Prüfbericht-Nr.: *Test Report No.:*	**50080898 011**	**Auftrags-Nr.:** *Order No.:*	180107136	Seite 1 von 52 *Page 1 of 52*
Kunden-Referenz-Nr.: *Client Reference No.:*	N/A	**Auftragsdatum:** *Order date:*	09.05.2019	
Auftraggeber: *Client:*	CIXI XINXIULI ELECTRICAL APPLIANCES CO.,LTD. The North Industrial Park, Fuhai Town, Cixi ,Zhejiang 315315 P. R. China			
Prüfgegenstand: *Test item:*	Fan Heater			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	EF-10B			
Auftrags-Inhalt: *Order content:*	Type Test			
Prüfgrundlage: *Test specification:*	EN 60335-1:2012+A11 EN 60335-2-30:2009+A11 EN 62233:2008			

Wareneingangsdatum: *Date of receipt:*	05.06.2019
Prüfmuster-Nr.: *Test sample No.:*	A000917099
Prüfzeitraum: *Testing period:*	05.06.2019 – 20.08.2019
Ort der Prüfung: *Place of testing:*	TÜV Rheinland /CCIC (Ningbo) Co., Ltd.
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland /CCIC (Ningbo) Co., Ltd.
Prüfergebnis*: *Test result*:*	Pass

geprüft von / *tested by*:			**kontrolliert von** / *reviewed by*:		
29.08.2019	Ray Liu/PE	Ray Liu	29.08.2019	Weimin Zhang/TC	
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other*: Product is on TRLP's PAK negative list rev. 1.3/2015. The risk assessment is negative, categorization, evaluation or testing is not necessary. Product complies to AfPS GS 2014:01 PAK clause 3.1 add new additional type in this report.
Annex 1: Measuring and Testing Equipment List (1 page)

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut	3 = befriedigend F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	4 = ausreichend N/A = nicht anwendbar	5 = mangelhaft N/T = nicht getestet
Legend:	*1 = very good* *P(ass) = passed a.m. test specification(s)*	*2 = good*	*3 = satisfactory* *F(ail) = failed a.m. test specification(s)*	*4 = sufficient* *N/A = not applicable*	*5 = poor* *N/T = not tested*

V04

TEST REPORT
IEC 60335-2-30
Safety of household and similar electrical appliances
Part 2: Particular requirements for room heaters

Report Number. ..... :	50080898 011
Date of issue ..... :	See cover page
Total number of pages ..... :	See cover page
Applicant's name ..... :	CIXI XINXIULI ELECTRICAL APPLIANCES CO.,LTD.
Address ..... :	The North Industrial Park, Fuhai Town,Cixi, Zhejiang 315315 P. R. China
Test specification:	
Standard ..... :	IEC 60335-2-30 (Fifth Edition) :2009 used in conjunction with IEC 60335-1:2010 (Fifth Edition)
Test procedure ..... :	GS mark & CE LVD
Non-standard test method……..:	N/A
Test Report Form No. ..... :	IEC60335_2_30J
Test Report Form(s) Originator .... :	LCIE
Master TRF ..... :	Dated 2013-09

Test item description ..... :	Fan Heater
Trade Mark ..... :	N/A
Manufacturer ..... :	CIXI XINXIULI ELECTRICAL APPLIANCES CO.,LTD. The North Industrial Park, Fuhai Town,Cixi, Zhejiang 315315 P. R. China
Model/Type reference ..... :	EF-10B
Ratings ..... :	AC220-240V, 50Hz, 1750-2000W, Class I

Testing procedure and testing location:			
☒	**Testing Laboratory:**	TŰV Rheinland /CCIC (Ningbo) Co., Ltd.	
Testing location/ address ..... :		3F,Building C13, R&D Park, No.32 Lane 299 Guanghua Road, National Hi-Tech Zone, Ningbo 315048 China	
☐	**Associated Laboratory:**		
Testing location/ address ..... :			
	Tested by (name + signature).....:	See cover page	
	Approved by (name + signature)...:	See cover page	
☐	**Testing procedure: TMP**		
Testing location/ address ..... :			
	Tested by (name + signature).....:		
	Approved by (name + signature)...:		
☐	**Testing procedure: WMT**		
Testing location/ address ..... :			
	Tested by (name + signature).....:		
	Witnessed by (name + signature)..:		
	Approved by (name + signature)...:		
☐	**Testing procedure: SMT**		
Testing location/ address ..... :			
	Tested by (name + signature).....:		
	Approved by (name + signature)...:		
	Supervised by (name + signature) :		
☐	**Testing procedure: RMT**		
Testing location/ address ..... :			
	Tested by (name + signature).....:		
	Approved by (name + signature)...:		
	Supervised by (name + signature) :		

Summary of testing:

1. EF-10B subjecet tests of clause 7, 8, 10, 11, 13, 19.101, 19.108, 19.109, 19.112, 20, 21, 22, 24 and 29 by portble appliance with feet, and the test of clause 10, 11 and 13 by fixed appliance.

Reasonable foreseeable use is covered by the standard and related EK decision applied. Currently neither a safeguard clause procedure has been invoked nor is an increase in accidents known for this / these product (s).

Tests performed (name of test and test clause):	**Testing location:**
All tests above	TŰV Rheinland /CCIC (Ningbo) Co., Ltd. 3F,Building C13, R&D Park, No.32 Lane 299 Guanghua Road, National Hi-Tech Zone, Ningbo 315048 China

Summary of compliance with National Differences

List of countries addressed:

DE(DE=Germany)

The product fulfils the requirements of EN 60335-1:2012+A11, EN 60335-2-30:2009+A11, EN 62233:2008。

Requirements of AfPS GS 2014:01 PAK clause 3.1 considered.

CTL decision DSH 0812 was considered

Copy of marking plate

EF-10B
AC220-240V 50Hz 1750-2000W
CIXI XINXIULI ELECTRICAL APPLIANCES CO.,LTD.
The North Industrial Park, Fuhai Town, Cixi, Zhejiang 315315 P. R. China

Remark:

1. Manufacture or/and his importer shall ensure product bears label requirements in article 6 and article 8 of the 2014/35/EU relate to name, batch number, post address prior place the product into EU market.

Test item particulars .....:	
Classification of installation and use.....:	fixed appliance and protable appliance
Supply Connection.....:	Supply cord fitted with a plug (Type Y attachment)
.....:	
Possible test case verdicts:	
- test case does not apply to the test object..... :	**N/A**
- test object does meet the requirement..... :	**P (Pass)**
- test object does not meet the requirement..... :	**F (Fail)**
Testing ..... :	
Date of receipt of test item ..... :	See cover page
Date (s) of performance of tests..... :	See cover page

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

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

General product information:

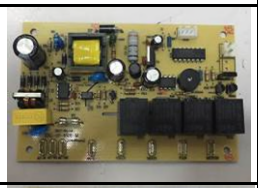
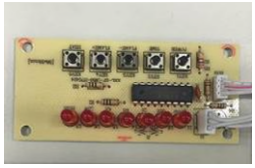
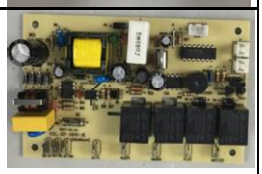
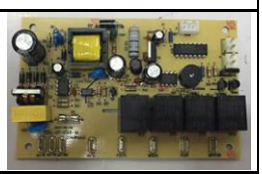
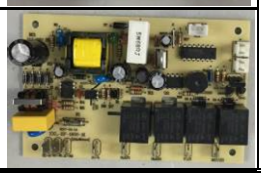
1. All these fan heaters are fixed fan heaters for household use only.
2. For all models, they are equipped inside with power switch, fan motor, decorative motor, Voltage maintained non-self-resetting thermal cut-out, heating element, power PCB, control PCB, LED PCB.
3. For the difference of each model, see following Table 1 and Table 2.

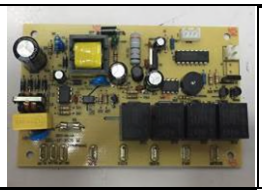
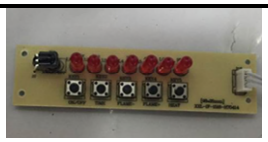
Table 1

Model	Rated Input	Air outlet direction	Motor	Size (long*wide*high)	Decorative materials	Appearance
EF-11A	1750-2000W	Top	YJ48-15	660*145*520	cobblestone	
EF-11B	1750-2000W	Top	YJ48-15	660*145*520	Plastic of Simulated charcoal fire	
EF-11C	1750-2000W	Top	YJ48-15	660*132*520	cobblestone	
EF-11D	1750-2000W	Top	YJ48-15	660*132*520	Plastic of Simulated charcoal fire	

EF-14A	1750-2000W	Top	YJ48-15	900*150*560	cobblestone	
EF-14B	1750-2000W	Top	YJ48-15	900*150*560	Plastic of Simulated charcoal fire	
EF-14C	1750-2000W	Top	YJ48-15	900*145*560	cobblestone	
EF-14D	1750-2000W	Top	YJ48-15	900*145*560	Plastic of Simulated charcoal fire	
EF-1623	1400-1600W	Top	YJ48-16	600*130*470	Plastic of Simulated charcoal fire	
EF-1633	1400-1600W	Top	YJ48-16	840*140*450	Plastic of Simulated charcoal fire	
EF-1650	1400-1600W	Top	YJ48-16	1280*140*550	Plastic of Simulated charcoal fire	
IF-1516	1750-2000W	front	YJ61-12	523*173*593	Plastic of Simulated charcoal fire	

Table 2

Model	Power PCB	Control PCB	LED PCB	Number of LED PCB
EF-11A EF-11B EF-11C EF-11D				X1
EF-14A EF-14B EF-14C EF-14D EF-1623				X1
EF-1633				X2
EF-1650				X2

IF-1516				X1

Remark:

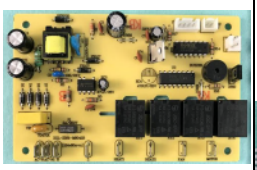
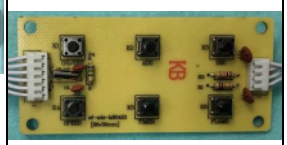
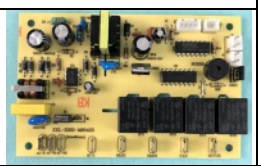
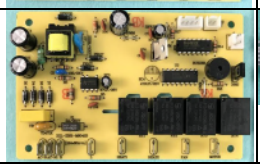
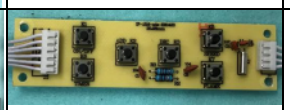
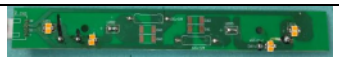
- For models EF-11A, EF-11B, EF-11C, EF-11D, EF-14A, EF-14B, EF-14C, EF-14D, they have similar construction except the shape and size.
- For models EF-1623, EF-1633, EF-1650, they have similar construction except the shape and size.

