EN60335-1: 2012+A11:2014+A13:2017+A1:2019+A2:2019+A14:2019

Safety of household and similar electrical appliances

EN60335-2-30: 2009/A11:2012+A1:2020+A12:2020

Particular requirements for room Air Heaters

MEASUREMENT AND TEST REPORT

For

JieYang City Maist Plastic Products Co.,Ltd.

JingLian Society, TangPu Village, FengMei Office, Airport Economic Area, JieYang City

Model: XH-3010, XH-1201, XH-301R, XH-302R, XH-303R, XH-401R, XH-402R, XH-403R, XH-501R, XH-502R, XH-601R, XH-602R, XH-801R, XH-802R, XH-803R, XH-901R, XH-902R, XH-1001R, XH-1002R, XH-1201R, XH-1202R, XH-1301R, XH-1302R, XH-1303R, XH-1501, XH-1601, XH-2021

December 2, 2021

This Report Concerns:	**Equipment Type:**
☒ Original Report	Air Heater

Test Engineer:	Eric /
Report Number:	HY21LR-003S
Test Date:	November 25-December 2, 2021
Reviewed By:	Terry /
Prepared By:	**Shenzhen HuaYu Test Technology Co,.Ltd.** No. D880, 4th Floor, Building 1, Detai Industrial Park, Huarong Road No. 460, Dalang Street, Longhua New District, Shenzhen

TEST REPORT
EN60335-1: 2012+A11:2014+A13:2017+A1:2019+A2:2019+A14:2019
Safety of household and similar electrical appliances
EN60335-2-30: 2009/A11:2012+A1:2020+A12:2020
Particular requirements for room heaters

Report		
Report reference No.	:	HY21LR-003S
Tested by (signature)	:	Eric /
Reviewed by (+signature)	:	Terry /
Date of issue	:	December 2, 2021

Testing laboratory		
Name	:	**Shenzhen HuaYu Test Technology Co,.Ltd.**
Address	:	No. D880, 4th Floor, Building 1, Detai Industrial Park, Huarong Road No. 460, Dalang Street, Longhua New District, Shenzhen
Test location	:	Same as above

Client		
Name	:	**JieYang City Maist Plastic Products Co.,Ltd.**
Address	:	JingLian Society, TangPu Village, FengMei Office, Airport Economic Area, JieYang City

Test specification		
Standard	:	EN60335-1: 2012+A11:2014+A13:2017+A1:2019+A2:2019+A14:2019 EN60335-2-30: 2009/A11:2012+A1:2020+A12:2020
Non-standard test method	:	N.A.

Test item		
Description	:	Air Heater
Model No.	:	XH-3010, XH-1201, XH-301R, XH-302R, XH-303R, XH-401R, XH-402R, XH-403R, XH-501R, XH-502R, XH-601R, XH-602R, XH-801R, XH-802R, XH-803R, XH-901R, XH-902R, XH-1001R, XH-1002R, XH-1201R, XH-1202R, XH-1301R, XH-1302R, XH-1303R, XH-1501, XH-1601, XH-2021
Power rating	:	220-240V~ 50Hz 3000W Max
Manufacturer	:	**JieYang City Maist Plastic Products Co.,Ltd.**
Address	:	JingLian Society, TangPu Village, FengMei Office, Airport Economic Area, JieYang City
Model difference	:	/

	EN60335-1 EN60335-2-30		
Clause	Requirement – Test	Result – Remark	Verdict

General remarks:	

"(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 XH-3010, which also represent model XH-3010. Attached with: ANNEX A: list of critical components ANNEX B: Photographs of the EUT

Marking label sample (for reference only)

Air Heater

Model:XH-3010

Ratings:220-240V~ 50Hz 3000W

CE

JieYang City Maist Plastic Products Co.,Ltd.

	EN60335-1 EN60335-2-30		
ause	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℃ 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. (EN60335-2-30: 2002).	heater	N
7	MARKING AND INSTRUCTIONS		P
7.1	Rated voltage/voltage range (V):	220-240Vac	P
	Nature of supply or rated frequency/frequency range (Hz)	50Hz	P
	Rated input (W) or rated current (A):	3000W	P
	Manufacturer's or responsible vendor's name, trademark or identification mark	JieYang City Maist Plastic Products Co.,Ltd.	P
	Model or type reference	XH-3010	P
	Symbol for Class II, for Class II appliance only	回	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:	220-240Vac Single-phase	P
7.4	Appliance can be adjusted for different rate voltages, the voltage shall be discernible		N
7.5	Marking with more than one rated voltage/rated voltage ranges	220-240Vac	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	⏚	P
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 gear	P
	The figure 0 indicates only OFF position, unless no	0 show Off position	P

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	confusion with the OFF position.		
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. (EN60335-2-30: 2002).	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. (EN60335-2-30: 2002)	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
7.13	Instructions and other text required in official language	English language is used other language can be provided as required	P

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
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. (EN60335-2-30: 2002)	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 switchesshall 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. (EN60335-2-30: 2002)	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 incorporates a switch having a contact separation in all poles that provides full disconnection under overvoltage category III conditions. (EN60335-2-30: 2002)		P
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

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	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 μF		N
	For voltages peak value over 150V up to and including 5KV, the capacitance not exceed 45 μF		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 instructions for installation		N
	Appliances normally placed on a floor or table in use, are placed on the floor as near to the walls as possible		P

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	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; (EN60335-2-30: 2002)		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. (EN60335-2-30: 2002)		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. (EN60335-2-30: 2002)		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 and1.06 times the rated voltage	0.94 times and1.06 times rated voltage are used	N
	Combined appliances are operated as heating appliances.(EN60335-2-30: 2002)	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

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	Appliances are operated until steady conditions are established. (EN60335-2-30: 2002)		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
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		N

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	voltage divided by √3		
	Leakage current measurements		P
16.3	Electric strength tests according to table 7		N
	No breakdown during the tests		P
17	OVERLOAD PROTECTION OF TRANSFORMENTS 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(℃)		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.11to 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 element ruptures	No PTC heating elements used	N
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	No such appliance	N

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	person, massage pads, chairs and beds are operated until steady conditions are established.Other appliances are operated for 30 s		
	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(℃)		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 CI.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 CI.11, but supplied at rated voltage, the duration of the tests were recorded	N
	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	short-circuit of any two terminals of an	N

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	optocoupler	electronic component	
	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 though 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
	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.	The appliance is subjected to radiated fields in		N

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
2	accordance with IEC 61000-4-3, test level 3		
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 ignitable gas in hazardous amounts	P
	Temperature rises not exceeding the values		P
	Enclosures not deformed to such an extent that compliance with Cl.8is impaired	Enclosures not deformed	P
	If appliance still operable, shall complying with 20.2		P
	Appliance, other that 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. (EN60335-2-		P

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	30: 2002)		
	All thermal controls that operate during the test of Clause 11 are short-circuited simultaneously. (EN60335-2-30:2002)		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. (EN60335-2-30: 2002)	Portable heaters	P
19.103	Heaters are operated as specified in Clause 11 but with the appliance covered. This does not apply to. (EN60335-2-30: 2002)		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. (EN60335-2-30:2002)	Portable heaters	N
19.105	Heaters having a liquid container that is intended to be filled by the user are operated as specified in Clause11 but with the container empty. (EN60335-2-30: 2002)	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. (EN60335-2-30:2002)		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 separately at its working voltage. Thermal controls that operate during the test of Clause 11 are short-circuited. (EN60335-2-30:2002)		N
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.(EN60335-2-30)		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. (EN60335-2-30:2002)		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		P

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	and this distance is progressively increased so that the highest wall temperature is measured. (EN60335-2-30:2002)		
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. (EN60335-2-30:2002)		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/m2. The heater is then pushed so that it overturns in the most unfavourable position.(EN60335-2-30)		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.(EN60335-2-30:2002)		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. (EN60335-2-30:2002)	No oil	N
20	STABLITY AND MECHANICAL HAZARDS		P
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. (EN60335-2-30:2002)	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

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	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 handing		P
	No damage after three blows applied to various parts of the enclosure , impact energy 0.5j±0.04j	Impact energy 0.5j± 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. (EN60335-2-30:2002)	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. (EN60335-2-30:2002)	Portable heater	N
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		N

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	element(s): the switches/devices being connected in the phase conductor		
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. (EN60335-2-30:2002)	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 substances	N
	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

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	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 impregnated asbestos or of asbestos fibres into the surrounding air adequately prevented		N
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. (EN60335-2-30)	Can't touch metal part	P
2.25	agging 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		P

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	without being seriously damaged, or		
	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 29.1as a result of wear	below values specified in 29.1as 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
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 in 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 operators 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 ClassII appliances not connected		P
	To accessible metal parts, unless complying with 22.42		P
	Metal casings of capacitors of capacitors in Class II appliances separated from accessible metal parts by	No such capacitor used	N

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	supplementary insulation, unless complying with 22.42		
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 changing of the setting of the voltage unlikely to occur		P
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

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	- 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. (EN60335-2-30:2002)		P
22.102	Fireguards shall have a total open area not less than 50 % of the surface area of the fireguard. (EN60335-2-30:2002)		P
22.103	Fireguards shall be securely attached to the heater so that it is not possible to detach them completely without the use of a tool.(EN60335-2-30:2002)		P
22.104	Appliances for wall mounting shall be constructed so that they can be securely fixed to a wall. (EN60335-2-30:2002)	Portable appliance	N
22.105	Accessible glass panels in direct contact with heating elements shall withstand thermal shock. (EN60335-2-30:2002)	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. (EN60335-2-30:2002)	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. (EN60335-2-30:2002)	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. (EN60335-2-30:2002)		N
22.109	The disconnection of the supply by a switch in the off position shall not rely on electronic components. (EN60335-2-30:2002)		P
22.Z1	Appliances ate 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	No beads are used	N

