



UL Test report

Client Name : Jieyang Yimei Plastic Electrical Appliance Co., Ltd.

Address : No.363, Lane Thirty-seven, Lau Wai, Fengmei Tangpu Village,
Jieyang Airport Economic Zone

Manufacturer : Jieyang Yimei Plastic Electrical Appliance Co., Ltd.

Address : No.363, Lane Thirty-seven, Lau Wai, Fengmei Tangpu Village,
Jieyang Airport Economic Zone

Product Name : Air Heater

Date : 2024-02-26

Shenzhen JLA Testing Co., Ltd



TEST REPORT
UL 60335-1:2016
Safety of household and similar electrical appliances
IEC 60335-2-30: 2009+AMD1:2016+AMD2:2021 ED5
Particular requirements for room heaters

Report

Report reference No. : JLA24BR2208S
Tested by (signature) : Peter Liu/
Reviewed by (+signature) : Kevin Duan/
Date of issue : 2024-02-26

Testing laboratory

Name : Shenzhen JLA Testing Co., Ltd
Address : 306, Building B, Xinlida Industrial Park, Guanlan Street, Longhua District, Shenzhen
Test location : Same as above

Client

Name : Jieyang Yimei Plastic Electrical Appliance Co., Ltd.
Address : No.363, Lane Thirty-seven, Lau Wai, Fengmei Tangpu Village, Jieyang Airport Economic Zone

Test specification

Standard : UL 60335-1:2016
IEC 60335-2-30: 2009+AMD1:2016+AMD2:2021 ED5
Non-standard test method : N.A.

Test item

Description : Air Heater
Model No. : E68S, E68
Power rating : 110V~ 50Hz 1200W
Manufacturer : Jieyang Yimei Plastic Electrical Appliance Co., Ltd.
Address : No.363, Lane Thirty-seven, Lau Wai, Fengmei Tangpu Village, Jieyang Airport Economic Zone
Model difference : All models share same circuit diagram, just different with appearance and power. All test performance on: E68S



	UL 60335-1 IEC 60335-2-30		
Clause	Requirement – Test	Result – Remark	Verdict

General remarks:	
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“(see remark #)” refers to a remark appended to the report. “(see appended table)” refers to a table appended to the report. Throughout this report a comma is used as the decimal separator. The test results presented in this report relate only to the object tested. This report shall not be reproduced except in full without the written approval of the testing Laboratory.	Note: All of test performed on the model: E68S Attached with: ANNEX A: list of critical components ANNEX B: Photographs of the EUT
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Marking label sample (for reference only)

Air Heater Model No: E68S Input: 110V~ 50Hz 1200W Made in China Jieyang Yimei Plastic Electrical Appliance Co., Ltd.	
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IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
4	GENERAL CONDITIONS FOR THE TESTS		P
4	Tests performed according to Cl.4, e.g. correct ambient temperature range, nature of supply, correct supply voltage, sequence of testing, most unfavourable position, etc.	Ambient temperature: 24.7°C RH: 58	P
6	CLASSIFICATION		P
6.1	Portable appliances shall be of class II or class III Stationary appliances shall be of class I, class II or class III	Portable appliance, class II	P
6.2	Heaters intended for use in greenhouses or building sites shall be at least IPX4. Duct fans shall be at least IPX2. (IEC 60335-2-30: 2009).	heater	N
7	MARKING AND INSTRUCTIONS		P
7.1	Rated voltage/voltage range (V):	110Vac	P
	Nature of supply or rated frequency/frequency range (Hz)	50Hz	P
	Rated input (W) or rated current (A):	1200W	P
	Manufacturer's or responsible vendor's name, trademark or identification mark	Jieyang Yimei Plastic Electrical Appliance Co., Ltd.	P
	Model or type reference	E68S	P
	Symbol for Class II, for Class II appliance only	☐	P
	IP number according to degree of protection against ingress of water, other than IPX0		N
7.2	Stationary appliances for multiple supplies shall be marked: "Warning: Before obtaining access to terminals, all supply circuits must be disconnected." This warning shall be placed in the vicinity of the terminal cover.	Portable appliance	N
7.3	Marking of range of rated value:	110Vac Single-phase	P
7.4	Appliance can be adjusted for different rated voltages, the voltage shall be discernible		N
7.5	Marking with more than one rated voltage/rated voltage ranges	110Vac	P
	Marking for upper and lower limits of rated input, if difference greater than 10%		N
7.6	Correct symbols used	Correct symbols used	P
7.7	Correct connection diagram, fixed to the appliance	No connection diagram	N
7.8	Not for type Z attachment:		P
	Marking of terminals for the neutral conductor (N)		N
	Marking of protective earthing terminals		N
7.9	Marking or placing of switches when operation might cause a hazard	0 show Off position	P
7.10	Indication of switches and regulating devices by use of figures, letters, or other visual means.	Use figures 0,1,2,3 represent different	P



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
		gear	
	The figure 0 indicates only OFF position, unless no confusion with the OFF position.	0 show Off position	P
7.11	Indication for direction of adjustment of thermostats, regulating devices, etc.		P
7.12	Instructions for safe use provided	See instruction manual	P
	If symbol 5641 of IEC 60417-1 is marked on the appliance, its meaning shall be explained. (IEC 60335-2-30: 2009).	portable heaters	P
7.12.1	Instruction sheet detailing special precautions necessary for installation	See instruction manual	P
	If rollers or feet are supplied separately with the heater, the installation instructions shall state how they have to be fixed to the heater. (IEC 60335-2-30: 2009)	portable heaters	P
7.12.2	Stationary appliance is not fitted with a supply cord and a plug, or with other means for disconnection from supply mains.	Portable appliance	N
7.12.3	Insulation in contact with parts temperature rise exceeding 50K, instruction shall state the fixed wiring appropriate temperature rating.	Not such parts used	N
7.12.4	Information for built-in	Not such appliance	N
	Dimensions of the space		N
	Dimensions and position of support		N
	Minimum distances between various parts and the surrounding structure		N
	Minimum dimensions of ventilating openings and their correct arrangement.		N
	Connection of the appliance to the supply mains and the interconnection of any separate components		N
	Plug accessible after installation/appliance incorporates a switch		N
7.12.5	Replacement statement (type X attachment)		N
	Replacement statement (type Y attachment)		P
	Replacement statement (type Z attachment)		N
7.12.6	Caution in the instructions for heating appliances with a non-self-resetting thermal cut-out		N
7.12.7	Instructions for fixed appliances stating how the appliance is to be fixed	Portable heater	N
7.12.8	Instructions for appliances connected to the water mains:		N
	- max. inlet water pressure (Pa)		N
	- min. inlet water pressure, if necessary (Pa)		N
	Instructions concerning new and old hose-sets for appliances connected to the water mains by detachable hose-sets		N



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
7.13	Instructions and other text required in official language	English language is used other language can be provided as required	P
7.14	Marking clearly legible and durable	The label is clearly legible after the rubbing test	P
	The height of symbol 5641 of IEC 60417-1 shall be at least 15 mm. The height of the words "Do not cover" shall be at least 3 mm. (IEC 60335-2-30: 2009)	No such appliance	N
7.15	Markings specified in 7.1 to 7.5 shall be on a main part	Marking label attached to top enclosure	P
	Marking in the appliance clearly Discernible from the outside	Marking label attached to top enclosure	P
	If necessary after removal of a cover mark clearly discernible		P
	For portable appliances remove or open this cover without the aid of a tool		P
	For stationary appliances and fixed appliances the name or trade mark or identification mark and the model or type reference visible installed as in normal use	No such appliance	N
	Indications for switches and controls placed on or near these components, not on misleading part.	Near the switch	P
	For heaters for mounting at high level, the indication of the different positions of switch shall be visible from a distance of 1 m; The marking concerning covering shall be visible after the heater has been installed. It shall not be placed on the back of portable heaters; The marking concerning removable fireguards shall be visible before fitting the fireguard. (IEC 60335-2-30: 2009)	Has not been installed in a high level	N
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link	Fuse can't replace	N
8	PROTECTION AGAINST ACCESS TO LIVE PARTS		P
8.1	Adequate protection against accidental contact with live parts		P
8.1.1	All positions; detachable parts removed	No such appliance	N
	Remove lamps covers, protection against contact with live parts Use of test finger: no contact with live parts	Test finger can not contact live parts through openings	P
	Detachable fireguards are not removed if their removal requires the use of a tool, provided That the instructions state that the plug must be removed from the socket-outlet before cleaning the reflector, or the heater		P