4. CTL decision DSH 0812 was considered. The lamp classification group is excempt group according to EN 62471.

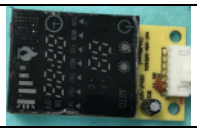
Amendment 1:
The original Test Report Ref. No. 50080898 001 dated 2017-06-30 was modified on 2017-07-07 to issue Co-license.
Amendment 2:
The original Test Report Ref. No. 50080898 001 dated 2017-06-30 was modified on 2017-07-07 to issue Co-license.
Amendment 3:
The original Test Report Ref. No. 50080898 001 dated 2017-06-30 was modified on 2018-06-28 as following:

1. Power PCB, control PCB, LED PCB were changed for all models.

For the difference of each model, see following table 3

Model	Power PCB	Control PCB	LED PCB	Number of LED PCB
EF-11A EF-11B EF-11C EF-11D				X1
EF-14A EF-14B EF-14C EF-14D EF-1623				X1
EF-1633				X2
EF-1650				X2
IF-1516				X1

2. Add additional control PCB board for all models,see following table 4

Model	Control PCB
All models	

3. Add additional temperature sensor for all models. The temperature sensor cannot be accessible after the appliance finish installation. User manual was revised.
4. Change the installation mode of decorative glass for models EF-11A,EF-11B,EF-11C, EF-11D,EF-14A,EF-14B,EF-14C,EF-14D. For detail see photo documentation.
5. LED was changed, CTL decision DSH 0812 was considered. The lamp classification group is excempt group according to EN 62471.

After assessment, IF-1516 and EF-1650 were subjected to tests of Cl.17, Cl.19.11, Cl.19.12 and Cl.22.5. CDF was revised, for detail see the bold in table 24.1.

This test report is only valid together with test report 50080898 001.

Amendment 4:
The original Test Report Ref. No. 50080898 001 dated 2017-06-30 was modified on 2017-07-07 to issue Co-license

Amendment 5:
The original Test Report Ref. No. 50080898 001 dated 2017-06-30 was modified on 2017-07-07 to issue Co-license

Amendment 6:
The original Test Report Ref. No. 50080898 001 dated 2017-06-30 was modified on 2017-07-07 to issue Co-license

Amendment 7:
The original Test Report Ref. No. 50080898 001 dated 2017-06-30 was modified on 2017-07-07 to issue Co-license

Amendment 8:
The original Test Report Ref. No. 50080898 001 dated 2017-06-30 was modified on 2017-07-07 to issue Co-license

Amendment 9:
The original Test Report Ref. No. 50080898 001 dated 2017-06-30 was modified on 2017-07-07 to Alternative plug in table 24.1 and CDF.
This test report is only valid together with test report 50080898 001~009.

Amendment 10:
The original Test Report Ref. No. 50080898 001 dated 2017-06-30 was modified on 2019-08-29 as following:

Add new type in this report and relevant tests are performed on samples.

1. The new model EF-10B is same as EF-11B except for the appearance, it was equipped inside with power switch, fan motor, decorative motor, Voltage maintained non-self-resetting thermal cut-out, heating element, power PCB, control PCB, LED PCB， and the new model can be used as portable appliance and fixed appliance. Detail refer to photo and CDF.

IEC 60335-2-30			
Clause	Requirement + Test	Result - Remark	Verdict
5	GENERAL CONDITIONS FOR THE TESTS		—
	Tests performed according to cl. 5, e.g. nature of supply, sequence of testing, etc.		P
5.2	Heaters intended to be installed adjacent to each other, tests made with sufficient number. (IEC 60335-2-30)		N/A
5.3	Appliance used for tests of Cl. 19 also used for the test of Cl. 22.24 (IEC 60335-2-30)		P
	Test of Cl. 22.24 carried out after test of Cl. 29 (IEC 60335-2-30)		P
5.6	Thermostats short-circuited if sensible to room air temperature (IEC 60335-2-30)		P
	However, if the thermostat can be set so that it does not cycle, it is not short-circuited, unless otherwise specified (IEC 60335-2-30)		N/A
5.10	Heaters intended to be installed adjacent to each other, installed in accordance with instructions (IEC 60335-2-30)		N/A
5.101	Heaters intended to be used as both portable and fixed appliances are subjected to the tests applicable to both types (IEC 60335-2-30)		P
5.102	If the heater is a combination of two or more types, tests relevant for each type (IEC 60335-2-30)		N/A
	Heaters for wall-mounting are tested both as heaters for mounting high level and as heaters for mounting other than at high level (IEC 60335-2-30)	Heaters only for mounting other than at high level	P
	Unless the installation instructions state that the heater has to be installed at least 1,8m above the floor. (IEC 60335-2-30)		N/A
6	CLASSIFICATION		—
6.1	Protection against electric shock: Class 0, 0I, I, II, III .....:	Class I	P
6.2	Protection against harmful ingress of water	IP20	N/A
	Heaters intended for use in greenhouses or building sites shall be at least IPX4 (IEC 60335-2-30)		N/A
7	MARKING AND INSTRUCTIONS		—
7.1	Rated voltage or voltage range (V).....:	AC220-240V	P
	Symbol for nature of supply, or.....:		N/A
	Rated frequency (Hz).....:	50Hz	P
	Rated power input (W):.....:	1750-2000W	P
	Rated current (A) .....:		N/A

IEC 60335-2-30			
Clause	Requirement + Test	Result - Remark	Verdict
	Manufacturer's or responsible vendor's name, trademark or identification mark .....:	CIXI XINXIULI ELECTRICAL APPLIANCES CO.,LTD.	P
	Model or type reference .....:	EF-10B	P
	Symbol 5172 of IEC 60417, for Class II appliances		N/A
	IP number, other than IPX0 .....:	IP20	N/A
	Symbol IEC 60417-5180, for class III appliances, unless		N/A
	the appliance is operated by batteries only		N/A
	Symbol IEC 60417-5036, for the enclosure of electrically-operated water valves in external hose-sets for connection of an appliance to the water mains, if the working voltage exceeds extra-low voltage		N/A
	Symbol IEC 60417-5036, for the enclosure of electrically-operated water valves in external hose-sets for connection of an appliance to the water mains		N/A
	Heaters intended to be filled with liquid by the user shall be marked with max. and min. levels (IEC 60335-2-30)		N/A
	Heaters shall be marked: WARNING "Do not cover" - or with the symbol 5641 of IEC 60417-1 except for colours (IEC 60335-2-30)		P
	This Marking is not required for- (IEC 60335-2-30)		—
	- Heaters for mounting high level; (IEC 60335-2-30)		N/A
	- visible glowing radiant heaters (IEC 60335-2-30)		N/A
	- heaters constructed so that they cannot be covered: (IEC 60335-2-30)		N/A
	- heaters also intended to dry clothes and witch comply with IEC 60335-2-43 (IEC 60335-2-30)		N/A
	-heaters for mounting under benches (IEC 60335-2-30)		N/A
	Heaters having a fireguard that is intended to be removed for transportation or storage shall be marked to state that the heater must not be operated without this guard in place (IEC 60335-2-30)		N/A
	For ceiling mounting heat lamp appliances, the maximum rated wattage and type of each lamp shall be marked (IEC 60335-2-30)		N/A
7.2	Warning for stationary appliances for multiple supply		N/A
	Warning placed in vicinity of terminal cover		N/A
7.3	Range of rated values marked with the lower and upper limits separated by a hyphen	AC220-240V	P

IEC 60335-2-30			
Clause	Requirement + Test	Result - Remark	Verdict
	Different rated values marked with the values separated by an oblique stroke		N/A
7.4	Appliances adjustable for different rated voltages, the voltage setting is clearly discernible		N/A
	Requirement met if frequent changes are not required and the rated voltage to which the appliance is to be adjusted is determined from a wiring diagram		N/A
7.5	Appliances with more than one rated voltage or one or more rated voltage ranges, marked with rated input or rated current for each rated voltage or range, unless		P
	the power input is related to the arithmetic mean value of the rated voltage range		N/A
	Relation between marking for upper and lower limits of rated power input or rated current and voltage is clear		P
7.6	Correct symbols used		P
	Symbol for nature of supply placed next to rated voltage		N/A
	Symbol for class II appliances placed unlikely to be confused with other marking		N/A
	Units of physical quantities and their symbols according to international standardized system		P
	Symbol 5641 of IEC 60417-1 (do not cover) is used except for colours (IEC 60335-2-30)		P
7.7	Connection diagram fixed to appliances to be connected to more than two supply conductors and appliances for multiple supply		N/A
7.8	Except for type Z attachment, terminals for connection to the supply mains indicated as follows:		—
	- marking of terminals exclusively for the neutral conductor (N)		N/A
	- marking of protective earthing terminals (symbol 5019 of IEC 60417)		P
	- marking not placed on removable parts		P
7.9	Marking or placing of switches which may cause a hazard		P
7.10	Indications of switches on stationary appliances and controls on all appliances by use of figures, letters or other visual means.....:		P
	This applies also to switches which are part of a control		P
	If figures are used, the off position indicated by the figure 0		P