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ause	Requirement – Test	Result – Remark	Verdict
	are not resting on sharp edges or comers		
	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, the turns of which touch one another		N
	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		N

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ause	Requirement – Test	Result – Remark	Verdict
	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		
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
	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

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
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
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. (EN60335-2-30: 2002)		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

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ause	Requirement – Test	Result – Remark	Verdict
	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 lest 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 permanently connected to fixed wiring possible after the appliance has been fixed to its support	The appliance is not intended to be permanently connected to fixed wiring	N
	-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 canduit 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

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ause	Requirement – Test	Result – Remark	Verdict
	Creepage distances and clearances not reduced below values specified in 29.1	After test Creepage distances nand 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 (mm²):		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 appliance		P
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,		P

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	twisting and abrasion by use of cord anchorage		
	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 archorages 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
	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 1,01and I 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 pares 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

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ause	Requirement – Test	Result – Remark	Verdict
	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 metal parts exceeds 75K, unless the supply cord is not likely to touch such metal parts		N
25.23	Interconnecton cords comply with the requirements for the supply cord, except as specified	No interconnection cord uesd	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 uesd	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		N

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	the clamping means:		
	- 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 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) :		N
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

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	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 equipotential bonding conductors allow connection of conductors of 2.5 to 6 mm², and		P
	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		N

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	appliances if at least two tracks are used with independent soldering points and the appliance complies with 27.5 for each circuit		
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
	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 sand 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

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	For coatings used on printed circuits boards to protect the microenvironment (Type 1) or to provide basic insulation (Type 2), annex J applies.....:		N
	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 implulse 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 01 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		N

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
	conductors		
	However, clearances at crossover points are not measured		N
	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

	EN60335-1 EN60335-2-30		
ause	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℃		P
	Parts supporting live parts: at least 125℃	Enclosure PCB tested	P
	Parts providing supplementary or reinforced insulation: temperature(℃)		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 pars 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℃	See appended table 30.2	P

	EN60335-1 EN60335-2-30		
ause	Requirement – Test	Result – Remark	Verdict
30.2.3	Appliances operated white unattended, possible bad-connection test according to Annex L		N
	Possible needle-flame test according to Annex M		N
30.2.4	Parts of non-metallic material within a distance of 50 mm from pars 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. (EN60335-2-30: 2002)	No fan	N
31	RESISTANCE TO RUSTING		N
	Relevant ferrous pars adequately protected against rusting	Relevant ferrous pars are plated	N
32	RADIATION, OXICITY 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
220V/50Hz	425	413	--	+5 / -10%	P
240V/60Hz	425	415	--	+5 / -10%	P

11.8	TABLE: Heating test, thermocouples		P
	Test voltage (V)..... :	242V (2070W)	—
	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
Silicon coated fiberglass sleeving	152.1	175
Ambient of tip-over switch	29.3	100
Ambient of Power switch	8.6	60
Plastic enclosure	1.2	See cl.30
Metal surface of enclosure	61.7	85
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)..... :	242V (2070W)	—
	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.....:	242V	—

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.....:	242V	—
	Three phase appliances 1.06 x rated voltage divided by √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

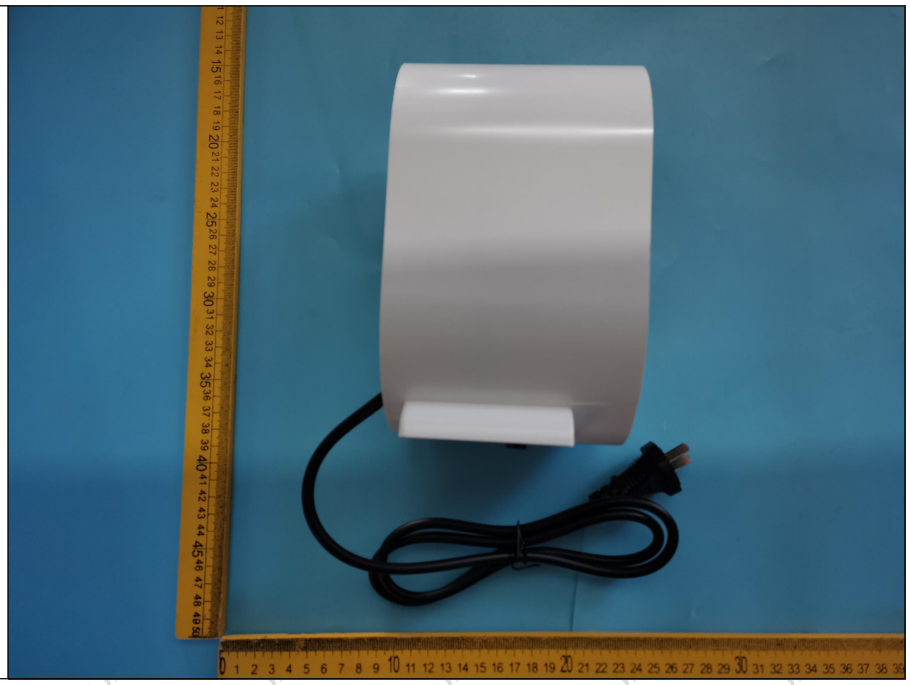

Photo 5

Photo 6

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

EN 55014-1:2017+A11:2020
EN 55014-2:2015
EN 61000-3-2:2019+A1:2021
EN 61000-3-3:2013 +A1:2019
MEASUREMENT AND TEST REPORT

For

JieYang City Maist Plastic Products Co.,Ltd.

JingLian Society, TangPu Village, FengMei Office, Airport Economic Area, JieYang City

Model: XH-3010, XH-1201, XH-301R, XH-302R, XH-303R, XH-401R, XH-402R, XH-403R, XH-501R, XH-502R, XH-601R, XH-602R, XH-801R, XH-802R, XH-803R, XH-901R, XH-902R, XH-1001R, XH-1002R, XH-1201R, XH-1202R, XH-1301R, XH-1302R, XH-1303R, XH-1501, XH-1601, XH-2021

December 2, 2021

This Report Concerns:	**Equipment Type:**
Original Report	Air Heater

Test Engineer:	Pink/
Report Number:	HY21LR-003E
Test Date:	November 25-December 2, 2021
Reviewed By:	Jamin/
Prepared By:	**Shenzhen HuaYu Test Technology Co,.Ltd.** No. D880, 4th Floor, Building 1, Detai Industrial Park, Huarong Road No. 460, Dalang Street, Longhua New District, Shenzhen

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1 - GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

Client Information

Applicant:	**JieYang City Maist Plastic Products Co.,Ltd.**
Address of applicant:	JingLian Society, TangPu Village, FengMei Office, Airport Economic Area, JieYang City
Manufacturer:	**JieYang City Maist Plastic Products Co.,Ltd.**
Address of Manufacturer:	JingLian Society, TangPu Village, FengMei Office, Airport Economic Area, JieYang City
Factory:	**JieYang City Maist Plastic Products Co.,Ltd.**
Address of Manufacturer:	JingLian Society, TangPu Village, FengMei Office, Airport Economic Area, JieYang City

General Description of E.U.T

EUT Name:	**Air Heater**
Model No.:	XH-3010, XH-1201, XH-301R, XH-302R, XH-303R, XH-401R, XH-402R, XH-403R, XH-501R, XH-502R, XH-601R, XH-602R, XH-801R, XH-802R, XH-803R, XH-901R, XH-902R, XH-1001R, XH-1002R, XH-1201R, XH-1202R, XH-1301R, XH-1302R, XH-1303R, XH-1501, XH-1601, XH-2021
Rating:	220-240V~ 50Hz 1200W

Remark: ** The test data gathered are from the production sample provided by the manufacturer.*

1.2 Test Standards

The following Declaration of Conformity report of EUT is prepared in accordance with

EN 55014-1:2017+A11:2020

EN 55014-2:2015

EN 61000-3-2::2019+A1:2021

EN 61000-3-3:2013 +A1:2019

The objective of the manufacturer is to demonstrate compliance with the described standards above.

1.3 Test Summary

For the EUT described above. This apparatus is subdivided into category II according to the section 4.2 of EN 55014-2:2015. So according to section 7.2.2 of this standard, the immunity test item applicable to this EUT is listed in table 3.