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
	incorporates a switch having a contact separation in all poles that provides full disconnection under overvoltage category III conditions. (IEC 60335-2-30: 2009)		
8.1.2	Use of test pin: no contact with live parts		N
8.1.3	Use of test probe: no contact with live parts of visible glowing heating elements	Use 41 type experiment core sampler	P
8.1.4	Accessible part not considered live if		N
	Extra low a. c. voltage: peak values not exceeding 42.4V		N
	Extra low d. c. voltage: not exceeding 42.4V		N
	or separated from live parts by protective impedance, d. c. current not exceeding 2 mA		N
	or separated from live parts by protective impedance, a. c. peak value not exceeding 7 mA		N
	For voltages peak value over 42.4V up to and including 450V, the capacitance not exceed 0.1 μ F		N
	For voltages peak value over 150V up to and including 5KV, the capacitance not exceed 45 μ F		N
8.1.5	Live parts protected at least by basic insulation before installation or assembly (checked by inspection and the test of 8.1.1)	Portable appliance	N
	Built – in appliances		N
	Fixed appliances		N
	Separate units		N
8.2	Class II appliances and constructions		P
	Adequately protected against accidental contact with basic insulation and metal parts separated form live parts with only basic insulation.		P
10	POWER INPUT AND CURRENT		P
10.1	Power input at rated voltage and normal operating temperature not deviating from rated input by more than shown in table; measured power input (W); rated input (W); deviation	see appended table 10.1	P
10.2	Marked with rated current, the current at normal Operating temperature not deviate from the rated current by more than shown in table: measured current at rated voltage under normal operation (A); rated current (A);deviation		N
11	HEATING		P
11.1	No excessive temperatures in normal use	See appended table 11	P
11.2	Placing and mounting of appliance as described		P
	Hand-held appliances are held in their normal position of use.		N
	Built-in appliances are installed in accordance with the		N



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
	instructions for installation		
	Appliances normally placed on a floor or table in use, are placed on the floor as near to the walls as possible		P
	Appliances normally fixed to a wall are fixed on one of the walls, as near to the other wall and to the floor or ceiling as is likely to occur in normal use, unless otherwise stated in the instructions for installation.		N
	Appliances normally fixed to a ceiling are fixed to the ceiling as near to the other walls as is likely to occur in normal use, unless otherwise stated in the instructions for installation.		N
	Other motor-operated appliances are positioned as follows:		N
	Appliances normally placed on a floor or table in use. Are placed on a horizontal support.		N
	Appliances normally fixed to a wall are fixed to A vertical support;		N
	Appliances normally fixed to a ceiling are fixed underneath a horizontal support		N
	Appliance incorporating heating elements are positioned as specified for motor-operated appliances		N
	Portable fan heaters are placed with the back 150 mm from one of the walls and away from the other wall; (IEC 60335-2-30: 2009)		P
11.3	Temperature rises determined by thermocouples or resistance method	Determined by thermocouple method	P
	The temperature rise of the felt pad is determined by means of thermocouples attached to small blackened disks of copper or brass, 15 mm in diameter and 1 mm thick. The disks are placed on the surface of the pad. (IEC 60335-2-30: 2009)		N
11.4	Heating appliances are operated under normal operation at 1.15 times the rated power input.	Test voltage: 254Vac	P
	If the temperature rise limits are exceeded in appliances incorporating motors, transformers or electronic circuits, and the power input is lower than the rated power input, the test is repeated with the appliance supplied at 1,06 times rated voltage. (IEC 60335-2-30: 2009)		N
11.5	Motor-operated appliances are operated under normal operation, supplied with the most unfavourable voltage between 0.94 times and 1.06 times the rated voltage		N
11.6	Combined appliances are operated under normal operation, supplied with the most unfavourable voltage between 0.94 times and 1.06 times the rated voltage	0.94 times and 1.06 times rated voltage are used	N



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
	Combined appliances are operated as heating appliances.(IEC 60335-2-30: 2009)	Not combined appliances	N
11.7	Hand-held appliances are operated for 20 minutes. Other appliances are operated until steady conditions are established.	No such appliance	N
	Appliances are operated until steady conditions are established. (IEC 60335-2-30: 2009)		P
11.8	Protective devices do not operate		P
	Sealing compound not flowing out		N
	Temperature rise of parts which are in contact with skin or hair. Shall not exceed the limits specified for handles which are continuously held	See appended table 11	P
	Massage pads with heating elements, the limit specified for heating pads in IEC 967 apply		P
13	LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE		P
13.1	Appliance is operated under normal operation For the duration specified in 11.7		P
13.2	Leakage current measured by means of circuit Described in Annex G	See appended table 13.2	P
13.3	Electric strength test of insulation	See appended table 13.3	P
	No breakdown during the test		P
15	MOISTURE RESISTANCE		P
15.1	Enclosure provides the degree of moisture protection according to classification of Appliance		N
15.1.1	Appliance other than IPX0 subjected to test as specified		N
15.1.2	Hand-held appliance turned continuously Through the most unfavourable positions during The test		N
	Built-in appliance installed according to the manufacture's instruction		N
	Appliances normally used on floor or table are placed on a horizontal unperforated support having a diameter of twice the oscillating tube radius minus 15 cm		N
	Appliances normally fixed to a wall are mounted as in normal use in the center of a wooden Board having specified dimension		N
15.2	Spillage of liquid does not affect the electrical insulation		N
	Overfilling test with additional amount of liquid		N
	Withstand electric strength test specified in 16.3		N
	No trace of water on insulation which can result in a reduction of distances and clearances below values specified in 29.1		N
15.3	Humidity treatment for 48h	48hrs,93%, 25.0℃	P
	Withstanding the test of Cl.16		P



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
16	LEAKAGE CURRENT AND ELECTRIC STRENGTH		P
16.1	No excessive leakage current and adequate insulation and electric strength (tests 16.2 and 16.3)	See appended table 16.1	P
16.2	Single-phase appliances: test voltage 1.06 times rated voltage.....		P
	Three-phase appliances: test voltage 1.06 times rated voltage divided by $\sqrt{3}$		N
	Leakage current measurements		P
16.3	Electric strength tests according to table 7		N
	No breakdown during the tests		P
17	OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUIT		N
	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use	No Transformer	N
	Appliance supplied with 1.06 or 0.94 times rated voltage and the most unfavourable short-circuit or overload likely to occur in normal use applied		N
	Temperature rise of insulation of the conductors of safety extra-low voltage circuits not exceeding the relevant value specified in table 3 by more than 15K		N
	Temperature of the winding not exceeding the. Value specified in table 6 temperature; type of Appliance; insulation class; measured Temperature(°C)		N
19	ABNORMAL OPERATION		P
19.1	The risk of fire or mechanical damage under abnormal or careless operation obviated	The risk of fire or mechanical damage under abnormal or careless operation obviated	P
19.2	Test of appliance with heating elements with restricted heat dissipation; test voltage(V): power input of 0.85 times rated power input	Test voltage: 209Vac	P
19.3	Test of appliance with heating elements with restricted heat dissipation; test voltage(V): power input of 1.24 times rated power input	Test voltage: 266Vac	P
19.4	Test conditions as in Cl.11, the power input being 1.15 times rated power input, any control limiting the temperature during tests of Cl.11 to the sheath	Temperature fuse Test voltage: 254Vac	P
19.5	Test of 19.4 repeated with reversed polarity and the other end of the heating element connected to the sheath	No take tubular outer sheath	N
19.6	Appliances with PTC heating elements tested as specified. Supplied at rated voltage, establishing steady conditions, then the voltage increased in steps by 1.5 times rated voltage is reached or until the heating	No PTC heating elements used	N



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
	element ruptures		
19.7	Stalling test by locking the rotor if the locked rotor torque is smaller than the full load torque or locking moving parts	No motor	N
	Locked rotor, motor capacitors open circuited or short-circuited, if required	No capacitors	N
	Appliances with timer or controller supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed		N
	Appliances intended to be used under the feet of sitting person, massage pads, chairs and beds are operated until steady conditions are established. Other appliances are operated for 30 s	No such appliance	N
	Test period at rated voltage(s or min) or until Steady state conditions established		P
	Winding temperatures not exceeding limiting Temperature; type of appliance; insulation class; measured temperature(°C)		P
19.8	Three-phase motors operated at rated voltage with one phase disconnected		N
19.9	Running overload test		N
19.10	Series motor operated at 1.3 times rated voltage for 1min		N
19.10.1	Appliances incorporating a liquid container which has to be filled by user during normal use are supplied at rated voltage and operated without liquid	No liquid container provided	N
19.11	Electronic circuits, compliance checked by evaluation of the fault condition specified in 19.11.2 for all circuits or parts of circuits, unless they comply with the conditions specified in 19.11.1	No printboard	N
19.11.1	Before applying the fault conditions in 19.11.2, it is checked if circuits or parts of circuit meet both the following conditions;		N
	The electronic circuit is a low-power circuit, that is the maximum power at low-power points does not exceed 15W according to the tests specified		N
	The protection against electric shock, fire hazard mechanical hazard or dangerous malfunction in other parts of the appliance does not rely on the correct functioning of the electronic circuit		N
19.11.2	Fault conditions applied one at a time, the appliance operated under conditions specified in Cl.11, but supplied at rated voltage, the duration of the tests as specified:	Fault conditions applied one at a time, the appliance operated under conditions specified in Cl.11, but supplied at rated voltage, the	N