IEC 60335-2-30			
Clause	Requirement + Test	Result - Remark	Verdict
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		P
7.11	Indication for direction of adjustment of controls		P
7.12	Instructions for safe use provided		P
	Details concerning precautions during user maintenance		P
	The instructions state that:		N/A
	- the appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction	Replaced by EN 60335-1:2012	N/A
	- children being supervised not to play with the appliance	Replaced by EN 60335-1:2012	N/A
	For a part of class III construction supplied from a detachable power supply unit, the instructions state that the appliance is only to be used with the unit provided		N/A
	Instructions for class III appliances state that it must only be supplied at SELV, unless		N/A
	it is a battery-operated appliance, the battery being charged outside the appliance		N/A
	Instructions for safe use provided: ..... (IEC 60335-2-30)		P
	- If Symbol 5641 of IEC 60417-1 (do not cover) is marked on the appliance, its meaning is explained. (IEC 60335-2-30)		P
	-For heaters marked ”Do not cover” (or with symbol) contain the substance of: In order to avoid overheating, do not cover the heater (IEC 60335-2-30)		P
	-Statement: heater is not located immediately below a socket-outlet (IEC 60335-2-30)		P
	-Statement for heaters with heating elements in direct contact with accessible panel made of glass, ceramic or similar material , includes the following warning: The heater must not be used if the glass *(or ceramic or similar material*) panels are damaged (IEC 60335-2-30)		N/A
	-Statements for visibly glowing radiant heaters, other than heaters for mounting at high level, includes the substance of following: Do not use the heater with a programmer, timer or any other device that switches the heater on automatically (IEC 60335-2-30)		N/A
	-have a fireguard that can be partly removed without the aid of a tool includes the substance of following:..... (IEC 60335-2-30)		N/A

IEC 60335-2-30			
Clause	Requirement + Test	Result - Remark	Verdict
	The fireguard of this heater is intended to prevent direct access to heating elements and must be in place when the heater is used.		N/A
	The fireguard does not give full protection for young people and infirm persons		N/A
	-Statements for portable heaters : Do not use this heater in the immediate surroundings of a bath, a shower or a swimming pool (IEC 60335-2-30)		P
	-Statements for visibly glowing radiant heaters: shall be provided for cleaning the reflector, if appropriate (IEC 60335-2-30)		N/A
	-Statement: shall be provided for replacing the lamps of fuel-effect heaters (IEC 60335-2-30)		N/A
	-Statements for oil-filled radiators: ..... (IEC 60335-2-30)		N/A
	- this heater is filled with a precise quantity of special oil. Repairs requiring opening of the oil container are only to be made by the manufacturer or his service agent who should be contacted if there is an oil leakage		N/A
	- regulations concerning the disposal of oil when scrapping the appliance have to be followed		N/A
	Instructions shall be provided for routine cleaning of ceiling mounted heat lamp appliances including removal of covers if applicable (IEC 60335-2-30)		N/A
	The instructions for room heaters without a built-in room thermostat or thermal control limiting the room temperature shall include the substance of the following: WARNING: This heater is not equipped with a device to control the room temperature. Do not use this heater in small rooms when they are occupied by persons not capable of leaving the room on their own, unless constant supervision is provided.		P
7.12.1	Sufficient details for installation supplied		P
	For an appliance intended to be permanently connected to the water mains and not connected by a hose-set, this is stated		N/A
	Instructions for heaters intended to be fixed by screws or other give details on the method of fixing (IEC 60335-2-30)		P
	Instructions for visibly glowing radiant heaters warn about the possible danger of installation close to curtains and other combustible materials (IEC 60335-2-30)		N/A
	Instructions for heaters for mounting at high level state that the heater must be installed at least 1,8 m above the floor (IEC 60335-2-30)		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructions for fixed heaters likely to be used in a bathroom: that the heater is to be installed so that switches and other controls cannot be touched by a person in the bath or shower (IEC 60335-2-30)		N/A
	Statement for heaters with rollers or feet delivered separately: how they have to be fixed (IEC 60335-2-30)		P
	Statement for heaters intended to be installed in wardrobes or ceiling: for proper installation in a wardrobe or in the ceiling (IEC 60335-2-30)		N/A
	The installation instructions for ceiling mounted heat lamp appliances, recessed into a ceiling place or cavity shall give details for proper installation in the ceiling and shall state the substance of the following: ..... (IEC 60335-2-30)		N/A
	-The appliance shall, under no circumstances, be covered with insulating material or similar material.		N/A
	-Regulations concerning the discharge of air have to be fulfilled.		N/A
	-Joists, beams and rafters shall not be cut or notched to install the appliance		N/A
	The installation instructions for heaters for mounting under church benches shall state: ..... (IEC 60335-2-30)		N/A
	-The heater is intended for installation under benches that are fixed in position		N/A
	- The minimum distance between the underside of the installed heater and the floor		N/A
	-The minimum distances of the relevant surfaces of the heaters to the front and rear edge of the underside of the bench which shall be not less than 50 mm		N/A
	The installation instructions for heaters intended to be built into the floor and that incorporate a floor level grille shall state the substance of the following: (IEC 60335-2-30) After installation, ensure that any drain holes are free from obstruction.		N/A
	Ensure that any floor level grille has a mechanical strength consistent with the national building codes. (IEC 60335-2-30)		N/A
7.12.2	Stationary appliances not fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III, the instructions state that means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules		N/A
7.12.3	Insulation of the fixed wiring in contact with parts exceeding 50 K during clause 11; instructions stating that the fixed wiring must be protected		N/A
7.12.4	Instructions for built-in appliances:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- dimensions of space		N/A
	- dimensions and position of supporting means		N/A
	- minimum distances between parts and surrounding structure		N/A
	- minimum dimensions of ventilating openings and arrangement		N/A
	- connection to supply mains and interconnection of separate components		N/A
	- allow disconnection of the appliance after installation, by accessible plug or a switch in the fixed wiring, unless		N/A
	a switch complying with 24.3		N/A
7.12.5	Replacement cord instructions, type X attachment with a specially prepared cord		N/A
	Replacement cord instructions, type Y attachment		P
	Replacement cord instructions, type Z attachment		N/A
7.12.6	Caution in the instructions for appliances incorporating a non-self-resetting thermal cut-out that is reset by disconnection of the supply mains, if this cut-out is required to comply with the standard		P
7.12.7	Instructions for fixed appliances stating how the appliance is to be fixed		P
7.12.8	Instructions for appliances connected to the water mains:		N/A
	- max. inlet water pressure (Pa):		N/A
	- min. inlet water pressure, if necessary (Pa):		N/A
	Instructions concerning new and old hose-sets for appliances connected to the water mains by detachable hose-sets		N/A
7.13	Instructions and other texts in an official language	English and German versions	P
7.14	Marking clearly legible and durable		P
	The height of the “Do not cover “ symbol shall be at least 15 mm (IEC 60335-2-30)		P
	The height of the words “Do not cover “ shall be at least 3 mm (IEC 60335-2-30)		N/A
	The height of the words relating to the maximum rated wattage and type of heat lamp shall be at last 6mm (IEC 60335-2-30)		N/A
7.15	Marking on a main part		P
	Marking clearly discernible from the outside, if necessary after removal of a cover		P
	For portable appliances, cover can be removed or opened without a tool	no such cover	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	For stationary appliances, name, trademark or identification mark and model or type reference visible after installation		N/A
	For fixed appliances, name, trademark or identification mark and model or type reference visible after installation according to the instructions		P
	Indications for switches and controls placed on or near the components. Marking not on parts which can be positioned or repositioned in such a way that the marking is misleading		P
	Heaters for mounting at high level, indication of the different positions of switches visible from a distance of 1 m (IEC 60335-2-30)		N/A
	Marking concerning covering visible shall be visible after the heater has been installed. It shall not be placed on the bottom of, or on the back of, portable heaters. (IEC 60335-2-30)		N/A
	Marking not placed on the back of portable heaters (IEC 60335-2-30)		P
	Marking concerning removable fireguards visible before fitting the fireguard (IEC 60335-2-30)		N/A
	For ceiling mounted heat lamp appliances, the marking relating to the maximum rated wattage and type of heat lamp shall be visible when replacing a lamp in accordance with the instructions (IEC 60335-2-30)		N/A
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link		N/A
8	PROTECTION AGAINST ACCESS TO LIVE PARTS		—
8.1	Adequate protection against accidental contact with live parts		P
	This requirement does not apply to live parts of screw-type or bayonet-type lampholders incorporated in ceiling mounted heat lamp appliances that are only accessible when the heat lamp is extracted (IEC 60335-2-30)		N/A
8.1.1	Requirement applies for all positions, detachable parts removed		P
	Lamps behind a detachable cover not removed, if conditions met		N/A
	Insertion or removal of lamps, protection against contact with live parts of the lamp cap		N/A
	Use of test probe B of IEC 61032: no contact with live parts		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Detachable fireguards not removed if their removal requires the use of a tool, provided that (IEC 60335-2-30)		—
	- the instructions state that the plug must be removed from the socket-outlet before cleaning the reflector, or		N/A
	- the heater incorporates a switch having contact separation all poles that provides full disconnection under overvoltage category III conditions		N/A
8.1.2	Use of test probe 13 of IEC 61032 through openings in class 0 appliances and class II appliances/ constructions: no contact with live parts		P
	Test probe 13 also applied through openings in earthed metal enclosures having a non-conductive coating: no contact with live parts		P
8.1.4	Accessible part not considered live if:		—
	- safety extra-low a.c. voltage: peak value not exceeding 42.4 V		N/A
	- safety extra-low d.c. voltage: not exceeding 42.4 V		N/A
	- or separated from live parts by protective impedance		N/A
	If protective impedance: d.c. current not exceeding 2 mA, and		N/A
	a.c. peak value not exceeding 0.7 mA		N/A
	- for peak values over 42.4 V up to and including 450 V, capacitance not exceeding 0,1 μF		N/A
	- for peak values over 450 V up to and including 15 kV, discharge not exceeding 45 μC		N/A
	-for peak values over 15kV, the energy in the discharge not exceeding 350 mJ		N/A
8.1.5	Live parts protected at least by basic insulation before installation or assembly:		—
	- built-in appliances		N/A
	- fixed appliances		P
	- appliances delivered in separate units		N/A
8.2	Class II appliances and constructions constructed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only		P
	Only possible to touch parts separated from live parts by double or reinforced insulation		P
	During user maintenance and after the removal of detachable parts during replacement of heat lamp, the basic insulation of internal wiring may be touched provided electrically equivalent to the insulation of cords complying with IEC 60227 or IEC 60245 (IEC 60335-2-30)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