Table 1 : Tests Carried Out Under EN 55014-1:2017+A11:2020

Standard	Test Items	Status
EN 55014-1:2017	Conducted Emission (150kHz to 30MHz)	√
EN 55014-1:2017	Disturbance Power (30MHz To 300MHz)	√
EN 55014-1:2017	Radiated Disturbances (30MHz To 1000MHz)	√
EN 55014-1:2017	Click	x

√ Indicates that the test is applicable
× Indicates that the test is not applicable

Table 2 : Tests Carried Out Under EN 61000-3-2::2019+A1:2021 / EN 61000-3-3:2013+A1:2019

Standard	Test Items	Status
EN 61000-3-2::2019+A1:2021	Harmonic Current Test	x
EN 61000-3-3:2013 +A1:2019	Voltage Fluctuations and Flicker Test	√

√ Indicates that the test is applicable
× Indicates that the test is not applicable

Table 3 : Tests Carried Out Under EN 55014-2:2015

Standard	Test Items	Status
EN61000-4-2:2009	Electrostatic discharge Immunity	√
EN61000-4-3:2020	Radiated Susceptibility (80MHz to 1GHz)	x
EN61000-4-4:2012	Electrical Fast Transient/Burst Immunity	√
EN61000-4-5:2014+A1:2017	Surge Immunity	√
EN61000-4-6:2014	Conducted Susceptibility (150kHz to 230MHz)	√
EN61000-4-11:2004+A1:2017	Voltage Dips, Short Interruptions Immunity	√

√ Indicates that the test is applicable
× Indicates that the test is not applicable

1.4 Test Methodology

All measurements contained in this report were conducted with CISPR 16-1: 2002, radio disturbance and immunity measuring apparatus, and CISPR16-2: 2002, Method of measurement of disturbances and immunity.

1.5 Test Equipment List and Details

Test equipments list of Shenzhen SEM.Test Technology Co., Ltd.

No.	Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2021-06-04	2022-06-03
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2021-06-04	2022-06-03
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2021-06-04	2022-06-03
SEMT-1043	Amplifier	C&D	PAP-1G18	2002	2021-06-04	2022-06-03
SEMT-1011	Trilog Broadband Antenna	Schwarz beck	VULB9163	9163-333	2021-06-04	2022-06-03
SEMT-1068	Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-333	2021-06-04	2022-06-03
SEMT-1042	Horn Antenna	ETS	3117	00086197	2021-06-04	2022-06-03
SEMT-1069	Loop Antenna	Schwarz beck	FMZB 1516	9773	2021-06-04	2022-06-03
SEMT-1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2021-06-04	2022-06-03
SEMT-1066	EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2021-06-04	2022-06-03
SEMT-1002	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2021-06-04	2022-06-03
SEMT-1003	AC LISN	Schwarz beck	NSLK8126	8126-224	2021-06-04	2022-06-03
SEMT-1060	DC LISN	Schwarz beck	NNBM8126D	279	2021-06-04	2022-06-03
SEMT-1061	DC LISN	Schwarz beck	NNBM8126D	280	2021-06-04	2022-06-03
SEMT-1085	8-WIRE LISN	Schwarz beck	8158	CAT3-8158-0059	2021-06-04	2022-06-03
SEMT-1086	8-WIRE LISN	Schwarz beck	8158	CAT5-8158-0117	2021-06-04	2022-06-03
SEMT-1005	Clamp	Schwarz beck	MDS21	3809	2021-06-04	2022-06-03
SEMT-1014	Loop Antenna	EVERFINE	LLA-2	711001	2021-06-04	2022-06-03
SEMT-1071	VDH Test Head	AFJ	VDH 30	SC022Z	2021-06-04	2022-06-03
SEMT-1056	Digital Power Analyzer	California Instrument	CTS	72831	2021-06-04	2022-06-03
SEMT-1057	Power Source	California Instrument	5001IX-CTS-400	25965	2021-06-04	2022-06-03
SEMT-1027	ESD Generator	TESQ AG	NSG 437	161	2021-06-04	2022-06-03
SEMT-1055	Signal Generator	HP	8648A	3642U01277	2021-06-04	2022-06-03
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2021-06-04	2022-06-03
SEMT-1067	Amplifier	Agilent	8447D	2944A10179	2021-06-04	2022-06-03
SEMT-1024	Transient 2000	EMC PARTNER	TRA2000	863	2021-06-04	2022-06-03
SEMT-1045	CS Immunity Tester	EMTEST	CWS500	0900-03	2021-06-04	2022-06-03

2 - SYSTEM TEST CONFIGURATION

2.1 Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

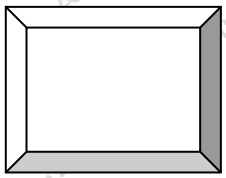
2.2 EUT Exercise Software

The EUT exercising program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software offered by manufacture, can let the EUT being normal operation.

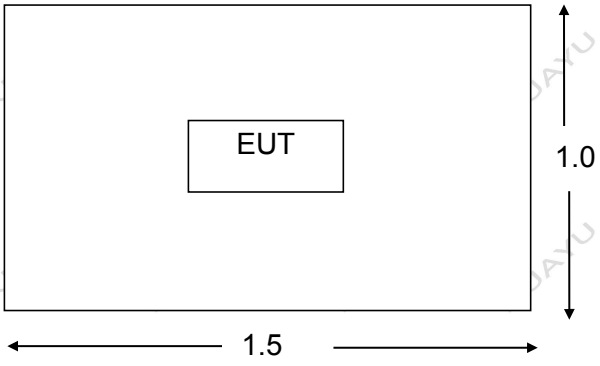
2.3 Equipment Modifications

The EUT tested was not modified by HY.

2.4 Basic Configuration of Test System



2.5 Test Setup Diagram



3 - DISTURBANCE VOLTAGE AT THE MAINS TERMINALS

3.1 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is 3.4 dB.

3.2 Limit of Disturbance Voltage at The Mains Terminals (Class B)

Frequency Range (MHz)	Limits (dBuV)	
	Quasi-Peak	Average
0.150～0.500	66～56	59～46
0.500～5.000	56	46
5.000～30.00	60	50

Note: (1)The tighter limit shall apply at the edge between two frequency bands.

3.3 EUT Setup

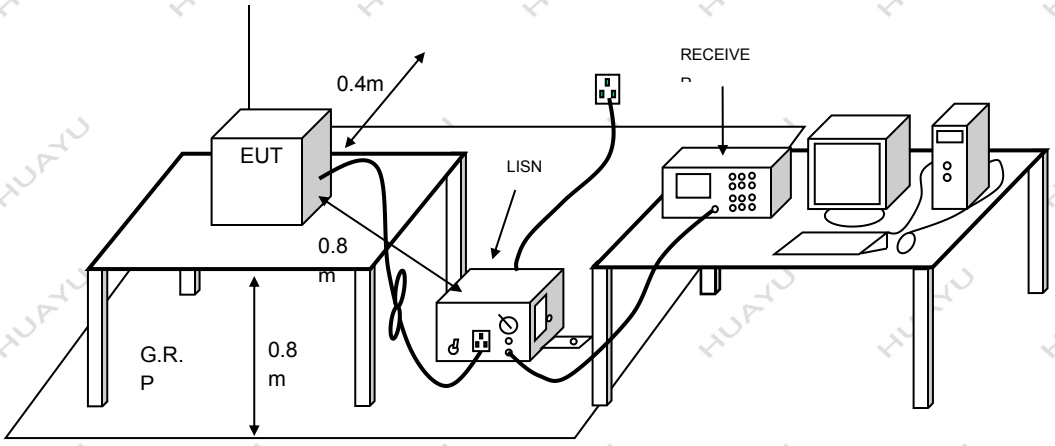
The setup of EUT is according with CISPR 16-1: 2002, CISPR16-2: 2002 measurement procedure. See following test setup figure. The specification used was the EN 55014-1 limits.

The EUT was placed center and the back edge of the test table.

The AV cables were draped along the test table and bundled to 30-40cm in the middle.

The spacing between the peripherals was 10 cm.

Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.



3.4 Instruments Setup

The test receiver was set with the following configurations:

Test Receiver Setting:

Frequency Range……150 KHz to 30 MHz
Detector……..Peak & Quasi-Peak & Average
Sweep Speed……Auto
IF Band Width……..9 KHz

3.5 Test Procedure

During the conducted emission test, the EUT power cord was connected to the auxiliary outlet of the first Artificial Mains.

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance using all installation combination.

All data was recorded in the peak detection mode. Quasi-peak and Average readings were only performed when an emission was found to be marginal (within -10 dBμV of specification limits). Quasi-peak readings are distinguished with a "**QP**". Average readings are distinguished with a "**AV**".

3.6 Summary of Test Results

According to the data in section 3.6, the EUT complied with the EN 55014-1 Conducted margin.

3.7 Disturbance Voltage Test Data

Temperature (℃)	15~35
Humidity (%RH)	30~60
Barometric Pressure (mbar)	860~1060
EUT	Air Heater
M/N	XH-3010
Operating Mode	ON