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
		duration of the tests were recorded	
	a) short-circuit of creepage distances and clearances between live parts of different potential, if these distances are less than the values specified in 29.1, unless the relevant part is adequately encapsulated		N
	b) open circuit at the terminals of any component		N
	c) short-circuit of capacitors unless they comply with IEC 384-14 or 14.2 of IEC 65	Comply with IEC 384-14 or 14.2 of IEC 65	N
	d) short-circuit of any two terminals of an electronic component, other than integrated circuit. This fault condition is not applied between the circuits of an optocoupler	short-circuit of any two terminals of an electronic component	N
	e) failure of traces in the diode mode		N
	f) failure of an integrated circuit		N
	g) failure of an electronic power switching device		
19.11.3	If the appliance incorporates a protective electronic circuit which operates to ensure compliance with clause 19, the relevant test is repeated with a single fault simulated, as indicated in a) to f) of 19.11.2		
	During and after each test the following is Checked		N
	-the temperature rise of the windings do not exceed the values specified in table 6		N
	-the appliance complies with conditions specified in 19.13	Appliance does not emit flames, metal, poisonous or ignitable gas in hazardous amounts	N
	- any current flowing through protective impedance not exceeding the limits specified in 8.14		N
	If a conductor of a printed board becomes open circuited, the appliance is considered to have withstood the particular test, provided all three of the following conditions are met:		N
	-the material of the printed circuit board withstands the burning test of 20.1 of IEC 65		N
	-any loosened conductor does not reduce the creepage distances or clearances between live part and accessible metal parts	loosened conductor does not reduce the creepage distances or clearances between live part and accessible metal parts	N



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
	the appliance withstands the tests of 19.11.2 with open circuited conductor bridged		N
19.11.4	Appliances having a device with an off position obtained by electronic disconnection, or	No such appliance	N
	a device that can be placed in the stand-by mode,		N
	subjected to the tests of 19.11.4.1 to 19.11.4.7		N
	Appliances incorporating a protective electronic circuit subjected to the tests of 19.11.4.1 to 19.11.4.7, except that		N
	appliances operated for 30 s or 5 min during the test of 19.7 are not subjected to the tests for electromagnetic phenomena.		N
19.11.4.1	The appliance is subjected to electrostatic discharges in accordance with IEC 61000-4-2, test level 4		N
19.11.4.2	The appliance is subjected to radiated fields in accordance with IEC 61000-4-3, test level 3		N
19.11.4.3	The appliance is subjected to fast transient bursts in accordance with IEC 61000-4-4, test level 3 or 4 as specified		N
19.11.4.4	The power supply terminals of the appliance subjected to voltage surges in accordance with IEC 61000-4-5, test level 3 or 4 as specified		N
	Earthed heating elements in class I appliances disconnected		N
19.11.4.5	The appliance is subjected to injected currents in accordance with IEC 61000-4-6, test level 3		N
19.11.4.6	The appliance is subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-11		N
19.11.4.7	The appliance is subjected to mains signals in accordance with IEC 61000-4-13, test level class 2		N
19.11.4.8	The appliance is supplied at rated voltage and operated under normal operation. After 60s the power supply is reduces to a level such that the appliance ceases to respond or a programmable component cease to operate.		N
	The appliance continues to operate normally or requires a manual operation to restart		N
19.12	If the safety of the appliance for any of the fault conditions specified in 19.11.2 depends on the operation of a miniature fuse-link complying with IEC 127, the test is repeated, measuring the current flowing through the fuse-link(A)		N
19.13	During the tests the appliance does not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts	during the tests the appliance does not emit flames, molten metal, poisonous or	P



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
		ignitable gas in hazardous amounts	
	Temperature rises not exceeding the values		P
	Enclosures not deformed to such an extent that compliance with Cl.8 is impaired	Enclosures not deformed	P
	If appliance still operable, shall comply with 20.2		P
	Appliance, other than Class III, withstands the electric strength test of 16.3	Please refer to appended table 19.13	P
	-basic insulation: 1000	Please refer to appended table 19.13	P
	-supplementary insulation: 2750		P
19.101	Appliances are operated as specified in Clause 11 but the power input is 1,24 times rated power input. (IEC 60335-2-30: 2009)		P
	All thermal controls that operate during the test of Clause 11 are short-circuited simultaneously. (IEC 60335-2-30: 2009)		P
19.102	Circular and similar portable heaters that emit heat in several directions are placed as close as possible to one of the walls of the test corner and operated at 1,24 times rated power input. (IEC 60335-2-30: 2009)	Portable heaters	P
19.103	Heaters are operated as specified in Clause 11 but with the appliance covered. This does not apply to. (IEC 60335-2-30: 2009)		P
	– heaters for mounting at high level, except those intended to be installed in wardrobes;		N
	– visibly glowing radiant heaters;		N
	– Portable fan heaters.		N
19.104	Built-in heaters having air outlets in the floor, window-sill or similar locations are operated as specified in Clause 11 with the grilles covered. Thermal controls that operate during the test of Clause 11 are short-circuited. (IEC 60335-2-30: 2009)	Portable heaters	N
19.105	Heaters having a liquid container that is intended to be filled by the user are operated as specified in Clause 11 but with the container empty. (IEC 60335-2-30: 2009)	No liquid container	N
19.106	Fan heaters and other heaters incorporating motors are operated as specified in Clause 11. However, the heater is supplied at rated voltage with the motor rotor locked. (IEC 60335-2-30: 2009)		N
19.107	Fan heaters having an enclosure substantially of non-metallic material are operated at their working voltage as specified in Clause 11 except that the motor is supplied		N



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
	separately at its working voltage. Thermal controls that operate during the test of Clause 11 are short-circuited. (IEC 60335-2-30: 2009)		
19.108	Portable fan heaters are operated as specified in Clause 11. A rectangular sheet of paper is held against air inlets, without additional pressure. The paper has an area sufficient to cover the surface where air inlets are situated and is moved in any direction in order to restrict the airflow so that the most unfavourable conditions are established. (IEC 60335-2-30: 2009)		N
19.109	Portable fan heaters are operated as specified in Clause 11, but placed so that the airflow is directed against one of the walls of the test corner. The heater is then moved as near as possible to the wall without the thermal cut-out operating. Thermal controls that operate during the test of Clause 11 are short-circuited. (IEC 60335-2-30: 2009)		N
19.110	Portable visibly glowing radiant heaters are operated as specified in Clause 11 but placed so that the radiation is directed against one of the walls of the test corner. The heater is placed with the fireguard 500 mm from the wall and this distance is progressively increased so that the highest wall temperature is measured. (IEC 60335-2-30: 2009)		P
19.111	Visibly glowing radiant heaters, other than heaters for mounting at high level, are operated as specified in Clause 11 but at rated power input. (IEC 60335-2-30: 2009)		P
19.112	Portable heaters are operated as specified in Clause 11 but placed on a soft-wood surface that is covered with a double layer of bleached cotton gauze having a specific mass of approximately 40 g/m ² . The heater is then pushed so that it overturns in the most unfavourable position. (IEC 60335-2-30: 2009)		P
19.113	Fan heaters having an enclosure substantially of non-metallic material are operated as specified in Clause 11, except that all self-resetting thermal cut-outs and controls that operate during the test of Clause 11 are short-circuited and the fan motor is stalled. (IEC 60335-2-30: 2009)		N
19.114	A quantity of oil is drained from the container of oil-filled radiators until the oil level is approximately 10 mm above the heating element. The container is then resealed and the appliance operated as specified in Clause 11 but at rated power input. (IEC 60335-2-30: 2009)	No oil	N
20	STABILITY AND MECHANICAL HAZARDS		P



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
20.1	Adequate stability		N
	Tilting test through an angle of 10° (appliance placed on an inclined plane/horizontal plane); appliance does not overturn	Appliance does not overturn	P
	Tilting test repeated on appliances with heating elements, angle of inclination increased to 15°	Appliance does not overturn	P
	Possible heating test on overturned position; temperature rise does not exceed values shown in table 7	Appliance does not overturn	N
	Portable heaters shall have adequate stability. (IEC 60335-2-30: 2009)	Appliance does not overturn	P
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury	No moving parts	N
	Protective enclosures, guards and similar parts are non-detachable	No moving parts	N
	Adequate mechanical strength and fixing of protective enclosures		N
	Self-resetting thermal cut-outs and over current protective devices not causing a hazard	No such components	N
	Not possible to touch dangerous moving parts with test finger	No moving parts	N
21	MECHANICAL STRENGTH		P
	Appliance has adequate mechanical strength and is constructed as to withstand rough handling		P
	No damage after three blows applied to various parts of the enclosure , impact energy $0.5j \pm 0.04j$	Impact energy $0.5j \pm 0.04j$ three blows on panel, no any damage	P
	Appliance shall show no damage which could impair compliance with 8.1,15.1 and 29.1	Appliance shall show no damage which could impair compliance with 8.1,15.1and 29.1	P
	If necessary , supplementary or reinforced insulation subjected to the electric strength test	Appliance no damage	N
	If necessary, repetition of groups of three blows on a new sample	Appliance no damage	N
21.101	Visibly glowing radiant heaters, other than heaters for mounting at high level, are placed so that the central part of the fireguard is horizontal. A mass of 5 kg having a flat base 100 mm in diameter is placed for 1 min on the central part of the fireguard. (IEC 60335-2-30: 2009)	No obvious deformation	P
21.102	Fixed appliances having a hinged part, the movement of which is restricted by chains or similar means, are fixed and the hinged part is allowed to drop under its own weight. This test is carried out five times. (IEC 60335-2-	Portable heater	N