10	POWER INPUT AND CURRENT		—
10.1	Power input at normal operating temperature, rated voltage and normal operation not deviating from rated power input by more than shown in table 1	(see appended table)	P
	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless		P
	the rated power input is related to the arithmetic mean value		N/A
10.2	Current at normal operating temperature, rated voltage and normal operation not deviating from rated current by more than shown in table 2	(see appended table)	N/A
	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless		N/A
	the rated current is related to the arithmetic mean value of the range		N/A

11	HEATING		—
11.1	No excessive temperatures in normal use		P
11.2	Placing and mounting of appliance	(IEC 60335-2-30)	—
	-Portable fan heaters		P
	-Other heaters normaly placed on a floor		N/A
	-Fixed heater for mounting at high level		N/A
	-Other fixed heaters for wall mounting		P
	-Heaters for ceiling mounting)		N/A
	-Heaters for mounting under benches		N/A
	- Built-in heaters		N/A
	- Fixed heater with opening at floor level, felt pad pushed flat into the opening		N/A
	-Heaters having an air-outlet grille intended to be recessed in a floor, a window-sill or similar		N/A
	-Appliance provided with an automatic cord reel		N/A
	-Appliance with cord storage devices, other than automatic cord reel intended to accommodate supply cord partially while the appliance is in operation		N/A
	-Ceiling mounted heat lamp appliances		N/A
	-Recessed ceiling mounted heat lamp appliances are mounted as near as possible to the walls		N/A
11.3	Temperature rises, other than of windings, determined by thermocouples		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Temperature rises of windings determined by resistance method, unless		P
	the windings makes it difficult to make the necessary connections		N/A
	Temperature rise of the felt pad (IEC 60335-2-30)		P
11.4	Heating appliances operated under normal operation at 1.15 times rated power input ..... :	2300W	P
	If the temperature rise limits are exceeded in appliances incorporating motors, transformers or electronic circuits and the power input is lower than the rated power input, the test is repeated with the appliance supplied at 1.06 times rated voltage ..... (IEC 60335-2-30)		N/A
11.5	Motor-operated appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage..... :		N/A
11.6	Combined appliances are operated as heating appliances.... (IEC 60335-2-30)		P
11.7	Operation until steady conditions established (IEC 60335-2-30)		P
11.8	Temperature rises monitored continuously and not exceeding the values in table 3 ..... :	(see appended tables)	P
	If the temperature rise of a motor winding exceeds the value of table 3, or		N/A
	if there is doubt with regard to classification of insulation,		N/A
	tests of Annex C are carried out		N/A
	Protective devices do not operate, except		P
	components in protective electronic circuits tested for the number of cycles specified in 24.1.4		N/A
	Sealing compound does not flow out		P
	Modification of temperature rise in table 3 (IEC 60335-2-30)		P
	Temperature rise limits of motors, transformers or components of electronic circuits and other parts may be exceed by 1.15 times rated power input (IEC 60335-2-30)		N/A
	Outer surface of liquid container of unvested liquid-filled radiators shall be at least 50 K less than the boiling point of liquid (IEC 60335-2-30)	Boiling-point: °C	N/A
	Temperature rise of surfaces shall not exceed the values in table 101 (IEC 60335-2-30)	(see appended table)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	-Heaters intended to be mounted under church benches, the temperature rise of surfaces accessible to the test rod shall not exceed 70K (IEC 60335-2-30)		N/A
	-For heaters intended to be mounted under other benches, temperature rises not exceeding values in table 3, for parts that are held for short periods only (IEC 60335-2-30)		N/A
13	LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE		—
13.1	Leakage current not excessive and electric strength adequate		P
	Heating appliances operated at 1.15 times rated power input.....:	2300W	P
	Motor-operated appliances and combined appliances supplied at 1.06 times rated voltage.....:		N/A
	Protective impedance and radio interference filters disconnected before carrying out the tests		N/A
13.2	For class 0, class II and class III appliances, leakage current measured by means of the circuit described in figure 4 of IEC 60990		N/A
	For other appliances, a low impedance ammeter may be used	Class I	P
	Leakage current measurements	(see appended table)	P
13.3	The appliance is disconnected from the supply		P
	Electric strength tests according to table 4	(see appended table)	P
	No breakdown during the tests		P
19	ABNORMAL OPERATION		—
19.1	The risk of fire or mechanical damage under abnormal or careless operation obviated		P
	Electronic circuits so designed and applied that a fault will not render the appliance unsafe		P
	Heaters compliance is checked by the tests of Cl. 19.5, 19.6, 19.11, 19.12, 19.101 to 19.115, as applicable (IEC 60335-2-30)	Tests as portable appliance with 19.101, 19.108, 19.109 and 19.102.	P
	Appliances incorporating contactors or relays subjected to the test of 19.14, being carried out before the tests of 19.11		N/A
19.13	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 shown in table 9	(see appended table)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Compliance with clause 8 not impaired		P
	If the appliance can still be operated it complies with 20.2		P
	During Cl. 19.106, the temperature of motor windings shall not exceed the values in table 8 (IEC 60335-2-30)		P
	Insulation, other than of class III appliance, withstand the electric strength test of 16.3, the test voltage specified in table 4:		—
	- basic insulation.....:	1000V	P
	- supplementary insulation .....:		N/A
	- reinforced insulation.....:	3000V	P
	After operation or interruption of a control, clearances and creepage distances across the functional insulation withstanding the electric strength test of 16.3. the test voltage being twice the working voltage	480V	P
	The appliance does not undergo a dangerous malfunction, and		P
	no failure of protective electronic circuits, if the appliance is still operable		N/A
	Appliances tested with an electronic switch in the off position or in the stand-by mode, do not become operational		P
	- do not become operational, or		P
	- if they become operational, do not result in a dangerous malfunction during or after the tests of 19.11.4		N/A
	If the appliance contains lids or doors that are controlled by one or more interlocks, one of the interlocks may be released provided that:		N/A
	- the lid or door does not move automatically to an open position when the interlock is released, and		N/A
	- the appliance does not start after the cycle in which the interlock was released		N/A
19.101	Heaters operated at 1.24 times rated power input, all thermal controls operated during the test of Cl. 11 short-circuited simultaneously (IEC 60335-2-30)		P
19.108	Portable fan heaters, tests specified in Cl. 11. but a sheet of paper covered the air inlets for 4 h (IEC 60335-2-30)		P
19.109	Portable fan heaters,tests specified in Cl. 11 but air flow directed against a wall, thermal controls operated during the test of Cl. 11 short-circuited (IEC 60335-2-30)		P
	Maximum temperature rise (K) on the wall does not exceed 150 K (IEC 60335-2-30)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
19.112	Portable heaters,tests specified in Cl. 11 but overturned position on a soft wood surface covered with a double layer cotton gauze. The cotton gauze or the wood surface shall not smoulder or ignite (IEC 60335-2-30)	The cotton gauze or the wood surface not smoulder and ignite.	P
	Surface of oil-filled radiators shall be at least 40 K lower than the boiling point (°C) of the oil, no deformation of container, leakage of oil or emission of flames (IEC 60335-2-30)	(see appended table) Boiling-point: °C	N/A
	Pressure in liquid-filled radiators (IEC 60335-2-30)		N/A
	Fuel effect heaters intended to be placed in a fireplace not subjected to this test (IEC 60335-2-30)		N/A
20	STABILITY AND MECHANICAL HAZARDS		—
20.1	Portable heaters shall have adequate stability (IEC 60335-2-30)		P
	Portable heaters placed:	(IEC 60335-2-30)	—
	- most unfavourable normal position of use on a inclined plane of 15 °. The heater shall not overturn (IEC 60335-2-30)		P
	- on a horizontal plane with 5 N applied to the top. The heater shall not overturn (IEC 60335-2-30)		P
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury		P
	Protective enclosures, guards and similar parts are non-detachable, and		P
	have adequate mechanical strength		P
	Enclosures that can be opened by overriding an interlock are considered to be detachable parts		N/A
	Self-resetting thermal cut-outs and overcurrent protective devices not causing a hazard, by unexpected reclosure		N/A
	Not possible to touch dangerous moving parts with test probe		P
21	MECHANICAL STRENGTH		—
21.1	Appliance has adequate mechanical strength and is constructed as to withstand rough handling		P
	Checked by applying 3 blows to every point of the enclosure like to be weak, in accordance with test Ehb of IEC 60068-2-75, spring hammer test, with an impact energy of 0,5 J		P
	The appliance shows no damage impairing compliance with this standard, and		P