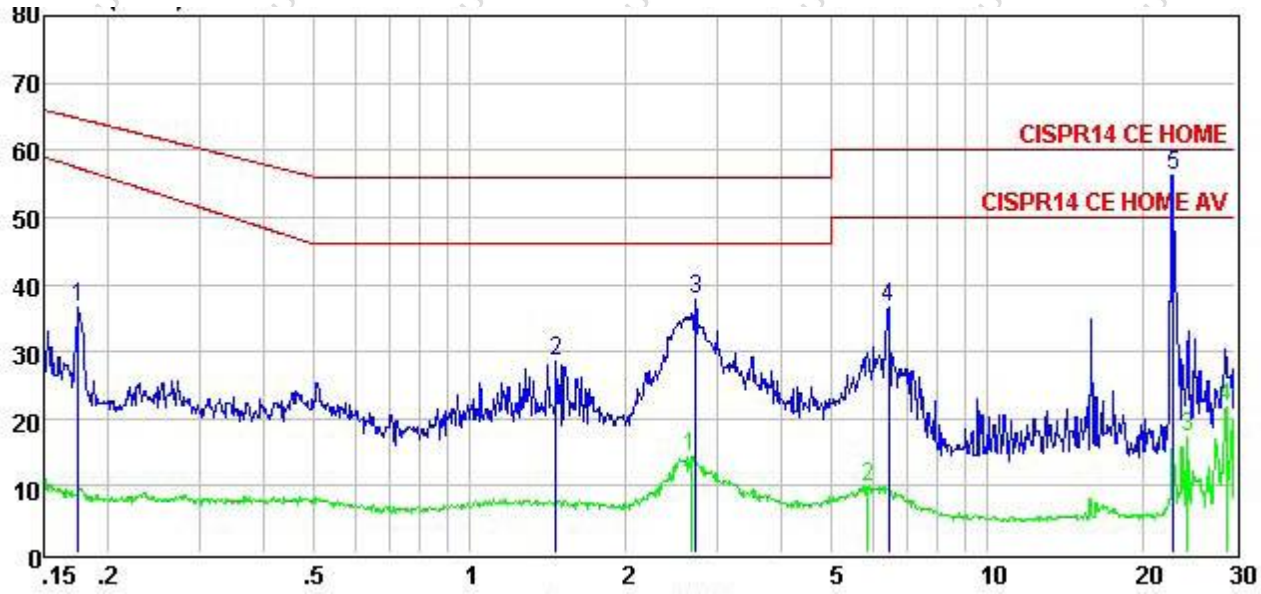
Test data see following pages

3.8 Test Result

Pass

Disturbance Voltage Test Data

EUT:	Air Heater M/N: XH-3010
Operating Condition:	ON
Test Site:	Shielded Room
Operator:	Pink
Test Specification:	AC 230V 50Hz
Comment:	Live Line
Start of Test:	11/29/21/ 11:22 Tem:24℃ Hum:64%

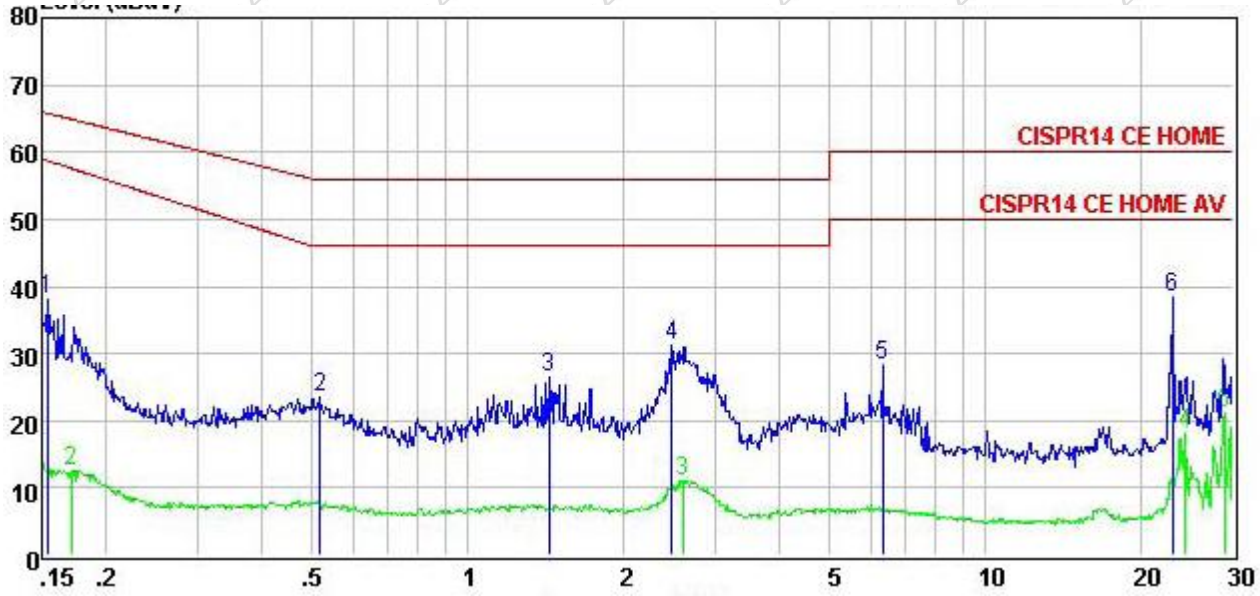


	Freq	Read Level	Factor	Level	Limit Line	Over Limit	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1	0.17	26.68	9.84	36.52	64.72	-28.20	9.79	0.05	Peak
2	1.46	18.18	10.26	28.44	56.00	-27.56	9.84	0.42	Peak
3	2.72	27.25	10.48	37.73	56.00	-18.27	9.85	0.63	Peak
4	6.42	25.84	10.59	36.43	60.00	-23.57	9.88	0.71	Peak
5	22.78	45.35	10.96	56.31	60.00	-3.69	10.01	0.95	Peak

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1	2.66	3.81	10.47	14.28	46.00	-31.72	9.85	0.62	Average
2	5.87	-0.68	10.57	9.89	50.00	-40.11	9.87	0.70	Average
3	24.27	6.23	11.01	17.24	50.00	-32.76	10.03	0.98	Average
4	28.91	10.61	11.14	21.75	50.00	-28.25	10.06	1.08	Average

Disturbance Voltage Test Data

EUT:	Air Heater M/N: XH-3010
Operating Condition:	ON
Test Site:	Shielded Room
Operator:	Pink
Test Specification:	AC 230V 50Hz
Comment:	Neutral Line
Start of Test:	11/29/21/ 11:31 Tem:24℃ Hum:64%



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1	0.15	28.04	9.94	37.98	65.78	-27.80	9.86	0.08	Peak
2	0.52	13.61	9.91	23.52	56.00	-32.48	9.81	0.10	Peak
3	1.43	16.20	10.25	26.45	56.00	-29.55	9.84	0.41	Peak
4	2.47	20.87	10.45	31.32	56.00	-24.68	9.85	0.60	Peak
5	6.32	17.66	10.59	28.25	60.00	-31.75	9.88	0.71	Peak
6	22.90	27.55	10.91	38.46	60.00	-21.54	9.96	0.95	Peak

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	dB	
1	0.15	4.53	9.94	14.47	59.00	-44.53	9.86	0.08	Average
2	0.17	2.63	9.90	12.53	57.57	-45.04	9.85	0.05	Average
3	2.59	0.60	10.46	11.06	46.00	-34.94	9.85	0.61	Average
4	24.27	7.17	10.95	18.12	50.00	-31.88	9.97	0.98	Average
5	28.91	9.89	11.10	20.99	50.00	-29.01	10.02	1.08	Average

4 - DISTURBANCE POWER

4.1 Limit of Disturbance Power

Frequency Range (MHz)	Limit (dBpW)	
	Quasi-Peak	Average
30～300	45～55	35～45

Note: (1) The limit line is a linear line.

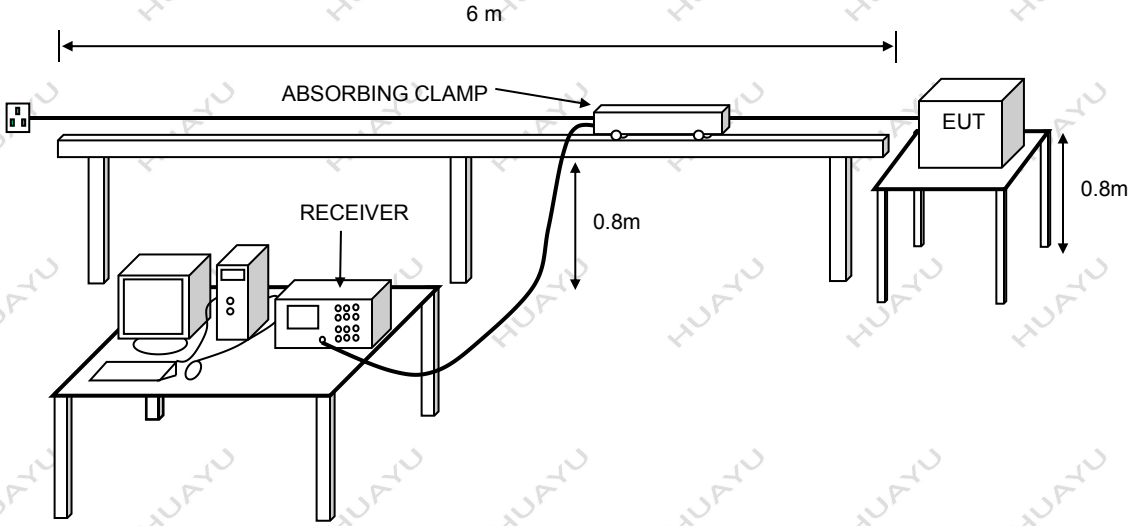
4.2 EUT Setup

The setup of EUT is according with CISPR 16-1: 2002, CISPR16-2: 2002 measurement procedure. See following test setup figure. The specification used was the EN 55014-1 limits.

The EUT was placed at the edge of the test table so as to make the end of the lead close to the EUT as short as possible between the power clamp and the EUT.

The spacing between the peripherals was 10 cm.

Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.



4.3 Instruments Setup

The test receiver was set with the following configurations:

Test Receiver Setting:

Frequency Range……30 MHz to 300 MHz
Detector……..Peak & Quasi-Peak & Average
Sweep Speed……Auto
IF Band Width……..9 KHz

4.4 Test Procedure

The associated equipment under test is placed on a non-metallic table of 0.8 m of height above the floor and at least 0.4 m from other objects and from any person. The lead to be measured shall be stretched in a straight horizontal line for a length sufficient to accommodate the absorbing clamp and to permit the necessary adjustment of its position for tuning. The absorbing clamp is placed around the lead to be measured, with its current transformer towards the equipment under test, so as to measure a quantity proportional to the disturbance power on the lead.