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
	30: 2009)		
21.103	The suspension means of panel heaters for ceiling mounting shall have adequate strength		N
22	CONSTRUCTION		P
22.1	Appliance marked with the first numeral of the IP system: relevant requirements of IEC529 are fulfilled	No such appliance	N
22.2	Stationary appliance: means to provide all-pole disconnection from the supply provided, the following means being available	Portable heater	N
	-a supply cord fitted with a plug		N
	-a switch complying with 24.3		N
	-a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided		N
	-a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided		N
	-an appliance coupler		N
	Single-phase Class I appliance with heating elements, intended to be permanently connected to fixed wiring, incorporating single-pole switches or single-pole protective devices for the disconnection of the heating element(s): the switches/devices being connected in the phase conductor		N
22.3	Appliance provided with pins: no undue strain on socket-outlets		N
	Applied torque not exceeding 0.25N.m		N
22.4	Appliance for heating liquids and appliance causing undue vibration not provided with pins for	No such appliance	N
22.5	No risk of electric shock when touching the pins of the plug	No Capacitor	N
22.6	Electrical insulation not affected by condensing water or leaking liquid		N
	Electrical insulation of Class II appliances not affected in case of a hose rupture or seal leak		N
22.7	Adequate safeguards against the risk of excessive pressure in appliances provided with steam-producing devices	No such appliance	N
	Appliances containing liquid shall be constructed so that they withstand the pressure likely to occur during use. (IEC 60335-2-30: 2009)	No such appliance	N
22.8	Electrical connections not subject to pulling during cleaning of compartments to which access can be gained without the aid of a tool. And which are likely to be cleaned in normal use	No such compartments	N
22.9	Insulation internal wiring, windings commutators and slip rings not exposed to oil, grease or similar substances	Not exposed to oil, grease or similar	N



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
		substances	
	Adequate insulating properties of oil or grease to which insulation is exposed	Not exposed to substances such as oil or grease	N
22.10	Location or protection of reset buttons of non-self-resetting controls is so that accidental resetting is unlikely	No resetting controls	N
22.11	Reliable fixing of non-detachable parts which	Non-detachable parts	P
22.12	Handles, knobs etc. fixed in a reliable manner		N
	Fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible		N
	Axial force 15 N applied to parts, the shape being so that an axial pull is unlikely to be applied		N
	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied		N
22.13	Unlikely that handles, when gripped as in normal use, make the operators hand touch parts having a temperature rise exceeding the value specified for handles which are held for short periods only	No handle	N
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance	No sharp edge	N
	No exposed pointed ends of self tapping screws etc., liable to be touched by the user in normal use or during user maintenance		N
22.15	Storage hooks and the like for flexible cords smooth and well rounded		N
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands, no undue wear of contacts		N
	Cord reel tested with 6000 operations, as specified		N
	Electric strength test of 16.3, voltage of 1000 V applied		N
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner	No such appliance	N
22.18	Current-carrying parts and other metal parts resistant to corrosion under normal conditions of use		N
22.19	Driving belts not used as electrical insulation		N
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless material used is non-corrosive, non-hygroscopic and non-combustible	Material used is non-corrosive Non-hygroscopic and non-combustible	P
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless impregnated	No such material used for insulation	N
22.22	Asbestos not used in the construction of the appliance	Asbestos not used	N
	Asbestos is used, but the liberation of dust of		N



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
	impregnated asbestos or of asbestos fibres into the surrounding air adequately prevented		
22.23	Oils containing polychlorinated biphenyl (PCB) not used	No any oils used	N
22.24	Bare heating elements shall be supported to prevent excessive displacement occurring during normal use. The rupture of a heating element shall not give rise to a hazard. (IEC 60335-2-30: 2009)	Can't touch metal part	P
22.25	Sagging heating conductors cannot come into contact with accessible metal parts	Can't contact	P
22.26	The insulation between parts operation at safety extra-low voltage and other live parts complies with the requirements for double or reinforced insulation		P
22.27	Parts connected by protective impedance separated by double or reinforced insulation	No protective impedance	N
22.28	Metal parts of Class II appliances conductively connected to gas pipes or in contact with water separated from live parts by double or reinforced insulation	Not connected to gas mains or to the water mains	N
22.29	Class II appliances permanently connected to fixed wiring so constructed that the required degree of protection against electric shock is maintained after installation		N
22.30	Parts or class II construction serving as supplementary or reinforced insulation fixed so that they cannot be removed without being seriously damaged, or		P
	So constructed that they cannot be replaced in an incorrect position, and so that if they are omitted, the appliance is rendered inoperable or manifestly incomplete		P
22.31	Creepage distances and clearances over supplementary and reinforced insulation not reduced below values specified in 29.1 as a result of wear	below values specified in 29.1 as a result of wear	P
	Creepage distances and clearances over supplementary and reinforced insulation not reduced below values specified in 29.1 if wires, screws etc, becomes loose		P
22.32	Supplementary and reinforced insulation designed or protected against deposition of dirt or dust	Supplementary and reinforced Insulation designed or protected against deposition of dirt or dust	P
	Ceramic material not tightly sintered, similar material or beads alone not used as supplementary or reinforced insulation	No such material used	N
	Supplementary insulation of natural or synthetic rubber resistant to ageing, or arranged and dimensioned so that creepage distances are not reduced below values specified in 29.1	No such material used	N



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Clause	Requirement – Test	Result – Remark	Verdict
22.33	Conductive liquids which are or may become accessible in normal use are not in direct contact with live parts	No liquid	N
	Conductive liquids are not in direct contact with basic insulation or reinforced insulation in class II constructions	No such appliance	N
22.34	Shafts of operating knobs, handles, levers etc. not live, unless the shaft is not accessible when the part is removed	No such appliance	N
22.35	Handles, levers and knobs, held or actuated in normal use, not becoming live in the event of an insulation fault	No such appliance	N
	Such parts being of metal, and their shafts or fixings are likely to becoming live in the event of an insulation fault, they are either adequately covered by insulation material, or their accessible parts are separated from their shafts or fixings by supplementary insulation	No such appliance	N
	This requirement does not apply to handles, levers and knobs on stationary appliances other than those of electrical components, provided they are either reliably connected to an earthing terminal or earthing contact, or separated from live parts by earthed metal	Portable appliance	N
22.36	Handles continuously held in the hand in normal use are so constructed that when gripped as in normal use, the operator's hand is not likely to touch metal parts, unless they are separated from live parts by double or reinforced insulation	No Handles	N
22.37	Capacitors in Class II appliances not connected to accessible metal parts, unless complying with 22.42		P
	Metal casings of capacitors in Class II appliances separated from accessible metal parts by supplementary insulation, unless complying with 22.42	No such capacitor used	N
22.38	Capacitors not connected between the contacts of a thermal cut-out	No such capacitor	N
22.39	Lamp holders only used for the connection of lamps	No lamp holder used	N
22.40	Motor-operated appliances and combined appliances, intended to be moved while in operation or which have accessible moving parts, are fitted with a switch to control the motor		N
	The actuating member of this switch easily visible accessible		N
22.41	Mercury switches shall be mounted so that the mercury capsule cannot fall out of position or be damaged by the clamping means	No such components containing mercury used	N
22.42	Protective impedance shall consist of at least two separate components	No protective impedance	N
22.43	Appliances adjustable for different voltages, accidental		P



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
	changing of the setting of the voltage unlikely to occur		
22.44	Appliances shall not have an enclosure that is shaped and decorated so that the appliance is likely to be treated as a toy by children.	No shape part	N
22.45	When air is used as reinforced insulation, the appliance shall be constructed so that clearances cannot be reduced below the values specified in 29.1.3 due to deformation as a result of an external force applied to the enclosure.		N
22.46	Software used in protective electronic circuits shall be software class B or software class C.	No software	N
22.47	Appliances intended to be connected to the water mains shall withstand the water pressure expected in normal use.		N
22.48	Appliances intended to be connected to the water mains shall be constructed to prevent back siphonage of non-potable water into the water mains.		N
22.49	For remote operation, the duration of operation shall be set before the appliance can be started, unless		N
	the appliance switches off automatically or can operate continuously without hazard		N
22.50	Controls incorporated in the appliance take priority over controls actuated by remote operation		N
22.51	A control on the appliance being manually adjusted to the setting for remote operation before the appliance can be operated in this mode		N
	There is a visual indication showing that the appliance is adjusted for remote operation		N
	Manual setting and visual indication not necessary on appliances that can operate as follows, without giving rise to a hazard:		N
	- operate continuously,		N
	- operate automatically, or		N
	- be operated remotely		N
	Socket-outlets on appliances accessible to the user in accordance with the socket-outlet system used in the country in which the appliance is sold		N
22.101	Heaters, other than heaters for mounting at high level, shall be guarded in order to prevent contact with heating elements. (IEC 60335-2-30: 2009)		P
22.102	Fireguards shall have a total open area not less than 50 % of the surface area of the fireguard. (IEC 60335-2-30: 2009)		P
22.103	Fireguards shall be securely attached to the heater so that it is not possible to detach them completely without		P