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Clause	Requirement + Test	Result - Remark	Verdict
	compliance with 8.1, 15.1 and clause 29 not impaired		P
	If doubt, supplementary or reinforced insulation subjected to the electric strength test of 16.3		N/A
	Compliance also checked by the tests of 21.101 and 21.102 (IEC 60335-2-30)		N/A
	For appliances with heating elements that are in direct contact with accessible glass panels, the impact energy of the blows applied to the panel is 2 J (IEC 60335-2-30)		N/A
	If necessary, repetition of groups of three blows on a new sample		N/A
21.2	Accessible parts of solid insulation having strength to prevent penetration by sharp implements		P
	The insulation is tested as specified, unless		N/A
	the thickness of supplementary insulation is at least 1 mm and reinforced insulation is at least 2 mm		P
21.101	Visibly glowing radiant heaters, other than heaters for mounting at high level, placed that the central part of the fireguard is horizontal - a mass of 5 kg having a flat base 100 mm placed for 1 min on the central part of the fireguard. The fireguard show no significant permanent deformation (IEC 60335-2-30)		N/A
21.102	Heaters having a part fixed to the wall or ceiling and another part hinged to it, fixed in accordance with the instructions - the hinged part fall away under its own weight five times - after test the heater compliance with Cl. 8.1 and Cl. 29.1 and show no damage (IEC 60335-2-30)		N/A
21.103	Panel heaters for ceiling mounting, suspension means shall have adequate strength - a load equal four times the mass of appliance suspended from the centre for 1 h - if suspension means rigid, torque of 2.5 Nm applied for 1 min in each direction - after tests suspension means shall show no significant deformation (IEC 60335-2-30)		N/A
22	CONSTRUCTION		—
22.1	Appliance marked with the first numeral of the IP system, relevant requirements of IEC 60529 are fulfilled	IP20	N/A
22.2	Stationary appliance: means to provide all-pole disconnection from the supply provided, the following means being available:		—
	- a supply cord fitted with a plug		N/A
	- a switch complying with 24.3		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided		N/A
	- an appliance inlet		N/A
	Single-pole switches and single-pole protective devices for the disconnection of heating elements in single-phase, permanently connected class 01 and class I appliances, connected to the phase conductor		N/A
22.3	Appliance provided with pins: no undue strain on socket-outlets		N/A
	Applied torque not exceeding 0.25 Nm		N/A
	Pull force of 50 N to each pin after the appliance has being placed in the heating cabinet; when cooled to room temperature the pins are not displaced by more than 1mm		N/A
	Each pin subjected to a tork of 0.4Nm; the pins are not rotating unless rotating does not impair compliance with the standard		N/A
22.4	Appliance for heating liquids and appliance causing undue vibration not provided with pins for insertion into socket-outlets		N/A
22.5	No risk of electric shock when touching the pins of the plug, for appliances having a capacitor with rated capacitance exceeding 0,1μF, the appliance being disconnected from the supply at the instant of voltage peak		P
	Voltage not exceeding 34 V (V) :	0V	P
22.6	Electrical insulation not affected by condensing water or leaking liquid		N/A
	Electrical insulation of Class II appliances not affected in case of a hose rupture or seal leak		N/A
	In case of doubt, test as described		N/A
22.7	Heaters containing liquid or gas shall be constructed that they withstand the pressure to occur during use -appliance subjected to twice the highest pressure during the tests of Cl. 19.101, 19.103 or 19.112 -after test there shall be no leakage of liquid or gas (IEC 60335-2-30)	Test pressure: MPa	N/A
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 that are likely to be cleaned in normal use		N/A
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances, unless		P
	the substance has adequate insulating properties		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.10	Not possible to reset voltage-maintained non-self-resetting thermal cut-outs by the operation of an automatic switching device incorporated within the appliance ,if:		P
	- a non-self-resetting thermal cut-out is required by the standard, and		N/A
	- a voltage maintained non-self-resetting thermal cut-out is used to meet it		P
	Non-self-resetting thermal motor protectors have a trip-free action, unless		N/A
	they are voltage maintained		P
	Reset buttons of non-self-resetting controls so located or protected that accidental resetting is unlikely		N/A
22.11	Reliable fixing of non-detachable parts that provide the necessary degree of protection against electric shock, moisture or contact with moving parts		P
	Obvious locked position of snap-in devices used for fixing such parts		N/A
	No deterioration of the fixing properties of snap-in devices used in parts that are likely to be removed during installation or servicing		N/A
	Tests as described		P
22.12	Handles, knobs etc. fixed in a reliable manner		P
	Fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible		P
	Axial force 15 N applied to parts, the shape being so that an axial pull is unlikely to be applied	Button	P
	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied		N/A
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		P
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance		P
	No exposed pointed ends of self-tapping screws etc., liable to be touched by the user in normal use or during user maintenance		P
22.15	Storage hooks and the like for flexible cords smooth and well rounded		N/A
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/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Cord reel tested with 6000 operations, as specified		N/A
	Electric strength test of 16.3, voltage of 1000 V applied		N/A
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner		N/A
	Requirement does not apply to rollers or feet, meets requirements of Cl. 19 without rollers or feet (IEC 60335-2-30)		N/A
22.18	Current-carrying parts and other metal parts resistant to corrosion under normal conditions of use		P
22.19	Driving belts not used as electrical insulation		N/A
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless material used is non-corrosive, non-hygroscopic and non-combustible		N/A
	Compliance is checked by inspection and, if necessary, by appropriate test		N/A
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless impregnated	No such materials	P
	This requirement does not apply to magnesium oxide and mineral ceramic fibres used for the electrical insulation of heating elements		N/A
22.22	Appliances not containing asbestos		P
22.23	Oils containing polychlorinated biphenyl (PCB) not used		P
22.24	Bare heating elements shall be supported to prevent excessive displacement occurring during normal use. The rupture of the heating element shall not give rise to a hazard. Compliance is checked by inspection, after the bare heating conductor has been cut in the most unfavourable place. The string shall not break (IEC 60335-2-30)		P
22.25	Sagging heating conductors cannot come into contact with accessible metal parts		P
22.26	The insulation between parts operating at safety extra-low voltage and other live parts complies with the requirements for double or reinforced insulation		N/A
22.27	Parts connected by protective impedance separated by double or reinforced insulation		N/A
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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.29	Class II appliances permanently connected to fixed wiring so constructed that the required degree of access to live parts is maintained after installation		N/A
22.30	Parts serving as supplementary or reinforced insulation fixed so that they cannot be removed without being seriously damaged, or		P
	so constructed that they cannot be replaced in an incorrect position, and so that if they are omitted, the appliance is rendered inoperable or manifestly incomplete		N/A
22.31	Neither clearances nor creepage distances over supplementary and reinforced insulation reduced below values specified in clause 29 as a result of wear		P
	Neither clearances nor creepage distances between live parts and accessible parts reduced below values for supplementary insulation if wires, screws etc. become loose		P
22.32	Supplementary and reinforced insulation constructed or protected against pollution so that clearances or creepage distances are not reduced below the values in clause 29 and reinforced insulation designed or protected against deposition of dirt or dust		P
	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 29.2		N/A
	Ceramic material not tightly sintered, similar material or beads alone not used as supplementary or reinforced insulation		N/A
	Oxygen bomb test at 70 °C for 96 h and 16 h at room temperature		N/A
	Insulating material in which heating conductors are embedded is considered to be basic insulation and not reinforced insulation		P
22.33	Conductive liquids that are or may become accessible in normal use are not in direct contact with live parts		N/A
	Electrodes not used for heating liquids		N/A
	For class II constructions, conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts, not in direct contact with basic or reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		N/A
	For class II constructions, conductive liquids which are in contact with live parts, not in direct contact with reinforced insulation, unless		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	the reinforced insulation consists of at least 3 layers		N/A
	An air layer not used as basic or supplementary insulation in a double insulation system if likely to be bridged by leaking liquid		N/A
22.34	Shafts of operating knobs, handles, levers etc. not live, unless the shaft is not accessible when the part is removed		P
22.35	For other than class III constructions, handles, levers and knobs, held or actuated in normal use, not becoming live in the event of a failure of basic insulation		P
	Such parts being of metal, and their shafts or fixings are likely to become 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		N/A
	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		N/A
	Insulating material covering metal handles, levers and knobs withstand the electric strength test of 16.3 for supplementary insulation		N/A
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		N/A
22.37	Capacitors in Class II appliances not connected to accessible metal parts and their casings, if of metal, separated from accessible metal parts by supplementary insulation, unless		N/A
	the capacitors comply with 22.42		N/A
22.38	Capacitors not connected between the contacts of a thermal cut-out		N/A
22.39	Lamp holders used only for the connection of lamps		N/A
	For ceiling mounted lam appliances, the insulating parts of lampholders used for the connection of replaceable heat lamp shall be ceramic (IEC 60335-2-30)		N/A
22.40	Motor-operated appliances and combined appliances intended to be moved while in operation, or having accessible moving parts, fitted with a switch to control the motor. The actuating member of the switch being easily visible and accessible		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Unless the appliance can operate continuously, automatically or remotely without giving rise to a hazard, appliances for remote operation being fitted with a switch. The actuating member of the switch being easily visible and accessible		N/A
22.41	No components, other than lamps, containing mercury		P
22.42	Protective impedance consisting of at least two separate components		N/A
	Values specified in 8.1.4 not exceeded if any one of the components are short-circuited or open-circuited		N/A
	Resistors checked by the test of 14.1 a) in IEC 60065		N/A
	Capacitors checked by the tests for class Y capacitors in IEC 60384-14		N/A
22.43	Appliances adjustable for different voltages, accidental changing of the setting of the voltage unlikely to occur		N/A
22.44	Appliances not having an enclosure that is shaped or decorated like a toy		P
22.45	When air is used as reinforced insulation, clearances not reduced below the values specified in 29.1.4 due to deformation as a result of an external force applied to the enclosure		P
22.46	For programmable protective electronic circuits used to ensure compliance with the standard, the software contains measures to control the fault/error conditions in table R.1		N/A
	Software that contains measures to control the fault/error conditions specified in table R.2 is to be specified in parts 2 for particular constructions or to address specific hazards		N/A
	These requirements are not applicable to software used for functional purpose or compliance with clause 11		N/A
22.47	Appliances connected to the water mains withstand the water pressure expected in normal use		N/A
	No leakage from any part, including any inlet water hose		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.48	Appliances connected to the water mains constructed to prevent backsiphonage of non-potable water		N/A
22.49	For remote operation, the duration of operation shall be set before the appliance can be started, unless		N/A
	the appliance switches off automatically or can operate continuously without hazard		N/A
22.50	Controls incorporated in the appliance take priority over controls actuated by remote operation		N/A
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/A
	There is a visual indication showing that the appliance is adjusted for remote operation		N/A
	Manual setting and visual indication not necessary on appliances that can operate as follows, without giving rise to a hazard:		N/A
	- operate continuously,		N/A
	- operate automatically, or		N/A
	- be operated remotely		N/A
22.52	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/A
22.101	Heaters other than heaters for mounting at high level, shall be guarded in order to prevent contact with heating elements (IEC 60335-2-30)		P
	Test probe 41 IEC 61032 applied with a force not exceeding 5N not touch the heating elements		P
	Fireguards shall have no openings which exceed		N/A
	- a major dimension of 126 mm and a corresponding minor dimension of 12 mm, or		N/A
	- a major dimension of 53 mm and a corresponding minor dimension of 20 mm		N/A
	These dimensions also apply to any gap between the fireguard and its immediate surround. However, any apertures having a minor dimension of less than 5 mm are ignored.		N/A
22.102	Fireguards shall have a total open area not less than 50% of the surface area of the fireguard (IEC 60335-2-30)		N/A
22.103	Fireguards not completely removable without use of a tool (IEC 60335-2-30)		N/A
22.104	Appliance for wall mounting so constructed That they can be securely fixed to a wall (IEC 60335-2-30)		P