Any other lead less than that to be measured shall either be disconnected, if mechanically and functionally possible, or fitted with ferrite rings to attenuate RF currents which may affect the measurement results. Such a lead shall be stretched away from the connected unit in a direction perpendicular to the direction of the lead to be measured.

All connectors not used shall be left un-terminated. All connectors having a connected lead shall be terminated in a manner representative of use. If the leads are screened and normally terminated in a screened unit, then the termination shall be screened.

4.5 Disturbance Power Test Data

Temperature (℃)	15~35
Humidity (%RH)	30~60
Barometric Pressure (mbar)	860~1060
EUT	Air Heater
M/N	XH-3010
Operating Mode	ON

4.6 Test Plot(s) for Disturbance Power

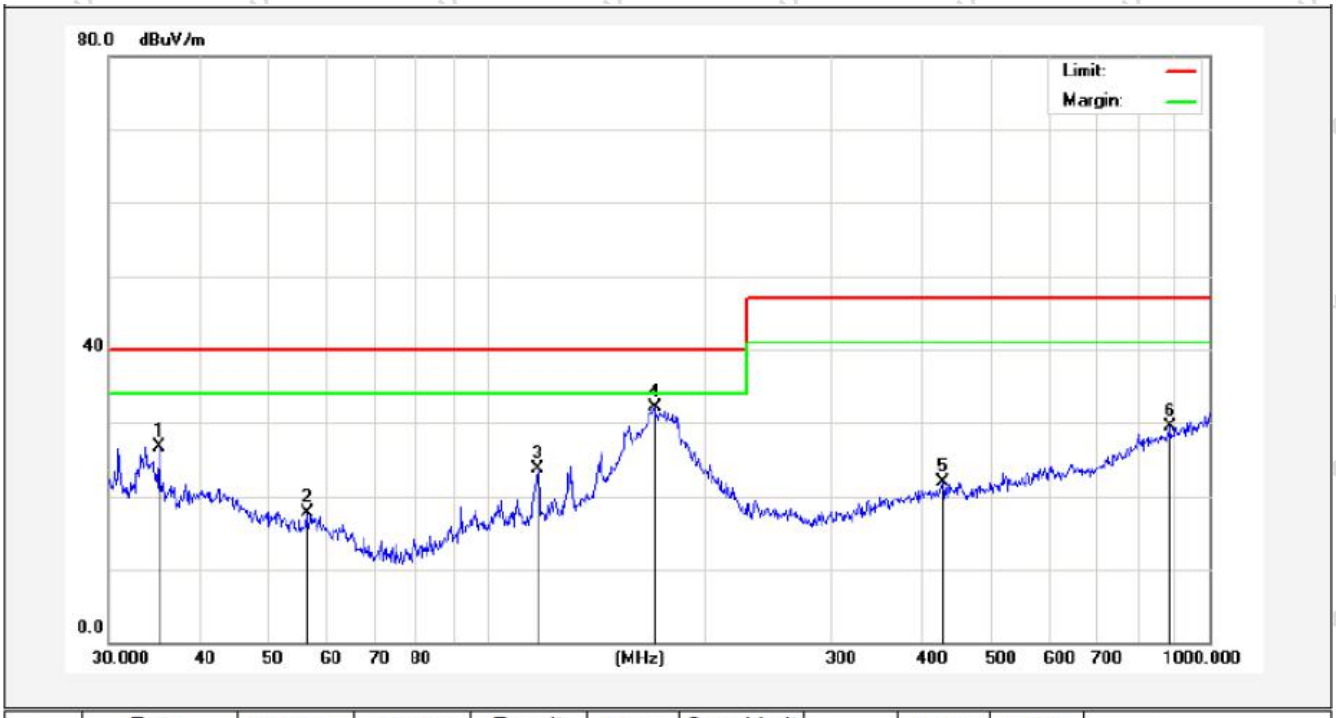
Plot(s) of Conducted Emissions Test Data is presented hereinafter as reference.

4.7 Test Result

Pass

Power Clamp Test of EN55014-1

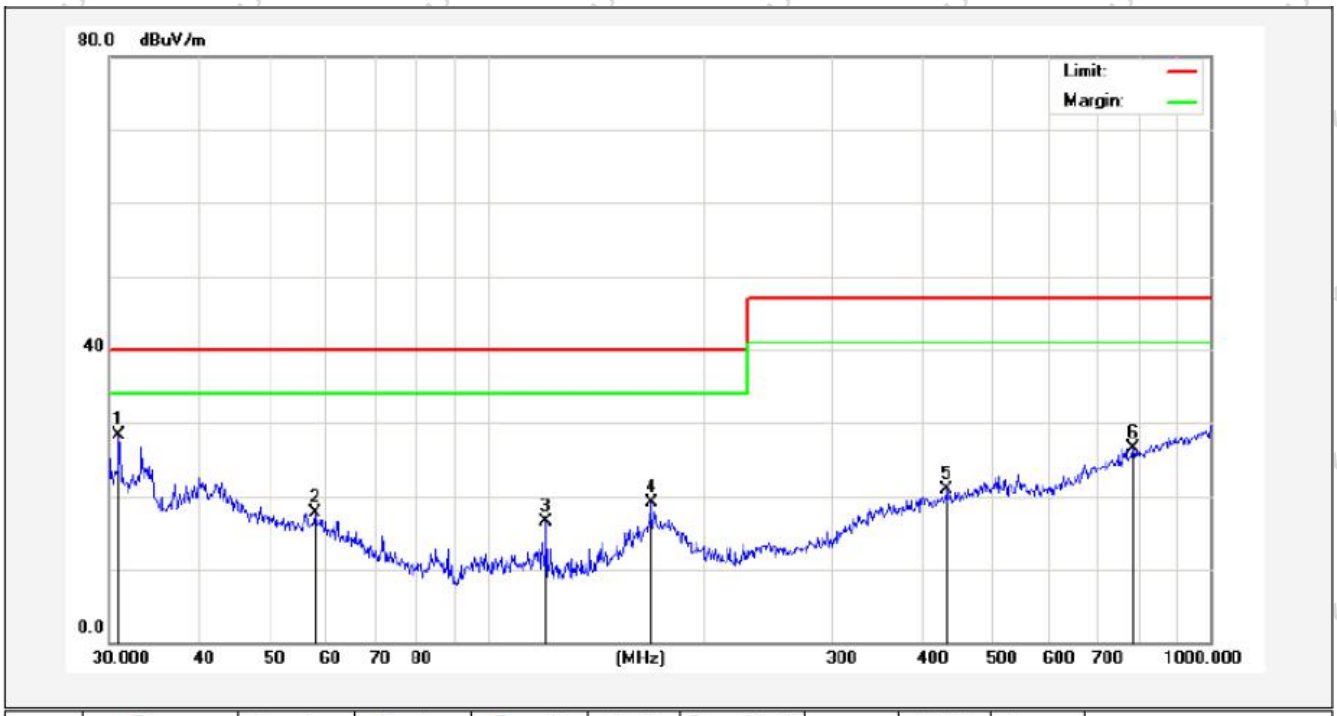
EUT:	Air Heater M/N: XH-3010
Operating Condition:	ON
Test Site:	3m CHAMBER
Operator:	Pink
Test Specification	AC 230V 50Hz
Comment:	Polarization: Vertical Tem:25℃ Hum:72%
Start of Test:	11/29/21/ 11:44



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	35.2512	40.87	-14.10	26.77	40.00	-13.23	peak			
2	56.3948	32.68	-15.05	17.63	40.00	-22.37	peak			
3	117.7725	44.83	-21.18	23.65	40.00	-16.35	peak			
4	170.7926	54.55	-22.50	32.05	40.00	-7.95	peak			
5	428.0193	34.30	-12.31	21.99	47.00	-25.01	peak			
6	884.5029	34.51	-5.03	29.48	47.00	-17.52	peak			

Radiated Disturbances Test Data

EUT:	Air Heater M/N: XH-3010
Operating Condition:	ON
Test Site:	3m CHAMBER
Operator:	Pink
Test Specification	AC 230V 50Hz
Comment:	Polarization: Horizontal Tem:25℃ Hum:72%
Start of Test:	11/29/21/ 11:46



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	30.9619	44.83	-16.44	28.39	40.00	-11.61	peak			
2	57.7962	32.98	-15.19	17.79	40.00	-22.21	peak			
3	120.6991	33.00	-16.43	16.57	40.00	-23.43	peak			
4	168.4138	36.74	-17.62	19.12	40.00	-20.88	peak			
5	431.0316	32.07	-11.25	20.82	47.00	-26.18	peak			
6	782.3453	32.66	-6.08	26.58	47.00	-20.42	peak			

5 - HARMONIC CURRENT TEST (EN 61000-3-2)

5.1 Application of Harmonic Current Emission

Compliance to these standards ensures that tested equipment will not generate harmonic currents at levels that cause unacceptable degradation of the main environment. This directly contributes to meeting compatibility levels established in other EMC standards, which defines compatibility levels for low-frequency conducted disturbances in low-voltage supply systems.