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
	the use of a tool.(IEC 60335-2-30: 2009)		
22.104	Appliances for wall mounting shall be constructed so that they can be securely fixed to a wall. (IEC 60335-2-30: 2009)	Portable appliance	N
22.105	Accessible glass panels in direct contact with heating elements shall withstand thermal shock. (IEC 60335-2-30: 2009)	No glass	N
22.106	Portable appliances shall not have openings on the underside that would allow small items to penetrate and touch live parts. (IEC 60335-2-30: 2009)	No perforation	P
22.107	Visibly glowing radiant heaters intended to be fixed to a wall or ceiling shall be constructed so that the direction of radiation cannot be significantly changed without the use of a tool after the heater has been fixed. (IEC 60335-2-30: 2009)	Portable appliance	N
22.108	Visibly glowing radiant heaters, other than heaters for mounting at high level, shall not incorporate thermostats, timers or similar means which switch on heating elements automatically, unless at least one heating element is already visibly glowing. (IEC 60335-2-30: 2009)		N
22.109	The disconnection of the supply by a switch in the off position shall not rely on electronic components. (IEC 60335-2-30: 2009)		P
22.Z1	Appliances are not allowed to have an enclosure which is shaped and decorated so that the appliance is likely to be treated as a toy by children	No such enclosure used	P
22.Z2	Fully halogenated chlorofluorocarbons (CFC'S) shall not be used	No such material used	P
23	INTERNAL WIRING		P
23.1	Wireways smooth and free from sharp edges		P
	Wires protected against contact with burrs, cooling fins etc.		P
	Wiring effectively prevented from coming into contact with moving parts		P
23.2	Beads etc. on live wires cannot change their position, and are not resting on sharp edges or corners	No beads are used	N
	Beads inside flexible metal conducts contained within an insulating sleeve	No such beads	N
23.3	Electrical connections and internal conductors movable relatively to each other not exposed to undue stress		P
	Flexible metallic tubes not causing damage to insulation of conductors	No such metallic tubes	N
	Open-coil springs not used	No such springs used	N
	Adequate insulating lining provided inside a coiled spring,		N



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Clause	Requirement – Test	Result – Remark	Verdict
	the turns of which touch one another		
	No damage after 10,000 flexing		N
	Electric strength test, 1000V between live parts and metal parts		P
23.4	Bare internal wiring sufficiently rigid and fixed	No bare wiring used	N
23.5	The basic insulation of internal wiring withstanding the electrical stress likely to occur in normal use		P
	No breakdown when a voltage of 2000v is applied for 15min in between the conductor and metal foil wrapped around the insulation	No breakdown	P
23.6	Sleeving used as supplementary insulation on normal wiring retained in position by positive means	Sleeving is shrinkable tube	P
23.7	Only the colour combination green/yellow used for earthing conductors		P
23.8	Aluminium wires not used for internal wiring		
23.9	No lead-tin soldering of stranded conductors where they are subject to contact pressure, unless	No such conductor used	N
	Clamping means so constructed that there is no link of bad contact due to cold flow of the solder	There is no risk of bad contact due to cold flow of the solder	N
23.10	The insulation and sheath of internal wiring, incorporated in external hoses for the connection of an appliance to the water mains, at least equivalent to that of light polyvinyl chloride sheathed flexible cord (60227 IEC 52)		N
24	COMPONENTS		P
24.1	Components comply with safety requirements in relevant IEC standards		P
	List of components	See ANNEX A	P
	Components not tested and found to comply with relevant IEC standard for the number of cycles specified are tested in accordance with 24.1.1 to 24.1.9	Has been experiment	N
	Components not tested and found to comply with relevant IEC standard, components not marked or not used in accordance with its marking, tested under the conditions occurring in the appliance	No such components	N
	Lampholders and starterholders not being tested and found to comply with the relevant IEC standard, tested as a part of the appliance and additionally according to the gauging and interchangeability requirements of the relevant IEC standard		N
24.1.1	Capacitors likely to be permanently subjected to the supply voltage and used for radio interference suppression or for voltage dividing, complying with IEC 60384-14, or		N



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
	tested according to annex F		N
24.1.2	Safety isolating transformers complying with IEC 61558-2-6, or		N
	tested according to annex G		N
24.1.3	Switches complying with IEC 61058-1, the number of cycles of operation being at least 10 000, or	The component has been approved	N
	tested according to annex H		N
	If the switch operates a relay or contactor, the complete switching system is subjected to the test		N
24.1.4	Automatic controls complying with IEC 60730-1 with relevant part 2. The number of cycles of operation being:		N
	- thermostats: 10 000		N
	- temperature limiters: 1 000		N
	- self-resetting thermal cut-outs: 300		N
	- voltage maintained non-self-resetting thermal cut-outs: 1000		N
	- other non-self-resetting thermal cut-outs: 30		N
	- timers: 3 000		N
	- energy regulators: 10 000		N
	Thermal motor protectors are tested in combination with their motor under the conditions specified in Annex D		N
	For water valves containing live parts and that are incorporated in external hoses for connection of an appliance to the water mains, the degree of protection declared for subclause 6.5.2 of IEC 60730-2-8 is IPX7		N
24.1.5	Appliance couplers complying with IEC 60320-1		N
	However, appliances classified higher than IPX0, the appliance couplers complying with IEC 60320-2-3		N
	Interconnection couplers complying with IEC 60320-2-2		N
24.1.6	Small lamp holders similar to E10 lampholders complying with IEC 60238, the requirements for E10 lampholders being applicable	No such appliance	N
24.1.7	If the remote operation of the appliance is via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is IEC 62151		N
24.1.8	The relevant standard for thermal links is IEC 60691. Thermal links not complying with IEC 60691 are considered to be an intentionally weak part for the purposes of Clause 19		N
24.1.9	Relays, other than motor starting relays, tested as part of the appliance		N
	They are also tested in accordance with Clause 17 of IEC 60730-1, the number of operations in 24.1.4 selected according to the relay function in the appliance.....		N



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Clause	Requirement – Test	Result – Remark	Verdict
24.2	Automatic controls complying with IEC 730: additional tests according to this standard and 11.3.5 to 11.3.8 and Cl.17 of IEC 730 as type 1	No such controls used	N
24.3	Switches intended for all-pole disconnection of stationary appliances are directly connected to the supply terminals and having a contact separation in all poles, providing full disconnection under overvoltage category III conditions	Mobile equipment	N
24.4	Plugs and socket-outlets for extra-low voltage circuits and heating elements, not interchangeable with plugs and socket-outlets listed in IEC 60083 or IEC 60906-1 or with connectors and appliance inlets complying with the standard sheets of IEC 60320-1		P
24.5	Capacitors in auxiliary windings of motors marked with their rated voltage and capacitance and used accordingly		N
	Voltage across capacitors in series with a motor winding does not exceed 1,1 times rated voltage, when the appliance is supplied at 1,1 times rated voltage under minimum load		N
24.6	Working voltage of motors connected to the supply mains and having basic insulation that is inadequate for the rated voltage of the appliance, not exceeding 42V		N
	In addition, the motors are complying with the requirements of Annex I		N
24.7	Hose-sets for connection of appliances to the water mains, complying with IEC 61770 and supplied with the appliance		N
24.101	Devices incorporated in oil-filled radiators in order to comply with 19.114 shall not be self-resetting. (IEC 60335-2-30: 2009)		N
25	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS		P
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:		P
	Supply cord fitted with a plug		P
	An appliance inlet having at least the same degree of protection against moisture as required for the appliance		N
	Pins for insertion into socket-outlets		N
25.2	Appliance other than stationary appliance not provided with more than one means of connection to the supply	Not multiple supply appliance	N
	Stationary appliances for multiple supply may be provided with more than one means of connection provided the relevant circuits are adequately insulated from each other, provided electric strength test of 1250V for 1 min between each means of connection causes no breakdown	Not stationary appliance for multiple supply	N
25.3	Connection of supply wires for appliance intended to be	The appliance is not	N



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
	permanently connected to fixed wiring possible after the appliance has been fixed to its support	intended to be permanently connected to fixed wiring	
	-appliance provided with a set of terminals for the connection of cables or fixed wiring, cross-sectional areas specified in 26.2		N
	-appliance provided with a set of terminals allowing the connection of a flexible cord		N
	-appliance provided with a set of terminals and cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate type of cable or conduit		N
25.4	Cable and conduit entries, rated current of appliance not exceeding 16A, dimensions, according table 8	The appliance is not intended to be permanently connected to fixed wiring	N
	Introduction of conduit or cable does not affect the protection against electric shock or reduce creepage distances and clearances below values specified in 29.1		P
25.5	Method for assemble supply cord with the appliance	Type Y attachment	P
25.6	Plugs fitted with only one flexible cord		P
	Supply cords of single-phase portable appliances having a rated current not exceeding 16A, provided with a plug complying with the following standard sheets of IEC83	Being approved by VDE	P
25.7	Temperature rise of external metal parts exceeding 75K, PVC cord not used		N
	PVC cord used: appliance so constructed that the supply cord is not likely to touch such metal parts in normal use		N
	PVC supply cord appropriate for higher temperatures, type Y or type Z attachment used	Type Y attachment used	P
	Flat twin tinsel cord is allowed for hand-held		N
	Shown in table 10; pull (N); torque (Nm) (not on automatic cord reel)	Torque test: 0.35N m for 1 min	P
	Max. 2cm displacement of the cord, and conductors not moved more than 1mm in the terminals	No legible movement	P
	Creepage distances and clearances not reduced below values specified in 29.1	After test Creepage distances and clearances meet the requirements of 29.1	P
25.8	Nominal cross-sectional area of supply cords according to table 11; rated current (A); cross-sectional area (mm ²)....		P
25.9	Supply cord not in contact with sharp points or edges		P
25.10	Green/yellow core for earthing purposes in Class I		P