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Clause	Requirement + Test	Result - Remark	Verdict
22.105	Accessible panels made of glass, ceramic or similar material in direct contact with heating elements shall withstand thermal shock (1 l water (15 ± 5)°C is directed onto the central part of the panel at a rate of 10 ml/s through a 5 mm diameter tube) The panel shall not be damaged (IEC 60335-2-30)		N/A
22.106	Portable appliances not have openings on the underside that would allow small items to penetrate and touch live parts (IEC 60335-2-30)		N/A
22.107	Visibly glowing radiant heaters, after fixing to a wall or ceiling direction of radiation cannot be changed without the aid of a tool (IEC 60335-2-30)		N/A
22.108	Visibly glowing radiant heaters other than heaters for mounting at high level, incorporates not thermostats, timers or similar means which switch on heating elements automatically, unless at least one heating element is already visibly glowing.(IEC 60335-2-30)		N/A
22.109	Disconnection of supply by a switch in the OFF position shall not rely on electronic components (IEC 60335-2-30)		P
22.110	Heaters intended to be mounted under church benches: metal surfaces accessible to the 75mm diameter test rod shall have a non-metallic coating with a thickness of at least 50 microns (IEC 60335-2-30)		N/A
23	INTERNAL WIRING		—
23.1	Wireways smooth and free from sharp edges		P
	Wires protected against contact with burrs, cooling fins etc.		P
	Wire holes in metal well rounded or provided with bushings		P
	Wiring effectively prevented from coming into contact with moving parts		P
23.2	Beads etc. on live wires cannot change their position, and are not resting on sharp edges or corners		N/A
	Beads inside flexible metal conduits contained within an insulating sleeve		N/A
23.3	Electrical connections and internal conductors movable relatively to each other not exposed to undue stress		N/A
	Flexible metallic tubes not causing damage to insulation of conductors		N/A
	Open-coil springs not used		N/A
	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	No damage after 10 000 flexings for conductors flexed during normal use or 100 flexings for conductors flexed during user maintenance		N/A
	Electric strength test, 1000 V between live parts and accessible metal parts		N/A
	Not more than 10% of the strands of any conductor broken, and		N/A
	not more than 30% for wiring supplying circuits that consume no more than 15W		N/A
23.4	Bare internal wiring sufficiently rigid and fixed		N/A
23.5	The insulation of internal wiring withstanding the electrical stress likely to occur in normal use		P
	Basic insulation electrically equivalent to the basic insulation of cords complying with IEC 60227 or IEC 60245, or		N/A
	No breakdown when a voltage of 2000 V is applied for 15 min between the conductor and metal foil wrapped around the insulation		P
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by clamping at both ends, or		N/A
	be such that it can only be removed by breaking or cutting		N/A
23.7	The colour combination green/yellow used only for earthing conductors		P
23.8	Aluminium wires not used for internal wiring		P
23.9	Stranded conductors not consolidated by soldering where they are subjected to contact pressure, unless		P
	the contact pressure is provided by spring terminals		N/A
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/A
24	COMPONENTS		—
24.1	Components comply with safety requirements in relevant IEC standards		P
	List of components	(see appended table)	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 24.1.6		P

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Clause	Requirement + Test	Result - Remark	Verdict

	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			P
	Lampholders and starterholders not being tested and found to comply with the relevant IEC standard, tested as a part of the appliance and additionally according to the gauging and interchangeability requirements of the relevant IEC standard			N/A
	No additional tests specified for nationally standardized plugs such as those detailed in IEC/TR 60083 or connectors complying with the standard sheets of IEC 60320-1 and IEC 60309			P
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			P
	tested according to annex F			N/A
24.1.2	Safety isolating transformers complying with IEC 61558-2-6, or			N/A
	tested according to annex G			N/A
24.1.3	Switches complying with IEC 61058-1, the number of cycles of operation being at least 10 000, or			P
	tested according to annex H			N/A
	If the switch only operates a motor staring relay complying with IEC 60730-2-10 with the number of cycles of a least 10 000 as specified, the complete switching system need not be tested			N/A
	Switches operating during the test of Cl. 19.112: 300 (IEC 60335-2-30)			N/A
24.1.4	Automatic controls complying with IEC 60730-1 with relevant part 2. The number of cycles of operation being:			P
	- thermostats	10 000		P
	- temperature limiters	1 000		N/A
	- self-resetting thermal cut-outs (IEC 60335-2-30)	10 000		N/A
	-non-self-resetting thermal cut-outs operating during 19.112 (IEC 60335-2-30)	300		N/A
	-for other non-self-resetting thermal cut-outs (IEC 60335-2-30)	1 000		N/A
	- voltage maintained non-self-resetting thermal cut-outs:	1 000		P
	- timers:	3 000		N/A
	- energy regulators:	10 000		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	thermostats of liquid-filled radiators which operate during Cl. 11 to limit the surface temperature rise to 85 K: (IEC 60335-2-30)	100.000		N/A
	The number of cycles for controls operating during clause 11 need not be declared, if the appliance meets the requirements of this standard when they are short-circuited			N/A
	Thermal motor protectors are tested in combination with their motor under the conditions specified in Annex D			N/A
	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/A
24.1.5	Appliance couplers complying with IEC 60320-1			N/A
	However, appliances classified higher than IPX0, the appliance couplers complying with IEC 60320-2-3			N/A
	Interconnection couplers complying with IEC 60320-2-2			N/A
24.1.6	Small lamp holders similar to E10 lampholders complying with IEC 60238, the requirements for E10 lampholders being applicable			N/A
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/A
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			P
24.1.9	Contactors and relays, other than motor starting relays, tested as part of the appliance			P
	They are also tested in accordance with Clause 17 of IEC 60730-1, the number of cycles of operations in 24.1.4 selected according to the contactor or relay function in the appliance :			P
24.2	Appliances not fitted with:			P
	- switches or automatic controls in flexible cords			P
	- devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance			P
	- thermal cut-outs that can be reset by soldering, unless			P
	the solder has a melding point of at least 230 ˚C			N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
24.4	Plugs and socket-outlets for extra-low voltage circuits and heating elements, not interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1 or with connectors and appliance inlets complying with the standard sheets of IEC 60320-1		N/A
24.5	Capacitors in auxiliary windings of motors marked with their rated voltage and capacitance and used accordingly		N/A
	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/A
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/A
	In addition, the motors are complying with the requirements of Annex I		N/A
24.7	Detachable hose-sets for connection of appliances to the water mains comply with IEC 61770		N/A
	They are supplied with the appliance		N/A
	Appliances intended to be permanently connected to the water mains not connected by a detachable hose-set		N/A
24.8	Motor running capacitors in appliances for which 30.2.3 is applicable and that are permanently connected in series with a motor winding, not causing a hazard in event of a failure		N/A
	One or more of the following conditions are to be met:		N/A
	- the capacitors are of class P2 according to IEC 60252-1		N/A
	- the capacitors are housed within a metallic or ceramic enclosure		N/A
	- the distance of separation of the outer surface to adjacent non-metallic parts exceeds 50 mm		N/A
	- adjacent non-metallic parts within 50 mm withstand the needle-flame test of Annex E		N/A
	- adjacent non-metallic parts within 50 mm classified as at least V-1 according to IEC 60695-11-10		N/A
24.101	Oil-filled radiators, devices incorporated to comply with Cl. 19.114 shall be non-self-resetting (IEC 60335-2-30)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