5.2 Measurement Data

Standard used	EN/IEC 61000-3-2 A14 (2006) Quasi-stationary - Equipment class B
Observation time	150s
Windows width:	10 periods - (EN/IEC 61000-4-7 Edition 2000)
EUT	Air Heater
M/N	XH-3010
Operating Mode	ON

5.3 Test Results

Pass

6 - VOLTAGE FLUCTUATIONS AND FLICKER TEST (EN 61000-3-3)

6.1 Application of Voltage Fluctuations and Flicker Test

Compliance to these standards ensures that tested equipment will not generate flickers and voltage change at levels that cause unacceptable degradation of the main environment. This directly contributes to meeting compatibility levels established in other EMC standards, which defines compatibility levels for low-frequency conducted disturbances in low-voltage supply systems.

6.2 Measurement Data

Standard used	EN/IEC 61000-3-3 Flicker
Short time (Pst)	10 min
Observation time	10 min (1 Flicker measurement)
Flickermeter	DC3.7V
EUT	Air Heater
M/N	XH-3010
Operating Mode	ON
Test Result	PASS

Maximum Flicker results

	EUT values	Limit	Result
Pst	0.009	1.00	PASS
dc [%]	0.002	3.30	PASS
dmax [%]	0.021	4.00	PASS
dt [s]	0.000	0.50	PASS

6.3 Test Results

The EUT was subjected to the voltage fluctuations and flicker test required by EN 61000-3-3:2008

7 - EN 55014-2 MEASUREMENT INSTRUMENTATION

7.1 Electrostatic Discharge Test System

An EM TEST DITOC0103Z ESD simulator is used for all testing. It is capable of applying Electrostatic discharges in both contact discharge modes to 4 kV and air discharge modes to 8 kV in both positive and negative polarities. This is in accordance with the IEC 61000-4-2 basic EMC publication.

7.2 Electrical Fast Transient/Burst Immunity Test System

An EM Test UCS 500-M6 Immunity test system is used for all testing. It is capable of applying fast transients to the AC line at any phase angle with respect to the AC line voltage wave form and to attached cables via a capacitive coupling clamp in accordance with the IEC 61000-4-4 basic EMC publication.

7.3 Surge Immunity Test System

An EM Test UCS 500-M6 Immunity test system is used for all testing. Both positive and negative polarities of voltage up to 2kV were applied to the AC input lines. The coupling network defined in the standard was used.

7.4 Conducted Susceptibility Test System

An IFR 2032A signal generator and a set of Amplifier Research test system are used for the testing. EUT was tested from 0.15 MHz to 230 MHz with 1kHz sine wave, 80% modulation with 3Vr.m.s. CDN coupling and de-coupling networks was tested. During the tests, injected was applied to power line by using CDNs-6.2.2 method, and I/O lines was injected by using clamp injection-6.2.3.method.

7.5 Voltage Dips, Short Interruptions Immunity Tests System

An EM Test UCS 500-M6 Immunity test system is used for all testing. Test level as described in IEC 61000-4-11, section 5, titled “Test Levels”.

7.6 Equipment Test Table

IEC 61000-4-2: 1995 specifies that a tabletop EUT shall be placed on a non-conducting table which is 80 centimeters above a ground reference plane and that floor mounted equipment shall be placed on a insulating support approximately 10 centimeters above a ground plane. During the tests, the EUT is positioned over a ground reference plane in conformance with this requirement.

For tabletop equipment, a 1.6 by 0.8-meter metal sheet (HCP) is placed on the table and connected to the ground plane via a metal strap with two 470 k Ohms resistors in series. The EUT and attached cables are isolated from this metal sheet by *0.5-millimeter* thick insulating material. A Vertical Coupling Plane (VCP) grounded on the ground plane through the same configuration as in the HCP is used.

IEC 61000-4-3 and IEC 61000-4-4 specify that a tabletop EUT be placed on a non-conducting table 80 centimeters above a ground reference plane and that floor-mounted equipment shall be placed on an insulating support approximately 10 centimeters above a ground plane. During the IEC 61000-4-3 tests, the EUT is positioned on a table in a shielded semi-anechoic test chamber to reduce reflections from the internal surfaces of the chamber. During the IEC 61000-4-4 tests, the EUT is positioned on a table over a ground reference plane in conformance with this requirement.

7.7 Instrument Calibration

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications.

Extensive engineering efforts have been made to ensure test data reliability through Quality Control and regular equipment calibration schedules. However, the application of radio frequency fields and voltages are not without an unavoidable level of uncertainty. These include inaccuracies in antenna factors, chamber imperfections and possible test generator output uncertainties.

8 - EN 55014-2 TEST PROCEDURES

8.1 EUT and Cable Placement

The EUT and any peripherals are located at the center of the table for tabletop devices and in the center of the ground plane with the insulating support for floor-standing devices. The standards require that interconnecting cables to be connected to available ports of the unit and that the placement of the unit and the attached cables simulate a typical installation so far as to be practical.

8.2 Application of Electrostatic Discharge Immunity Test

The test is conducted in the following order according to the basic standard IEC 61000-4-2: Air Discharge, Direct Contact Discharge, Indirect Contact Horizontal Coupling Plane Discharge, and Indirect Contact Vertical Coupling Plane Discharge. The Electrostatic Discharge test levels are set and discharges for the different test modes are set appropriately. The Electrostatic Discharge is applied to the conductive surface of the computer in which the EUT is enclosed, and along all seams and control surfaces on the computer. When a discharge occurs and an error is caused, the type of error, discharge level and location is recorded.

8.3 Application of Electrical Fast Transient/Burst Immunity Test

The EUT was arranged for Power Line Coupling and for I/O Line Coupling through a capacitive clamp, where applicable. (Note: The I/O coupling test using a capacitive clamp is performed on the I/O interface cables that are longer in length than 3 meters.) A metal ground plane 2.4 meter by 2.0 meter was placed between the floor and the table and is connected to the earth by a 2.0 meter ground rod. The ground rod is connected to the test facility's electrical earth.

8.4 Application of Surge Immunity Test

The EUT was setup as described in IEC 61000-4-5 and the test shall be performed according to the test plan.

8.5 Application of Conducted Susceptibility Test

The EUT was setup according to the IEC 61000-4-6 and the test shall be performed with the test generator connected to each of the coupling and decoupling devices in turn while the other non-excited RF input ports of the coupling devices are terminated by a 50 Ω load resistor. The frequency range is 150kHz to 230 MHz.

8.6 Application of Voltage Dips, Short Interruptions Immunity Tests

The EUT was setup according to the IEC 61000-4-11 and the test shall be done as the procedure described in the standard.

8.7 Deviations from the Standard

No deviations from EN 55014-2 were made when performing the tests described in this report.

9 - TEST DATA

9.1 Electrostatic Discharge Immunity Test (IEC 61000-4-2)

Temperature (℃)	15~35
Humidity (%RH)	30~60
Barometric Pressure (mbar)	860~1060
EUT	Air Heater
M/N	XH-3010
Operating Mode	ON

Table 1: Electrostatic Discharge Immunity (Air Discharge)

IEC 61000-4-2 Test Points		Test Levels									
		-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV	-15 kV	+15 kV
Slots	4 points	A	A	A	A	A	A	A	A	/	/
Shell	8 points	A	A	A	A	A	A	A	A	/	/
Button	10 points	A	A	A	A	A	A	A	A	/	/

Table 2: Electrostatic Discharge Immunity (Direct Contact)

IEC 61000-4-2 Test Points	Test Levels									
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV	-15 kV	+15 kV
N/A	/	/	/	/	/	/	/	/	/	/

Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP)

IEC 61000-4-2 Test Points	Test Levels									
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV	-15 kV	+15 kV
Front Side	A	A	A	A	/	/	/	/	/	/
Back Side	A	A	A	A	/	/	/	/	/	/
Left Side	A	A	A	A	/	/	/	/	/	/
Right Side	A	A	A	A	/	/	/	/	/	/

Table 4: Electrostatic Discharge Immunity (Indirect Contact VCP)

IEC 61000-4-2 Test Points	Test Levels									
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV	-15 kV	+15 kV
Front Side	A	A	A	A	/	/	/	/	/	/
Back Side	A	A	A	A	/	/	/	/	/	/
Left Side	A	A	A	A	/	/	/	/	/	/
Right Side	A	A	A	A	/	/	/	/	/	/

9.2 Electrical Fast Transient/Burst Immunity Test (IEC 61000-4-4)

Temperature (℃)	15~35
Humidity (%RH)	30~60
Barometric Pressure (mbar)	860~1060
EUT	Air Heater
M/N	XH-3010
Operating Mode	ON

IEC 61000-4-4 Test Points		Test Levels (kV)							
		+0. 5	-0. 5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
Power Supply Power Line of EUT	L1	A	A	A	A	/	/	/	/
	L2	A	A	A	A	/	/	/	/
	Earth	/	/	/	/	/	/	/	/
	L1+L2	A	A	A	A	/	/	/	/
	L1 + Earth	/	/	/	/	/	/	/	/
	L2 + Earth	/	/	/	/	/	/	/	/
	L1+L2+Earth	/	/	/	/	/	/	/	/

9.3 Surge Immunity Test (IEC 61000-4-5)

Temperature (℃)	15~35
Humidity (%RH)	30~60
Barometric Pressure (mbar)	860~1060
EUT	Air Heater
M/N	XH-3010
Operating Mode	ON

Level	Voltage	Poll	Path	Pass	Fail
1	0.5kV	±	L-N	A	/
2	1kV	±	L-N	A	/
3	2kV	±	L-PE, N-PE	/	/
4	4kV	±	L-N, L-PE, N-PE	/	/

9.4 Conducted Susceptibility Test (IEC 61000-4-6)

Frequency Range (MHz): 0.15~80MHz
Modulation: Amplitude 80%, 1kHz sinewave
Severity Level: **3**Vr.m.s.