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
	appliance		
25.11	Conductors of supply cords not consolidated by lead-tin soldering where they are subject to contact pressure, unless		P
	clamping means so constructed that there is no risk of bad contacts due to cold flow of the solder		P
25.12	Moulding the cord to part of the enclosure does not damage the insulation of the supply cord		P
25.13	Inlet opening so shaped as to prevent damage to the supply cord		P
	Unless the enclosure at the inlet opening is of insulation material, a non-detachable lining or bushing complying with 29.3 for supplementary insulation provided		P
	If unsheathed supply cord, a similar additional bushing or lining is required, unless		N
	The appliance is class 0	Class II appliance	N
25.14	Supply cords adequately protected against excessive flexing		P
	Flexing test:		P
	Applied force (N):	10N	P
	Number of flexing:	10000	P
	The test does not result in:		P
	Short circuit between the conductors		P
	Breakage of more than 10% of the strands of any conductor		P
	Separation of the conductor from its terminal		P
	Loosening of any cord guard		P
	Damage, within the meaning of the standard, to the cord or the cord guard		P
	Broken strands piercing the insulation and becoming accessible		P
25.15	Conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorage		P
	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged		P
	Pull and torque test of supply cord, values shown in table 10: pull (N); torque (not on automatic cord reel) (Nm)		P
	Max. 2 mm displacement of the cord		P
25.16	Cord anchorages for type X attachments so constructed and located that	Type Y attachment	N
	Replacement of the cord is easily possible		N
	It is clear how the relief from strain and the prevention of twisting are obtained		N



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Clause	Requirement – Test	Result – Remark	Verdict
	They are suitable for different types of cord		N
	Cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless separated from		N
	Accessible metal parts by supplementary insulation		N
	The cord is not clamped by a metal screw which bears directly on the cord		P
	At least one part of the cord anchorage securely fixed to the appliance, unless part of a specially prepared cord		N
	Screws which have to be operated when replacing the cord do not fix any other component, if applicable		N
	If labyrinths can be bypassed the test of 25.15 is nevertheless with stood		N
	For Class I, II and III appliances: they are of insulating material or are provided with an insulating lining, unless a failure of the insulation of the cord does not make accessible metal parts live		N
	For Class II appliances: they are of insulating material, or if of metal, they are insulated from accessible metal parts by supplementary insulation		P
25.17	Adequate cord anchorage for type Y and Z attachment	Type Y attachment	P
25.18	Cord anchorage only accessible with the aid of a tool, or so constructed that the cord only can be fitted with the aid of a tool		P
25.19	Type X attachment, glands not used as cord anchorage in portable appliances	Type Y attachment	N
	Tying the cord into a knot or tying the cord with string not used		N
25.20	Conductors of the supply cord for type Y and Z attachment adequately additionally insulated	Being approved by VDE	P
25.21	Space for supply cable for fixed wiring or supply cord for type X attachment constructed to permit checking of conductors with respect to correct positioning and connection before fitting any cover, no risk of damage, no contact with accessible metal parts if a conductor becomes loose, etc.	Type Y attachment	N
	For portable appliances, the uninsulated end of a conductor prevented from any contact with accessible metal parts, unless the end of the cord is such that the conductors are unlikely to slip free		N
25.22	Appliance inlet		P
	-live parts not accessible during insertion or removal		P
	-connector can be inserted without difficulty		P
	-the appliance is not supported by the connector		P
	-is not for cold conditions if temperature rise of external		N



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
	metal parts exceeds 75K, unless the supply cord is not likely to touch such metal parts		
25.23	Interconnection cords comply with the requirements for the supply cord, except as specified	No interconnection cord used	N
	If necessary, electric strength test of 16.3		N
25.24	Interconnection cords not detachable without the aid of a tool if compliance with the standard is impaired when they are disconnected	No interconnection cord used	N
25.25	Dimensions of pins compatible with the dimensions of the relevant socket-outlet. Dimensions of pins and engagement face in accordance with the relevant plug in IEC 60083		P
26	TERMINALS FOR EXTERNAL CONDUCTORS		P
26.1	Appliances provided with terminals or equally effective devices for connection of external conductors		P
	Terminals only accessible after removal of a non-detachable cover		P
	However, earthing terminals may be accessible if a tool is required to make the connections and means are provided to clamp the wire independently from its connection		P
26.2	Appliances provided with terminals or equally effective devices for connection of external conductors		N
	Terminals only accessible after removal of a non-detachable cover		N
	However, earthing terminals may be accessible if a tool is required to make the connections and means are provided to clamp the wire independently from its connection		N
	Appliances provided with terminals or equally effective devices for connection of external conductors		N
	Terminals only accessible after removal of a non-detachable cover		N
26.3	Terminals for type X attachment and for connection to fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure and without damaging the conductor	Type Y attachment	N
	Terminals for type X attachment and those for connection to fixed wiring so fixed that when tightening or loosening the clamping means:		N
	- the terminal does not loosen		N
	- internal wiring is not subjected to stress		N
	- clearances and creepage distances are not reduced below the values in 29		N
	Compliance checked by inspection and by the test of		N



IEC 60335-2-30			
Clause	Requirement – Test	Result – Remark	Verdict
	subclause 9.6 of IEC 60999-1, the torque applied being equal to two-thirds of the torque specified. Nominal diameter of thread (mm); screw category; torque (Nm).....		
26.4	Terminals for type X attachment and those for connection to fixed wiring so fixed that when tightening or loosening the clamping means	Type Y attachment	N
	-the terminal does not loosen		N
	-internal wiring is not subjected to stress		N
	-creepage distances and clearances are not reduced below the values in 29.1		N
26.5	Terminals for type X attachment and for connection to fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure and without damaging the conductor	Type Y attachment	N
26.6	Terminals for type X attachment, no special preparation of conductors required, and so constructed and placed that conductors prevented from slipping out, except those with a specially prepared cord and those for connection to fixed wiring	Type Y attachment	N
26.7	Terminals of the pillar type constructed and located as specified	Not such construction	N
26.8	Terminals for the connection to fixed wiring located close to each other, including the earthing terminal		P
26.9	Terminals for type X attachment accessible after removal of a cover or part of the enclosure		N
26.10	Terminals not accessible without the aid of a tool		P
26.11	For type Y and Z attachment: soldered, welded, crimped and similar connections may be used		P
	For Class II appliances: the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone		P
	For Class II appliances: soldering, welding or crimping alone used, barriers provided, clearances and creepage distances satisfactory if the conductor becomes free		P
27	PROVISION FOR EARTHING		P
27.1	Accessible metal parts of Class 0I and I appliances, permanently and reliably connected to an earthing terminal or contact of the appliance inlet		P
	Earthing terminals not connected to neutral terminal		P
	Class 0, II and III appliance have no provision for earthing	Class II appliance	N
	Safety extra-low voltage circuits not earthed, unless protective extra-low voltage circuits		N
27.2	Clamping means adequately secured against accidental loosening		P
	Terminals used for the connection of external		P



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Clause	Requirement – Test	Result – Remark	Verdict
	equipotential bonding conductors allow connection of conductors of 2.5 to 6 mm ² , and		
	do not provide earthing continuity between different parts of the appliance		P
	Conductors cannot be loosened without the aid of a tool		P
27.3	For detachable parts that are plugged into another part of the appliance, and having an earth connection, the earth connection made before and separated after current-carrying connections when removing the part		N
	For appliances with supply cord, current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage		N
27.4	No risk of corrosion resulting from contact between metal of earthing terminal and other metal		P
	Adequate resistance to corrosion of coated or uncoated parts providing earthing continuity, other than parts of a metal frame or enclosure		P
	Parts of steel providing earthing continuity provided at the essential areas with an electroplated coating, thickness at least 5 µm		P
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		P
	In case of aluminium alloys precautions taken to avoid risk of corrosion		P
27.5	Low resistance of connection between earthing terminal and earthed metal parts		P
	This requirement does not apply to connections providing earthing continuity in the protective extra-low voltage circuit, provided that clearances of basic insulation are based on the rated voltage of the appliance		N
	Resistance not exceeding 0,1 Ω at the specified low-resistance test		P
27.6	The printed conductors of printed circuit boards shall not be used to provide earthing continuity in hand-held appliances.	Portable appliance	N
	They may be used to provide earthing continuity in other appliances if at least two tracks are used with independent soldering points and the appliance complies with 27.5 for each circuit		N
28	SCREWS AND CONNECTIONS		P
28.1	Fixings and electrical connections withstand Mechanical stresses		P
	Screws not of soft metal liable to creep, such as zinc or aluminum	Not such screws used	N



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Clause	Requirement – Test	Result – Remark	Verdict
	Diameter of screws of insulating material min 3mm		N
	Screws of insulating material not used for any electrical connection		N
	Screws transmitting electrical contact only screwing into metal		P
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation		N
	Type X attachment, screws to be removed for replacement of supply cord, or for users maintenance, not of insulating material if their replacement by a metal screw can impair basic insulation	Type Y attachment	N
	Screws and nuts transmitting contact pressure subjected to torque test as specified, applying torque as shown in table 12	Screw and nuts transmitting contact pressure subjected to torque test as specified	P
	The test is not carried out on screws and nuts Transmitting contact pressure for earthing Continuity provided at least two screws or nuts Are used. (Annex ZA)		N
28.2	Contact pressure not transmitted through insulating material liable to shrink or distort, unless shrinkage or distortion compensated	Contact pressure not Transmitted through insulating material	P
	This requirement does not apply to electrical connections in circuit carrying a current not exceeding 0.5A		P
28.3	Space-threaded (sheet metal) screws only used for the connection of current-carrying parts if they clamp these parts directly in contact with each other	No space-threaded Screws used	N
	Thread-cutting (self-tapping) screws not used for electrical connection of current-carrying parts, unless generating a full form standard machine screw thread	No such screws used	P
28.4	Screws and nuts making mechanical connection between different parts of the appliance, and also making electrical connection or providing earthing continuity secured against loosening	No such screws and nuts used for electrical connection	N
	Rivets for current-carrying connections subject to torsion secured against loosening	No such rivets used	N
29	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH INSULATION		P
	Clearances, creepage distances and solid insulation withstand electrical stress		P
	For coatings used on printed circuits boards to protect the microenvironment (Type 1) or to provide basic insulation		N