27	PROVISION FOR EARTHING		—
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		N/A
	Class 0, II and III appliance have no provision for earthing		N/A
	Safety extra-low voltage circuits not earthed, unless protective extra-low voltage circuits		N/A
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		N/A
	do not provide earthing continuity between different parts of the appliance		N/A
	Conductors cannot be loosened without the aid of a tool		N/A
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/A
	For appliances with supply cord, current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage	The earthing conductor is longer than the L/N conductor	P
27.4	No risk of corrosion resulting from contact between parts of the earthing terminal and the copper of the earthing conductor or other metal		P
	Parts providing earthing continuity, other than parts of a metal frame or enclosure, have adequate resistance to corrosion		P
	If of steel, these parts provided with an electroplated coating with a thickness at least 5 µm		N/A
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		P
	In the body of the earthing terminal is a part of a frame or enclosure of aluminium or aluminium alloys, precautions taken to avoid risk of corrosion		N/A
27.5	Low resistance of connection between earthing terminal and earthed metal parts		P

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Clause	Requirement + Test	Result - Remark	Verdict
	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/A
	Resistance not exceeding 0,1 Ω at the specified low-resistance test	Measured max. earthing resistance: 0.04Ω	P
27.6	The printed conductors of printed circuit boards shall not be used to provide earthing continuity in hand-held appliances.		N/A
	They may be used to provide earthing continuity in other appliances if at least two tracks are used with independent soldering points and the appliance complies with 27.5 for each circuit		N/A
29	CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION		—
	Clearances, creepage distances and solid insulation withstand electrical stress		P
	For coatings used on printed circuits boards to protect the microenvironment (Type 1) or to provide basic insulation (Type 2), annex J applies .....:		N/A
	The microenvironment is pollution degree 1 under type 1 protection		N/A
	For type 2 protection, the spacing between the conductors before the protection is applied is not less than the values specified in Table 1 of IEC 60664-3		N/A
	These values apply to functional, basic, supplementary and reinforced insulation ..... :		N/A
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)	P
	for basic insulation and functional insulation they comply with the impulse voltage test of clause 14		N/A
	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		P
	Impulse voltage test not applicable:		P
	- when the microenvironment is pollution degree 3		P
	- for basic insulation of class 0 and class 01 appliances		N/A
	Appliances are in overvoltage category II		P
	A force of 2 N is applied to bare conductors, other than heating elements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	A force of 30 N is applied to accessible surfaces		P
29.1.1	Clearances of basic insulation withstand the overvoltages, taking into account the rated impulse voltage		P
	The values of table 16 or the impulse voltage test of clause 14 are applicable ..... :	(see appended table)	P
	Clearance at the terminals of tubular sheathed heating elements may be reduced to 1,0 mm if the microenvironment is pollution degree 1		N/A
	Lacquered conductors of windings considered to be bare conductors		P
29.1.2	Clearances of supplementary insulation not less than those specified for basic insulation in table 16		N/A
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
	For double insulation, with no intermediate conductive part between basic and supplementary insulation, clearances are measured between live parts and the accessible surface, and the insulation system is treated as reinforced insulation		P
29.1.4	Clearances for functional insulation are the largest values determined from:		P
	- table 16 based on the rated impulse voltage..... :		P
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		P
	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz		N/A
	If values of table 16 are largest, the impulse voltage test of clause 14 may be applied instead, unless		N/A
	the microenvironment is pollution degree 3, or		P
	the distances can be affected by wear, distortion, movement of the parts or during assembly		P
	However, clearances are not specified if the appliance complies with clause 19 with the functional insulation short-circuited		P
	Lacquered conductors of windings considered to be bare conductors		P
	However, clearances at crossover points are not measured		P
	Clearance between surfaces of PTC heating elements may be reduced to 1mm		N/A
29.1.5	Appliances having higher working voltages than rated voltage, clearances for basic insulation are the largest values determined from:		N/A
	- table 16 based on the rated impulse voltage..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		N/A
	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz		N/A
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1 or Clause 4 of IEC 60664-4, the clearances of supplementary insulation are not less than those specified for basic insulation		N/A
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1, the clearances of reinforced insulation dimensioned as specified in Table F.7a are to withstand 160% of the withstand voltage required for basic insulation		N/A
	If clearances for basic insulation are selected from Clause 4 of IEC 60664-4, the clearances of reinforced insulation are twice the value required for basic insulation		N/A
	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/A
	Circuits supplied with a voltage lower than rated voltage, clearances of functional insulation are based on the working voltage used as the rated voltage in table 15		N/A
29.2	Creepage distances not less than those appropriate for the working voltage, taking into account the material group and the pollution degree	(see appended table)	P
	Pollution degree 2 applies, unless		N/A
	-precautions taken to protect the insulation; pollution degree 1		N/A
	-insulation subjected to conductive pollution; pollution degree 3		P
	A force of 2 N is applied to bare conductors, other than heating elements		N/A
	A force of 30 N is applied to accessible surfaces		P
	In a double insulation system, the working voltage for both the basic and supplementary insulation is taken as the working voltage across the complete double insulation system		P
	For fan heaters, the microenvironment is pollution degree 3 unless the insulation is enclosed or located so that it is unlikely to be exposed to pollution during normal use of the appliance. (IEC 60335-2-30)		P
29.2.1	Creepage distances of basic insulation not less than specified in table 17	(see appended table)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 17 ..... :		N/A
	Except for pollution degree 1, corresponding creepage distance not less than the minimum specified for the clearance in table 16, if the clearance has been checked according to the test of clause 14..... :		N/A
29.2.2	Creepage distances of supplementary insulation at least as specified for basic insulation in table 17 or		N/A
	Table 2 of IEC 60664-4, as applicable..... :		N/A
29.2.3	Creepage distances of reinforced insulation at least double as specified for basic insulation in table 17 or		P
	Table 2 of IEC 60664-4, as applicable..... :		N/A
29.2.4	Creepage distances of functional insulation not less than specified in table 18	(see appended table)	P
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 18 ..... :		N/A
	Creepage distances may be reduced if the appliance complies with clause 19 with the functional insulation short-circuited		P
29.3	Supplementary and reinforced insulation having adequate thickness, or a sufficient number of layers, to withstand the electrical stresses		N/A
	Compliance checked by:		N/A
	- measurement, in accordance with 29.3.1, or		N/A
	- an electric strength test in accordance with 29.3.2, or		N/A
	- an assessment of the thermal quality of the material combined with an electric strength test, in accordance with 29.3.3 and		N/A
	for accessible parts of reinforced insulation consisting of a single layer, by measurement in accordance with 29.3.4, or		N/A
	- as specified in subclause 6.3 of IEC 60664-4 for insulation that is subjected to any periodic voltage having a frequency exceeding 30 kHz		N/A
29.3.1	Supplementary insulation having a thickness of at least 1 mm		N/A
	Reinforced insulation having a thickness of at least 2 mm		N/A
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Supplementary insulation consisting of at least 2 layers		N/A
	Reinforced insulation consisting of at least 3 layers		N/A
29.3.3	The insulation is subjected to the dry heat test Bb of IEC 60068-2-2, followed by		N/A
	the electric strength test of 16.3		N/A
	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/A
29.3.4	Thickness of accessible parts of reinforced insulation consisting of a single layer not less than specified in table 19 ..... :		N/A

10.1	TABLE: Power input deviation				P
Input deviation of/at:	P rated (W)	P measured (W)	dP	Required dP	Remark
EF-10B AC220V 50Hz	1750	1723	-1.5%	+5% or -10%	P
EF-10B AC240V 50Hz	2000	2046	+2.3%	+5% or -10%	P

10.2	TABLE: Current deviation				N/A
Current deviation of/at:	I rated (A)	I measured (A)	dI	Required dI	Remark

11.8	TABLE: Heating test, thermocouples (EF-10B) (test as fixed appliance)		P
	Test voltage (V)..... :	255.7	—
	Ambient (°C) ..... :	24.4	—

Thermocouple locations	dT (K)	Max. dT (K)
Power cord	16.3	50
Test wall	2.9	60
Air-outlet grille	162.0	175
Metal enclosure 25mm from air-outlet grille	41.3	85
Tempered glass	4.4	100
Surface of button	17.4	60
Surface of power switch	2.4	60
Ambient of power switch	10.1	T-25=75
Winding of fan motor	62.2	80
Winding of decorative motor	28.8	85
Internal wire of fan motor	44.0	T-25=155
Internal wire of decorative motor	44.0	T-25=155
Internal wire of heating element	34.5	T-25=155
Internal wire of others	20.3	50
PCB of Lamp	8.2	120
PCB of control	25.3	120
Winding of transformer in PCB of control	18.2	80
Winding of inductance in PCB of control	13.0	80
Ambient of X2 capacitor in PCB of control	12.7	T-25=75
Ambient of relay in PCB of control	27.8	T-25=60
Ambient of VDR in PCB of control	13.8	T-25=60
Thermal cut-out	60.1°C	Tf=85
Heating element holder	68.1	For Cl.30.1

11.8	TABLE: Heating test, thermocouples (EF-10B) (test as portable appliance)		P
	Test voltage (V)..... :	255.7	—
	Ambient (°C) ..... :	24.4	—

Thermocouple locations	dT (K)	Max. dT (K)
Power cord	15.8	50
Test corner	2.8	65
Air-outlet grille	161.8	175
Metal enclosure 25mm from air-outlet grille	40.3	85
Tempered glass	3.3	100
Surface of button	16.5	60
Surface of power switch	1.5	60
Ambient of power switch	9.0	T-25=75
Winding of fan motor	61.1	80
Winding of decorative motor	27.7	85
Internal wire of fan motor	43.1	T-25=155
Internal wire of decorative motor	13.2	T-25=155
Internal wire of heating element	33.6	T-25=155
Internal wire of others	19.4	50
PCB of Lamp	7.4	120
PCB of control	24.3	120
Winding of transformer in PCB of control	12.0	80
Winding of inductance in PCB of control	17.2	80
Ambient of X2 capacitor in PCB of control	11.8	T-25=75
Ambient of relay in PCB of control	27.8	T-25=60
Ambient of VDR in PCB of control	13.7	T-25=60
Thermal cut-out	59.6°C	Tf=85
Heating element holder	68.5	For Cl.30.1