Temperature (℃)	15~35
Humidity (%RH)	30~60
Barometric Pressure (mbar)	860~1060
EUT	Air Heater
M/N	XH-3010
Operating Mode	ON

Level	Voltage Level (e.m.f.) U_0	Pass	Fail
1	1	/	/
2	3	A	/
3	10	/	/
X	Special	/	/

9.5 Voltage Dips, Short Interruptions Immunity Tests (IEC 61000-4-11)

Temperature (℃)	15~35
Humidity (%RH)	30~60
Barometric Pressure (mbar)	860~1060
EUT	Air Heater
M/N	XH-3010
Operating Mode	ON

Level	U2	td	Phase Angle	N	Pass	Fail
1	95%	10ms	0/90/180/270	3	B	/
2	30%	1000ms	0/90/180/270	3	C	/
3	60%	200ms	0/90/180/270	3	C	/

Note:

A. The apparatus shall continue to operate as intended during and after the test. The manufacturer specifies some minimum performance level. The performance level may be specified by the manufacturer as a permissible loss of performance.

B. The apparatus shall continue to operate as intended after the test. This indicates that the EUT does not need to function at normal performance levels during the test, but must recover. Again some minimal performance is defined by the manufacture. No change in operating state or loss or data is permitted.

C. Temporary loss of function is allowed. Operation of the EUT may stop as long as it is either automatically reset or can be manually restored by operation of the controls.

10 - TEST RESULTS

The following tests were performed on the **JieYang City Maist Plastic Products Co.,Ltd. 's** product; model: **XH-3010** ; the actual test results are contained within the Test Data section of this report

10.1 IEC 61000-4-2 Electrostatic Discharge Immunity Test Configuration

The EUT was subjected to the electrostatic discharge tests required by EN 55014-2 and all lower levels specified in IEC 61000-4-2.

The EUT continued to perform as intended during and after the application of the ESD. Test setup photographs presented in Appendix C.

10.2 IEC 61000-4-4 Electrical Fast Transient/Burst Immunity Test Configuration

The EUT was subjected to the electrical fast transient tests required by EN 55014-2 and all lower levels specified in IEC 61000-4-4.

The EUT continued to perform as intended during and after the application of the EFT/B. Test setup photographs presented in Appendix C.

10.3 IEC 61000-4-5 Surge Immunity Test Configuration

The EUT was subjected to the Surge Immunity tests required by EN 55014-2 and all lower levels specified in IEC 61000-4-5.

The EUT continued to perform as intended during and after the application of the Surge Immunity Test. Test setup photographs presented in Appendix C.

10.4 IEC 61000-4-6 Conducted Susceptibility Test Configuration

The EUT was subjected to the Conducted Susceptibility tests required by EN 55014-2 and all lower levels specified in IEC 61000-4-6.

The EUT continued to perform as intended during and after the application of the Conducted Susceptibility Test. Test setup photographs presented in Appendix C.

10.5 IEC 61000-4-11 Voltage Dips, Short Interruptions Immunity Tests Configuration

The EUT was subjected to the Voltage Dips/Interruptions tests required by EN 55014-2 and all lower levels specified in IEC 61000-4-11.

The EUT continued to perform as intended during and after the application of the Voltage Dips/Interruptions Test. Test setup photographs presented in Appendix C.

APPENDIX A - PRODUCT LABELING

CE Marking Label Specification

Specification: Text is Black or white in color and is left justified. Labels are printed in indelible ink on permanent adhesive backing and shall be affixed at a conspicuous location on the EUT or silk-screened onto the EUT.

CE

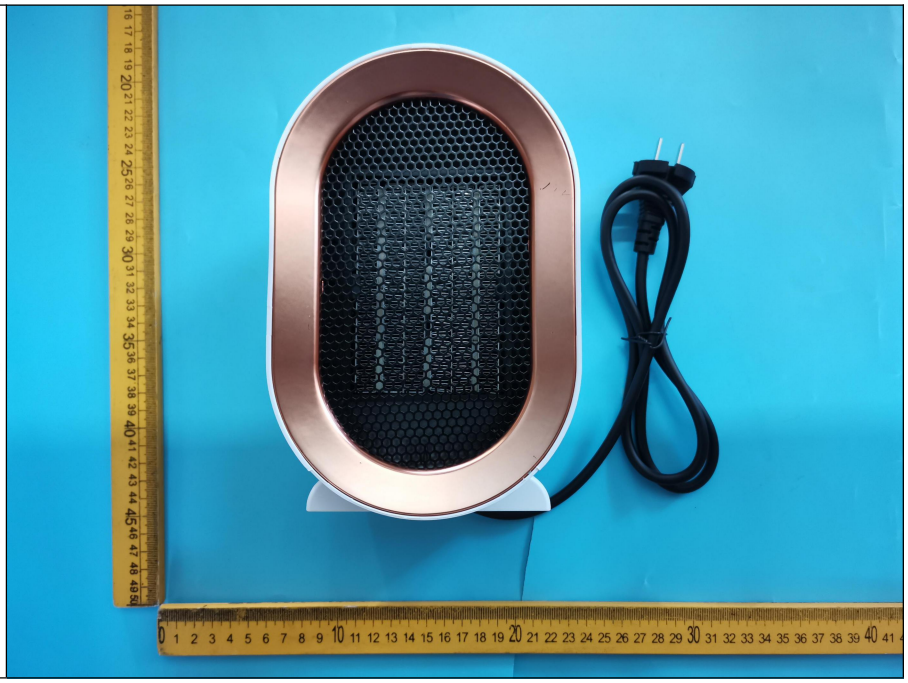
Proposed Label Location on EUT

Proposed CE Marking Location

EXHIBIT B - EUT PHOTOGRAPHS

EUT View 1

Photo 1



EUT View 2

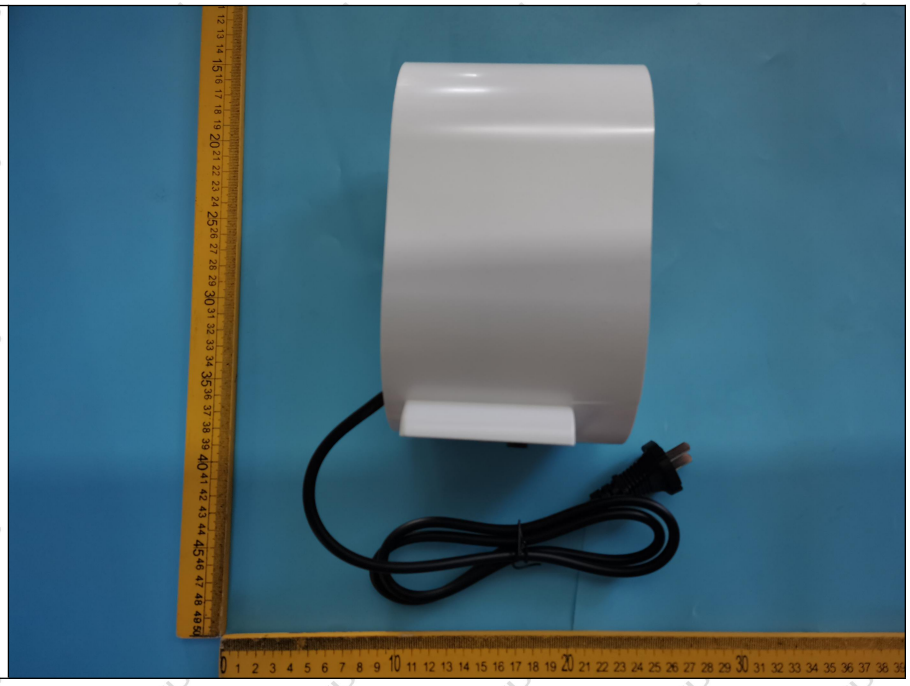
Photo 2

EUT View 3

Photo 3

EUT View 4

Photo 4



EUT View 5

Photo 5	

EUT View 6

Photo 6	

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

Certificate of Conformity

Certification Number: HY21LC-003S

Shenzhen HuaYu Test Technology Co.,Ltd. hereby declares that testing has been completed and reports have been generated for:

Applicant:	**JieYang City Maist Plastic Products Co.,Ltd.**
Address:	JingLian Society, TangPu Village, FengMei Office, Airport Economic Area, JieYang City
Manufacturer:	**JieYang City Maist Plastic Products Co.,Ltd.**
Address:	JingLian Society, TangPu Village, FengMei Office, Airport Economic Area, JieYang City
Factory:	**JieYang City Maist Plastic Products Co.,Ltd.**
Address:	JingLian Society, TangPu Village, FengMei Office, Airport Economic Area, JieYang City
Product:	**Air Heater**
Model:	XH-3010, XH-1201, XH-301R, XH-302R, XH-303R, XH-401R, XH-402R, XH-403R, XH-501R, XH-502R, XH-601R, XH-602R, XH-801R, XH-802R, XH-803R, XH-901R, XH-902R, XH-1001R, XH-1002R, XH-1201R, XH-1202R, XH-1301R, XH-1302R, XH-1303R, XH-1501, XH-1601, XH-2021
Rating:	220-240V~ 50Hz 3000W Max
Test standard:	**EN60335-1: 2012+A11:2014+A13:2017+A1:2019+A2:2019+A14:2019** **EN60335-2-30: 2009/A11:2012+A1:2020+A12:2020** **EN62233:2008**

The EUT described above has been consolidate by us and found in compliance with the council Low Voltage Directive -- 2014/35/EU. It is only valid in connection with the report number: HY21LR-003S

CE

Senior Manager

December 2, 2021

This certificate of conformity is based on a single evaluation of the submitted sample(s) of the above mentioned product. It does not imply an assessment of the whole product and relevant. Directives have to be observed.