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Clause	Requirement – Test	Result – Remark	Verdict
	(Type 2), annex J applies.....		
	The microenvironment is pollution degree 1 under Type 1 coating		N
	No clearance or creepage distance requirements under Type 2 coating		N
29.1	Clearances not less than the values specified in table 16, taking into account the rated impulse voltage for the overvoltage categories of table 15, unless	See appended table 29.1	P
	for basic insulation and functional insulation they comply with the impulse voltage test of clause 14		P
	However, if the construction is affected by wear, distortion, movement of the parts or during assembly, the clearances for rated impulse voltages of 1500V and above are increased by 0,5 mm and the impulse voltage test is not applicable		N
	Impulse voltage test not applicable:		N
	- when the microenvironment is pollution degree 3		P
	- for basic insulation of class 0 and class 0I appliances		N
	Appliances are in overvoltage category II		N
	Clearances less than specified in table 16 not allowed for basic insulation of class 0 and class 0I appliances,		N
	or if pollution degree 3 is applicable		P
	Compliance is checked by inspection and measurements as specified		P
29.1.1	Clearances of basic insulation withstand the overvoltages, taking into account the rated impulse voltage		P
	Clearance at the terminals of tubular sheathed heating elements may be reduced to 1mm if the microenvironment is pollution degree 1		P
	Lacquered conductors of windings considered to be bare conductors		N
29.1.2	Clearances of supplementary insulation not less than those specified for basic insulation in table 16		P
29.1.3	Clearances of reinforced insulation not less than those specified for basic insulation in table 16, but using the next higher step for rated impulse voltage		P
29.1.4	For functional insulation, the values of table 16 are applicable, unless		P
	the appliance complies with clause 19 with the functional insulation short-circuited		N
	Lacquered conductors of windings considered to be bare conductors		N
	However, clearances at crossover points are not measured		N



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Clause	Requirement – Test	Result – Remark	Verdict
	Clearance between surfaces of PTC heating elements may be reduced to 1mm		N
29.1.5	Appliances having higher working voltage than rated voltage, the voltage used for determining clearances from table 16 is the sum of the rated impulse voltage and the difference between the peak value of the working voltage and the peak value of the rated voltage		N
	If the secondary winding of a step-down transformer is earthed, or if there is an earthed screen between the primary and secondary windings, clearances of basic insulation on the secondary side not less than those specified in table 16, but using the next lower step for rated impulse voltage		N
	Circuits supplied with a voltage lower than rated voltage, clearances of functional insulation based on the working voltage used as the rated voltage in table 15		N
	Values increased by 4mm in case of reinforced insulation		N
29.2	For working voltages up to and including 250V, distances through insulation not less than 1,0 mm for supplementary insulation, and, 2.0mm for reinforced insulation	>2.0mm for reinforced insulation	P
29.2.1	Supplementary insulation applied in thin sheet form, other than mica or similar scaly material, consists of at least two layers, each of the layers withstands the electric strength test of 16.3 for supplementary insulation	Not such construction	N
	Reinforced insulation applied in thin sheet form, other than mica or similar scaly material, consists of at least two layers, and two of the layers together withstand the electric strength test of 16.3 for reinforced insulation	Not such construction	N
29.2.2	Supplementary or reinforced insulation inaccessible and does not exceed the maximum permissible temperature values		P
	Supplementary or reinforced insulation, after conditioning as specified, withstands the electric strength test as specified in 16.3, both at the oven temperature and room temperature		P
29.2.3	Creepage distances of reinforced insulation at least double as specified for basic insulation in table 17		P
29.2.4	Creepage distances of functional insulation not less than specified in table 18		N
	Creepage distances may be reduced if the appliance complies with clause 19 with the functional insulation short-circuited		N



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Clause	Requirement – Test	Result – Remark	Verdict
29.3	Supplementary and reinforced insulation having adequate thickness, or a sufficient number of layers, to withstand the electrical stresses		P
	Compliance checked by:		P
	- measurement, in accordance with 29.3.1, or		P
	- an electric strength test in accordance with 29.3.2, or		N
	- an assessment of the thermal quality of the material combined with an electric strength test, in accordance with 29.3.3		N
29.3.1	Supplementary insulation having a thickness of at least 1 mm		P
	Reinforced insulation having a thickness of at least 2 mm		P
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation		N
	Supplementary insulation consisting of at least 2 layers		N
	Reinforced insulation consisting of at least 3 layers		N
29.3.3	The insulation is subjected to the dry heat test Bb of IEC 60068-2-2, followed by		N
	the electric strength test of 16.3		N
.	If the temperature rise during the tests of Clause 19 does not exceed the value specified in Table 3, the test of IEC 60068-2-2 is not carried out		N
30	RESISTANCE TO HEAT, FIRE AND TRACKING		P
30.1	Relevant external parts of non-metallic material supplementary or reinforced insulation sufficiently resistant to heat	See appended table 30.1	P
	Parts supporting live parts and parts providing supplementary or reinforced insulation sufficiently resistant to heat	See appended table 30.1	P
	Ball-pressure test with a force of 20N,diameter of impression not exceeding 2 mm	See appended table 30.1	P
	External parts: at least 75°C		P
	Parts supporting live parts: at least 125°C	Enclosure PCB tested	P
	Parts providing supplementary or reinforced insulation: temperature(°C)		N
30.2	Relevant parts of non-metallic material adequately resistant to ignition and spread of fire	See appended table 30.2	P
30.2.1	Possible burning test of relevant parts according to Annex J		P
30.2.2	Appliances operated white attended, parts of insulation material supporting connections carrying a current exceeding 0,5A in normal operation, subjected to the glow-wire test of Annex K at 650°C	See appended table 30.2	P
30.2.3	Appliances operated white unattended, possible		N



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Clause	Requirement – Test	Result – Remark	Verdict
	bad-connection test according to Annex L		
	Possible needle-flame test according to Annex M		N
30.2.4	Parts of non-metallic material within a distance of 50 mm from parts not withstanding the tests of 30.2.2 of 30.2.3, subjected to the needle-flame test of Annex M		N
30.101	Heaters having an enclosure of substantially non-metallic material shall be resistant to fire. (IEC 60335-2-30: 2009)	No fan	N
31	RESISTANCE TO RUSTING		N
	Relevant ferrous parts adequately protected against rusting	Relevant ferrous parts are plated	N
32	RADIATION, TOXICITY AND SIMILAR HAZARDS		N
	No harmful radiation emit	No any radiation source	N
	no toxic or similar hazard	No toxic hazard	N



10.1	TABLE: Power input deviation					P
Input deviation of/at:		P rated (W)	P measured (W)	dP	Required dP	Remark
110V/50Hz		1200	1055	--	+5 / -10%	P

11.8	TABLE: Heating test, thermocouples		P
	Test voltage (V)..... :	110V (1200W)	—
	Ambient (°C)..... :	25°C	—
Thermocouple locations		dT (K)	Max. dT (K)
Supply cord		10.1	50
Internal wire of heating element		10.2	80
Internal wire		5.1	55
Ambient of Power switch		8.6	60
Plastic enclosure		1.2	See cl.30
Knob of power switch		3.3	60
Handle		2.2	60
Test corner		11.4	65
Enclosure of oscillating motor		49.8	Ref.

