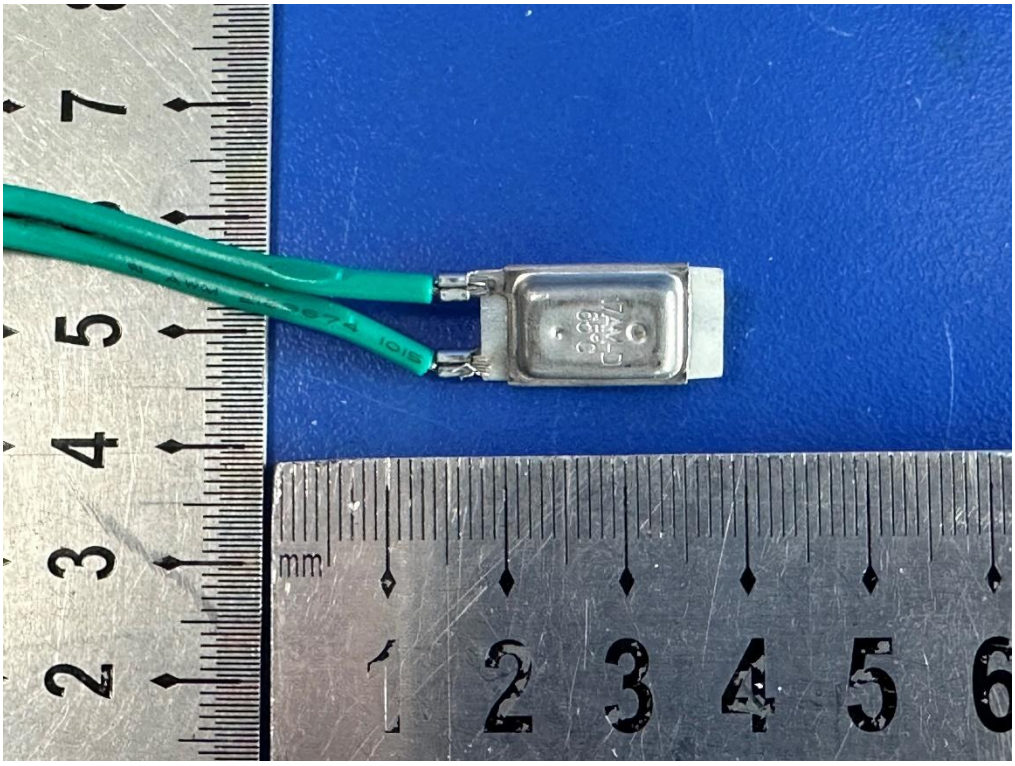

Fig.25 Motor protector view for all models

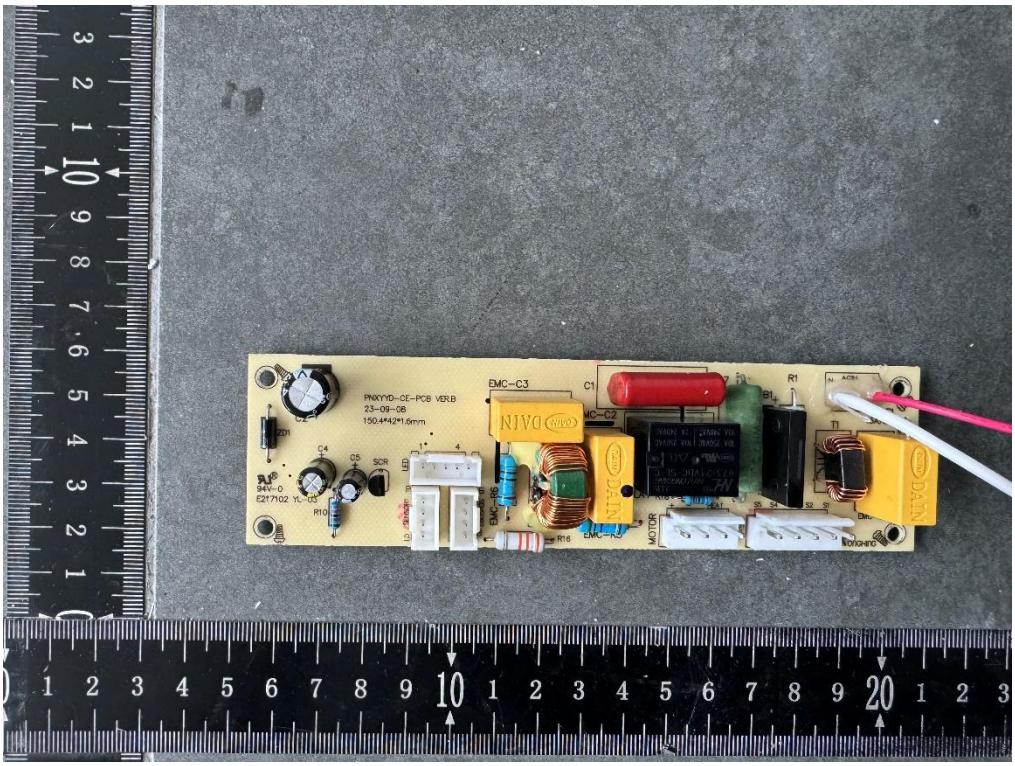

Fig.26 Main PCB top view

Picture:

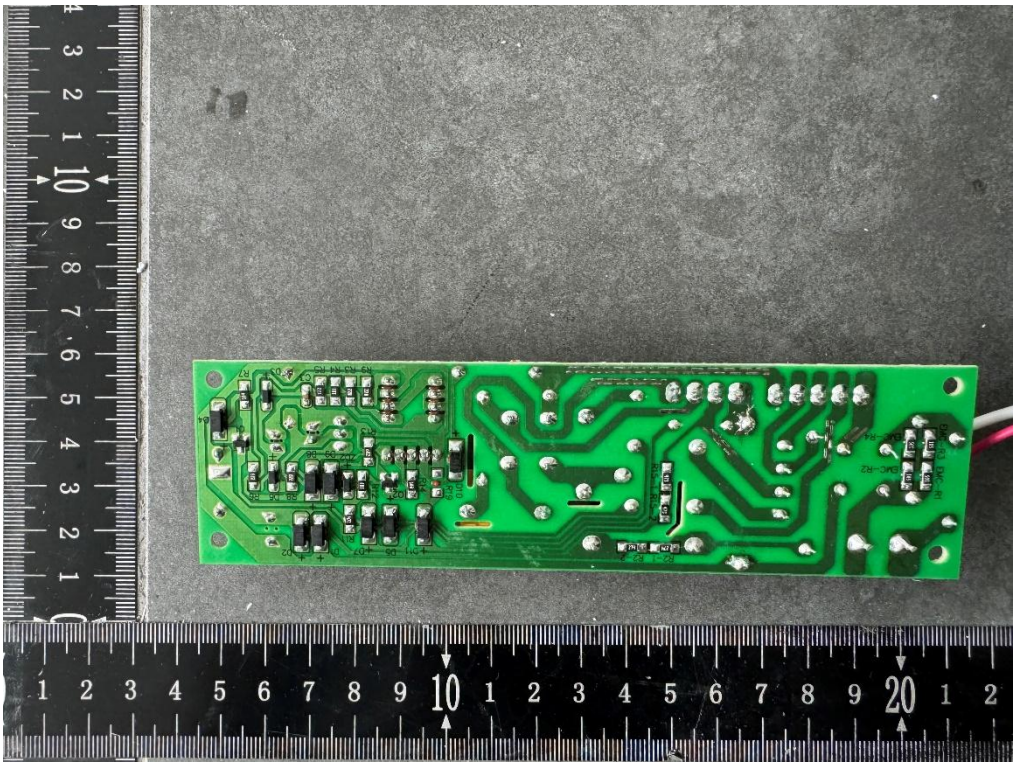

Fig.27 Main PCB bottom view

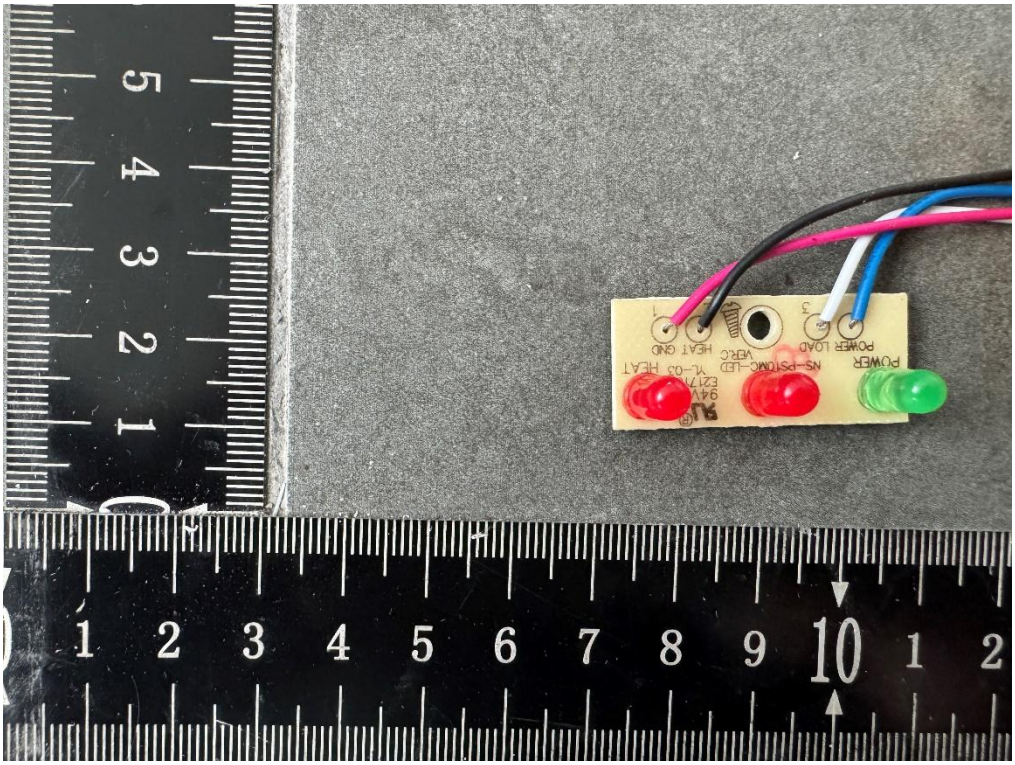

Fig.28 LED PCB top view

Picture:

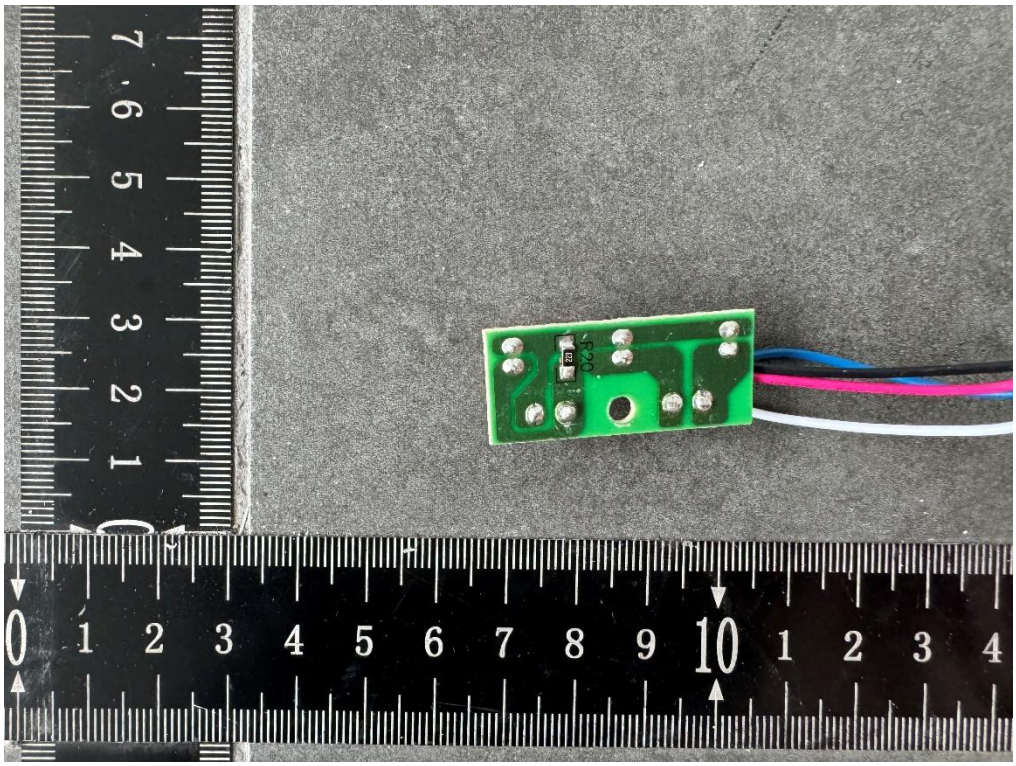

Fig.29 LED PCB bottom view

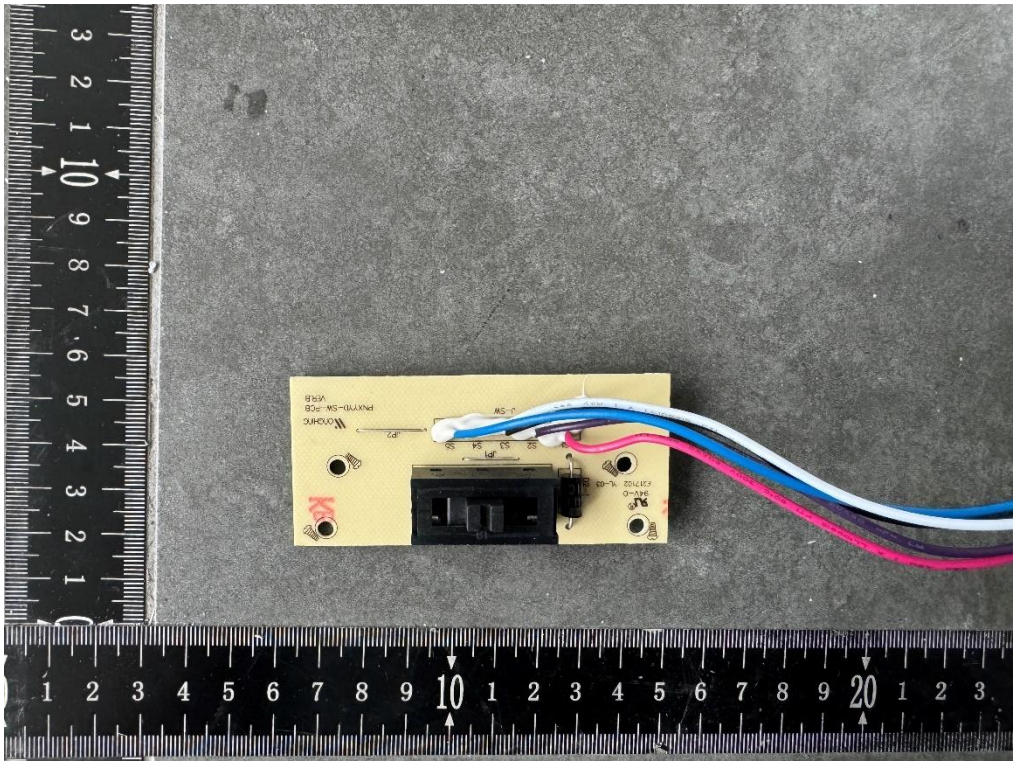

Fig.30 Switch PCB top view