Certificate of Conformity

Certification Number: HY21LC-003E

Shenzhen HuaYu Test Technology Co.,Ltd. hereby declares that testing has been completed and reports have been generated for:

APPLICANT:	**JieYang City Maist Plastic Products Co.,Ltd.**
ADDRESS:	JingLian Society, TangPu Village, FengMei Office, Airport Economic Area, JieYang City
Manufacture:	**JieYang City Maist Plastic Products Co.,Ltd.**
Address:	JingLian Society, TangPu Village, FengMei Office, Airport Economic Area, JieYang City
Factory:	**JieYang City Maist Plastic Products Co.,Ltd.**
Address:	JingLian Society, TangPu Village, FengMei Office, Airport Economic Area, JieYang City
Product:	**Air Heater**
Model:	XH-3010, XH-1201, XH-301R, XH-302R, XH-303R, XH-401R, XH-402R, XH-403R, XH-501R, XH-502R, XH-601R, XH-602R, XH-801R, XH-802R, XH-803R, XH-901R, XH-902R, XH-1001R, XH-1002R, XH-1201R, XH-1202R, XH-1301R, XH-1302R, XH-1303R, XH-1501, XH-1601, XH-2021
Rating:	220-240V~ 50Hz 3000W Max
Test standard:	**EN 55014-1:2017+A11:2020** **EN 55014-2:2015** **EN 61000-3-2:2019+A1:2021** **EN 61000-3-3:2013+A1:2019**

The EUT described above has been consolidate by us and found in compliance with the council Electromagnetic Compatibility (as amended) -- 2014/30/EU.
It is only valid in connection with the report number: HY21LR-003E

CE

Senior Manager
December 2, 2021

This certificate of conformity is based on a single evaluation of the submitted sample(s) of the above mentioned product. It does not imply an assessment of the whole product and relevant. Directives have to be observed.

No. D880, 4th Floor, Building 1, Detai Industrial Park, Huarong Road No. 460,
Dalang Street, Longhua New District, Shenzhen
Shenzhen HuaYu Test Technology Co.,Ltd. http://www.hyjctest.com

Registered / Enregistré 10/10/2022

No 009201411-0001

The Executive Director / Le Directeur exécutif

Christian Archambeau

EUIPO
EUROPEAN UNION
INTELLECTUAL PROPERTY OFFICE

EUROPEAN UNION INTELLECTUAL PROPERTY OFFICE
CERTIFICATE OF REGISTRATION

This Certificate of Registration is hereby issued for the Registered Community Design identified below. The corresponding entries have been recorded in the Register of Community Designs.

OFFICE DE L'UNION EUROPÉENNE POUR LA PROPRIÉTÉ INTELLECTUELLE
CERTIFICAT D'ENREGISTREMENT

Le présent Certificat d'Enregistrement est émis pour le Dessin ou Modèle Communautaire enregistré spécifié ci-dessous. Les inscriptions afférentes ont été portées au Registre des Dessins ou Modèles Communautaires.

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21 009201411-0001
25 EN - FR
22 10/10/2022
15 10/10/2022
45 13/10/2022
11 009201411-0001
72 Huang Chumin
73 Jieyang Meister Plastic Products Co., Ltd.
Economic Association, Tangpu Village, Fengmei Office, Airport Economic Zone
Jieyang City,Guangdong Province
REPÚBLICA POPULAR DE CHINA
74 IPSIDE
6 Impasse Michel Labrousse
F-31100 Toulouse
FRANCIA
51 23 - 03
54 BG - Вентилаторни отплителни уреди

ES - Calentadores con ventilador

CS - Teplovzdušná topidla

DA - Varmeblæsere

DE - Heizlüfter

ET - Kütteventilaatorid

EL - Αερόθερμα

EN - Fan heaters

FR - Ventilateurs chauffants

IT - Termoventilatori

LV - Ventilatora tipa sildierīces

LT - Ventiliatoriniai šildytuvai

HR - Ventilatorske grijalice

HU - Fűtőventilátorok

MT - Ħiters b'fann

NL - Ventilatorkachels

PL - Grzejniki wentylatorowe

PT - Termoventiladores

RO - Aeroterme

SK - Ventilátorové ohrievače

SL - Kaloriferji

FI - Lämpöpuhaltimet

SV - Värmefläktar

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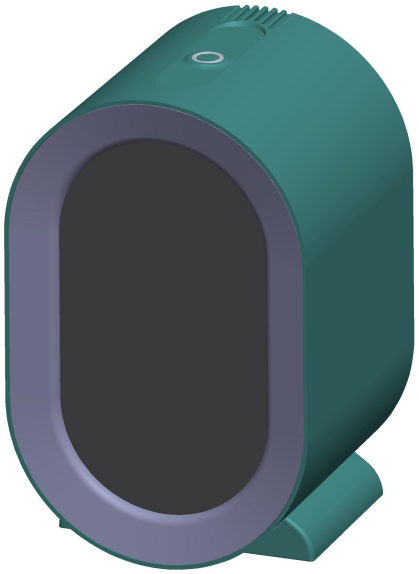

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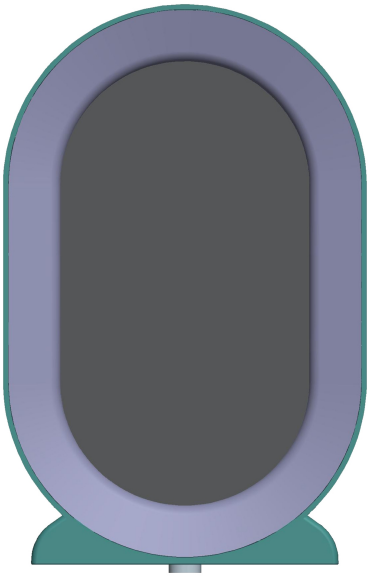

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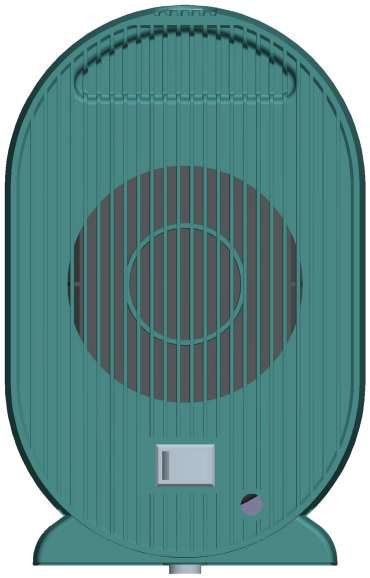

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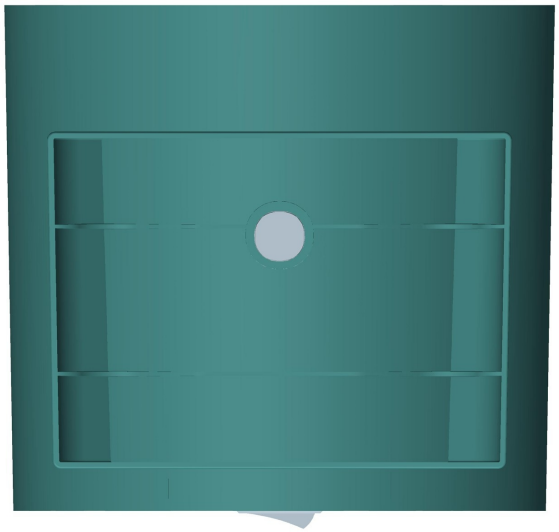

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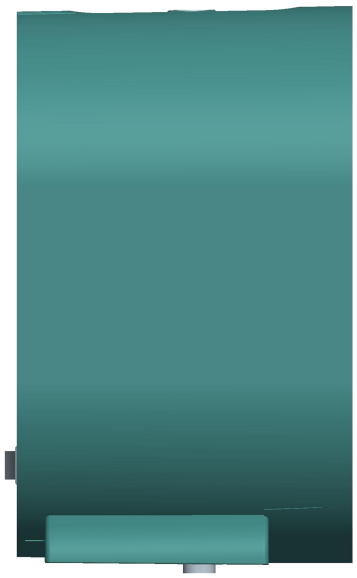

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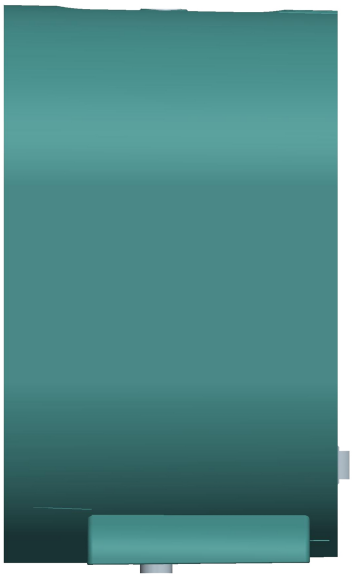

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