11.8	TABLE: Heating test, resistance method					P
	Test voltage (V)..... :		110V (1200W)		—	
	Ambient, t1 (°C)..... :		25°C		—	
	Ambient, t2 (°C)..... :		25°C		—	
Temperature rise of winding		R1 (Ω)	R2 (Ω)	dT (K)	Max. dT (K)	Insulation class
Winding of oscillating motor		11510	14635	73.5	90	Class 120 (E)

13.2	TABLE: Leakage current			P
	Heating appliances: 1.15 x rated input.....:	—		—
	Motor-operated and combined appliances: 1.06 x rated voltage.....:	110V		—
Leakage current between		I (mA)	Max. allowed I (mA)	
L/N to earthed metal parts over basic insulation		0.05	0.75	
L/N to plastic enclosure over reinforced insulation		0.05	0.25	



13.3	TABLE: Electric strength		P
Test voltage applied between:		Voltage (V)	Breakdown (Yes/No)
L/N to earthed metal parts over basic insulation		1000	No
L/N to plastic enclosure over reinforced insulation		3000	No

16.2	TABLE: Leakage current		P
	Single phase appliances: 1.06 x rated voltage.....:	110V	—
	Three phase appliances 1.06 x rated voltage divided by $\sqrt{3}$:	—	—
Leakage current between		I (mA)	Max. allowed I (mA)
L/N to earthed metal parts over basic insulation		0.05	0.75
L/N to plastic enclosure over reinforced insulation		0.05	0.25

16.3	TABLE: Electric strength		P
Test voltage applied between:		Voltage (V)	Breakdown (Yes/No)
L/N to earthed metal parts over basic insulation		1250	No
L/N to plastic enclosure over reinforced insulation		3000	No

19.7	TABLE: Abnormal operation, locked rotor/moving parts					P
	Test voltage (V).....:					—
	Ambient, t1 (°C).....:					—
	Ambient, t2 (°C).....:					—
Temperature of winding		R1 (Ω)	R2 (Ω)	dT (K)	T (°C)	Max. T (°C)
		11510	14648	73.9	90	

19.13	TABLE: Abnormal operation, temperature rises						P
Thermocouple locations	dT (K)					Max. dT (K)	
	Clause 19.101	Clause 19.110	Clause 19.111	Clause 19.106	Clause 19.11		
Power cord (114)	10.5	11K	--	--	--	150	
Test corner (204)	11.9	22K	--	--	--	150	
Plastic enclosure (201)	62.1	64.2K	--	--	--	See clause 30.1	
Winding of oscillating motor (class 120)	/	/	/	°C	°C	165°C	



30.1	TABLE: Ball pressure			P
Part	Test temperature (°C)	Impression diameter (mm)	Allowed impression diameter (mm)	
Power switch	125	1.04	2.0	
Tip-over switch	125	0.98	2.0	
Enclosure	75	0.65	2.0	

30.2	TABLE: glow-wire tests			P
Part / at:	Test temperature (°C)	Flame in the first 30 s Yes / No	Self-extinguished in the further 30 s Yes/No/---	
Power switch	850/750	No	---	
Tip-over switch	850/750	No	---	
Enclosure	650	No	---	
Close-end connector	850/750	No	---	



Appendix for photo

Photo 1



Photo 2





Photo 3

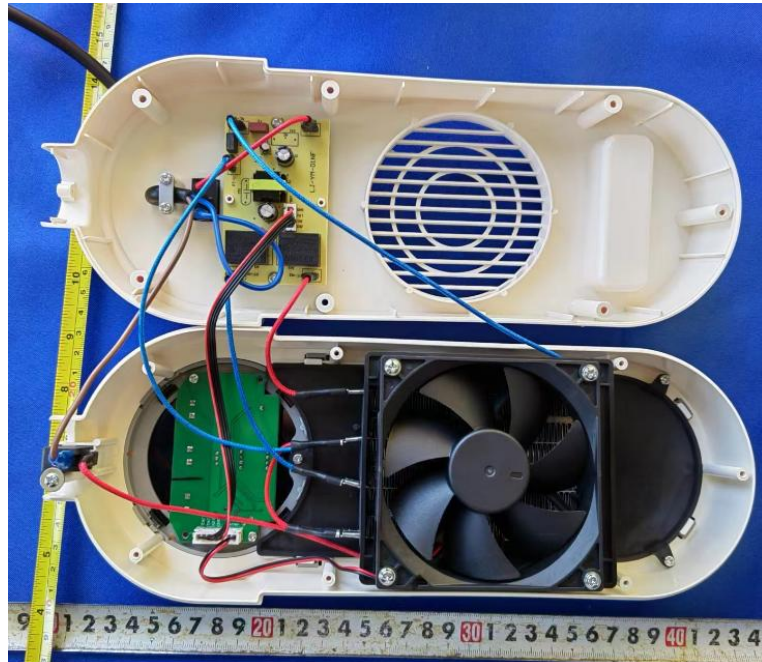


Photo 4

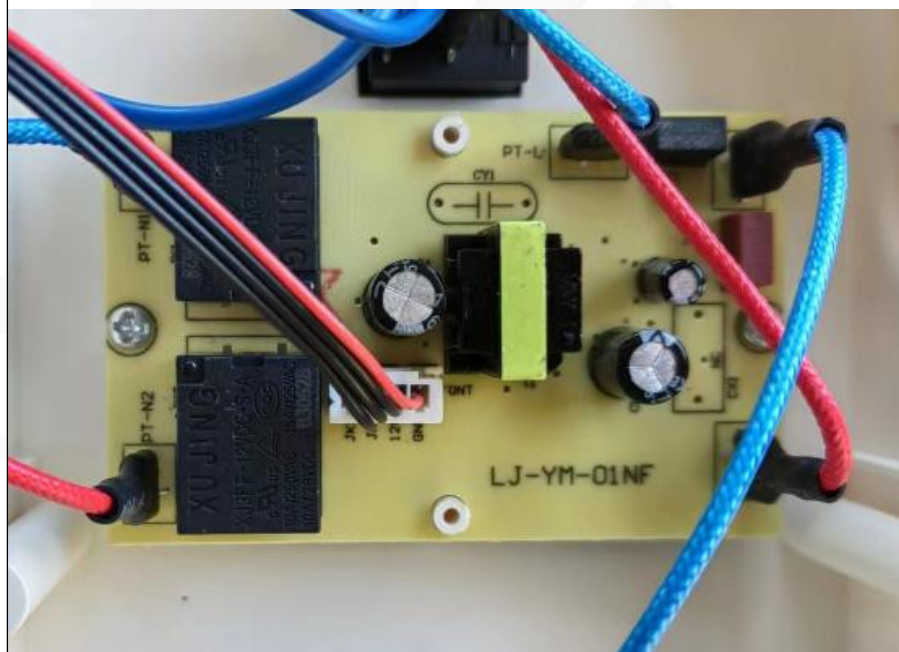




Photo 5

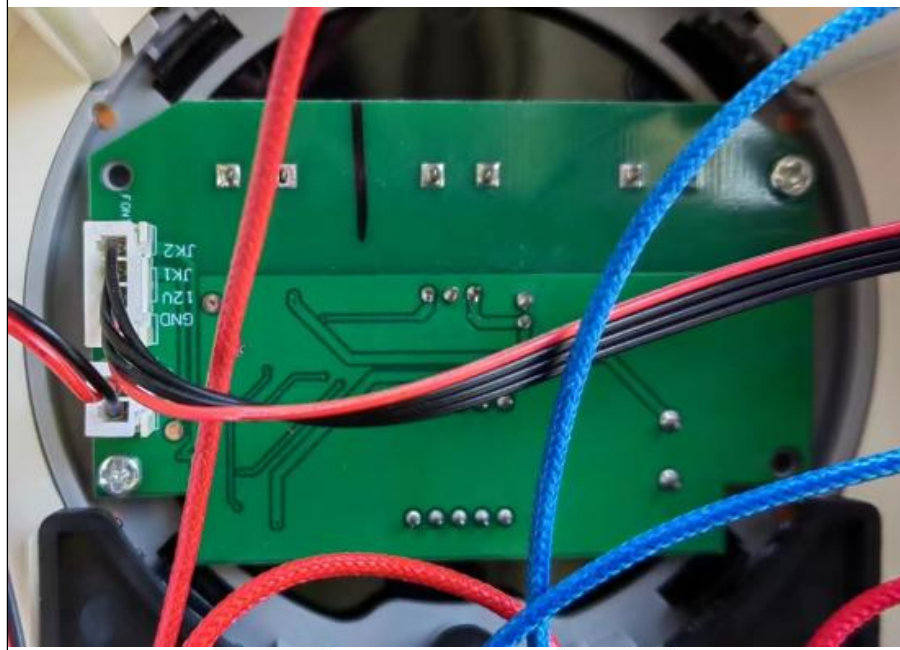
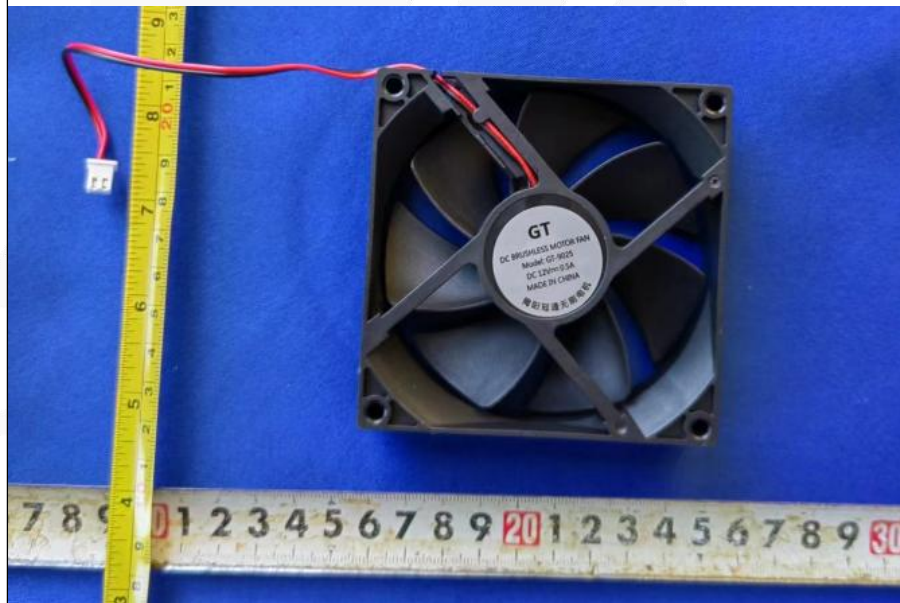


Photo 6



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