Picture:

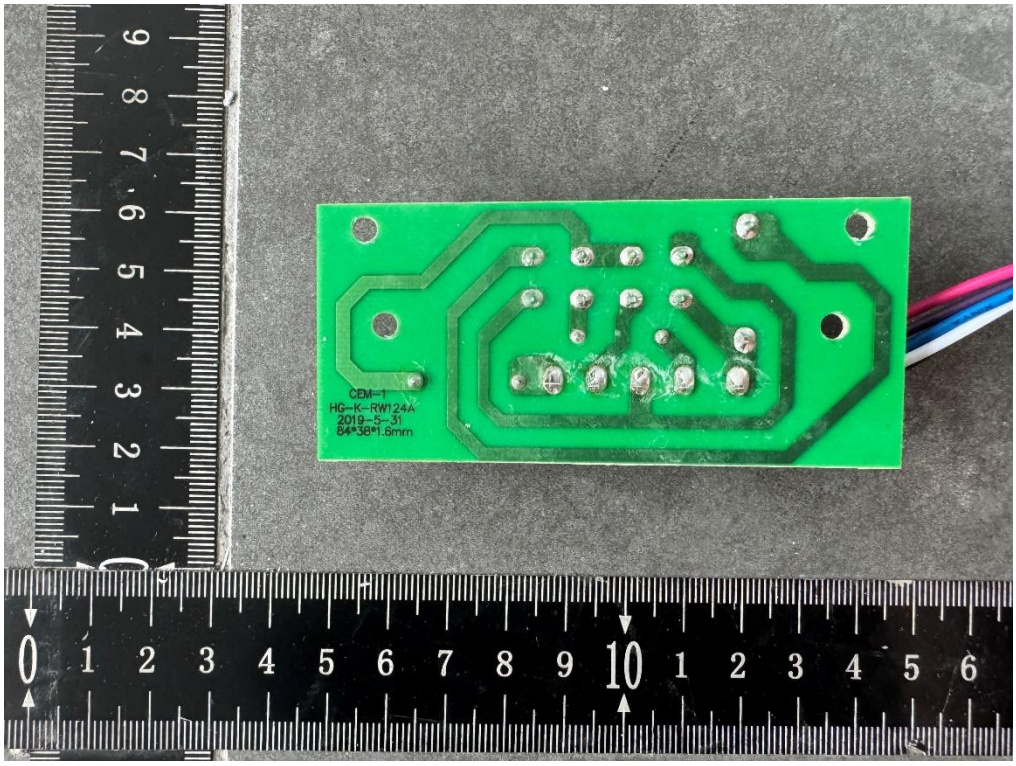

Fig.31 Switch PCB bottom view

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