11.8	TABLE: Heating test, resistance method (EF-10B)					P
	Test voltage (V)..... :		255.7			—
	Ambient, t_1 (°C) ..... :		23.8			—
	Ambient, t_2 (°C) ..... :		24.4			—
Temperature rise of winding	R_1 (Ω)	R_2 (Ω)	dT (K)	Max. dT (K)	Insulation class	
Winding of decorative motor	21.48K	21.48K	39.0	90	120	
Winding of fan otor	279.8	377.0	89.1	95	130	

13.2	TABLE: Leakage current		P
	Heating appliances: 1.15 x rated input..... :	2300W;	—
	Motor-operated and combined appliances: 1.06 x rated voltage ..... :	-	—
Leakage current between	I (mA)	Max. allowed I (mA)	
L/N and plastic enclosure, switch etc.	0.007	0.35	

L/N and metal enclosure etc	0.07	0.75

13.3	TABLE: Electric strength	P
Test voltage applied between:	Voltage (V)	Breakdown (Yes/No)
L/N and plastic enclosure, switch etc.	3000	No
L/N and metal enclosure etc.	1000	No

19.101	TABLE: Abnormal operation (EF-10B) (portable)	P
Thermocouple locations	dT (K)	Max. dT (K)
Power cord	17.6	150
Test cord	4.6	150
Heating element holder	46.3	For Cl.30.1

19.108	TABLE: Abnormal operation (EF-10B)	P
Thermocouple locations	dT (K)	Max. dT (K)
Power cord	6.6	150
Test corner	1.1	150
Winding of fan motor	42.8	150
Heating element holder	61.4	For Cl.30.1

19.109	TABLE: Abnormal operation (EF-10B)	P
Thermocouple locations	dT (K)	Max. dT (K)
Power cord	16.0	150
Test corner	104.3	150
Winding of fan motor	59.3	150
Heating element holder	42.3	For Cl.30.1

24.1	TABLE: Components (refer to CDF reference ZC10-LR-50080898 011)				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity
Remark: 1. For the mark of conformity with *, it means the components also tested with appliance accordingly. 2. BS plug must fitted with approved fuse-links having a rating appropriate to the cord fitted in accordance with table 2 of BS 1363-1."					

29.1	TABLE: Clearances						P
	Overvoltage category ... :		II				—
		Type of insulation:					
Rated impulse voltage (V):	Min. cl (mm)	Basic	Functional	Supplementary	Reinforced	Verdict / Remark	
330	0,5*					N/A	
500	0,5*					N/A	

800	0,5*					N/A
1 500	0,5*/**					N/A
2 500	1,5**	Note 1 (>2,0mm)	Note 2 (>2,0mm)		Note 3 (>2,0mm)	P
4 000	3,0**					N/A
6 000	5,5**					N/A
8 000	8,0**					N/A
10 000	11,0**					N/A

*) The value is increased to 0,8mm for pollution degree 3
*) If the construction is affected by wear, distortion, movement of the parts or during assembly, the value is increased by 0,5 mm

Note 1:
Winding of fan motor – Earthed metal: Cl. =5.6mm > 2.0mm

Live parts of PCB – Earthed metal support: Cl. =4.3mm > 2.0mm

Live parts of heating element – Earthed metal air outlet: Cl. = 4.5mm > 2.0mm

Live parts of switch – earthed metal: Cl. =13.9mm > 2.0mm

Note 2:
L-N between heating element: Cl. =17.3mm > 2.0mm

L-N of PCB: Cl. =9.6mm > 2.0mm

Note 3:

Live parts of PCB – surface of control panel: Cl.=9.6mm > 3.2mm

29.2	TABLE: Creepage distances, basic, supplementary and reinforced insulation										P
Working voltage (V)	Creepage distance (mm) Pollution degree										
	1	2			3			Type of insulation			
		Material group			Material group						
		I	II	IIIa/IIIb	I	II	IIIa/IIIb	B*)	S*)	R*)	Verdict
≤50	0,2	0,6	0,9	1,2	1,5	1,7	1,9		—	—	N/A
≤50	0,2	0,6	0,9	1,2	1,5	1,7	1,9	—		—	N/A
≤50	0,4	1,2	1,8	2,4	3,0	3,4	3,8	—	—		N/A
>50 and ≤125	0,3	0,8	1,1	1,5	1,9	2,1	2,4		—	—	N/A
>50 and ≤125	0,3	0,8	1,1	1,5	1,9	2,1	2,4	—		—	N/A
>50 and ≤125	0,6	1,6	2,2	3,0	3,8	4,2	4,8	—	—		N/A
>125 and ≤250	0,6	1,3	1,8	2,5	3,2	3,6	4,0	Note 1	—	—	P
>125 and ≤250	0,6	1,3	1,8	2,5	3,2	3,6	4,0	—		—	N/A
>125 and ≤250	1,2	2,6	3,6	5,0	6,4	7,2	8,0	—	—	Note 2	N/A
>250 and ≤400	1,0	2,0	2,8	4,0	5,0	5,6	6,3		—	—	N/A
>250 and ≤400	1,0	2,0	2,8	4,0	5,0	5,6	6,3	—		—	N/A
>250 and ≤400	2,0	4,0	5,6	8,0	10,0	11,2	12,6	—	—		N/A
>400 and ≤500	1,3	2,5	3,6	5,0	6,3	7,1	8,0		—	—	N/A
>400 and ≤500	1,3	2,5	3,6	5,0	6,3	7,1	8,0	—		—	N/A
>400 and ≤500	2,6	5,0	7,2	10,0	12,6	14,2	16,0	—	—		N/A
>500 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0		—	—	N/A
>500 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	—		—	N/A
>500 and ≤800	3,6	6,4	9,0	12,6	16,0	18,0	20,0	—	—		N/A
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5		—	—	N/A
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	—		—	N/A
>800 and ≤1000	4,8	8,0	11,2	16,0	20,0	22,0	25,0	—	—		N/A
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0		—	—	N/A
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	—		—	N/A
>1000 and ≤1250	6,4	10,0	14,2	20,0	25,0	28,0	32,0	—	—		N/A
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0		—	—	N/A
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	—		—	N/A
>1250 and ≤1600	8,4	12,6	18,0	25,0	32,0	36,0	40,0	—	—		N/A
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0		—	—	N/A
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	—		—	N/A
>1600 and ≤2000	11,2	16,0	22,0	32,0	40,0	44,0	50,0	—	—		N/A
>2000 and ≤2500	7,5	10,0	14,0	20,0	25, 0	28,0	32,0		—	—	N/A

>2000 and ≤2500	7,5	10,0	14,0	20,0	25, 0	28,0	32,0	—		—	N/A
>2000 and ≤2500	15,0	20,0	28,0	40,0	50,0	56,0	64,0	—	—		N/A
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0		—	—	N/A
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	—		—	N/A
>2500 and ≤3200	20,0	25,0	36,0	50,0	64,0	72,0	80,0	—	—		N/A
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0		—	—	N/A
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	—		—	N/A
>3200 and ≤4000	25,0	32,0	44,0	64,0	80,0	90,0	100,0	—	—		N/A
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0		—	—	N/A
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	—		—	N/A
>4000 and ≤5000	32,0	40,0	56,0	80,0	100,0	112,0	126,0	—	—		N/A
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0		—	—	N/A
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	—		—	N/A
>5000 and ≤6300	40,0	50,0	72,0	100,0	126,0	142,0	160,0	—	—		N/A
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0		—	—	N/A
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	—		—	N/A
>6300 and ≤8000	50,0	64,0	90,0	126,0	160,0	180,0	200,0	—	—		N/A
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0		—	—	N/A
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	—			N/A
>8000 and ≤10000	64,0	80,0	112,0	160,0	200,0	220,0	250,0	—	—		N/A
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0		—	—	N/A
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	—		—	N/A
>10000 and ≤12500	80,0	100,0	142,0	200,0	250,0	280,0	320,0	—	—		N/A

*), B=Basic, S=Supplementary and R=Reinforced

Note 1:
Winding of fan motor – Earthed metal: Cr. =5.6mm > 4.0mm

Live parts of PCB – Earthed metal support: Cr. =4.3mm > 4.0mm

Live parts of heating element – Earthed metal air outlet: Cr. = 13.6mm > 4.0mm

Live parts of switch – earthed metal: Cr.=13.9mm >4.0mm

Note 2:

Live parts of PCB- surface of control panel: Cr.=9.6mm > 8mm

29.2	TABLE: Creepage distances, functional insulation							P
Working voltage (V)	Creepage distance (mm) Pollution degree							
	1	2			3			
		Material group			Material group			
		I	II	IIIa/IIIb	I	II	IIIa/IIIb	Verdict / Remark
≤50	0,2	0,6	0,8	1,1	1,4	1,6	1,8	N/A
>50 and ≤125	0,3	0,7	1,0	1,4	1,8	2,0	2,2	N/A
>125 and ≤250	0,4	1,0	1,4	2,0	2,5	2,8	3,2 Note	P
>250 and ≤400	0,8	1,6	2,2	3,2	4,0	4,5	5,0	N/A
>400 and ≤500	1,0	2,0	2,8	4,0	5,0	5,6	6,3	N/A
>500 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	N/A
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	N/A
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	N/A
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	N/A
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	N/A
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	N/A
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	N/A
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	N/A
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	N/A
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	N/A
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	N/A
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	N/A
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	N/A

Note:

L-N between heating element: Cl. =17.3mm > 3.2mm

L-N of PCB: Cl. =9.6mm > 3.2mm

ATTACHMENT TO TEST REPORT IEC 60335-2-30 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (Household and similar electrical appliances – Safety – **Part 2: Particular requirements for room heaters)**	
Differences according to :	EN 60335-2-30:2009 + A11: 2012 used in conjunction with EN 60335-1:2012+A11 EN 62233:2008
Deviation Report I (Page 2 to 12)	Deviation Report of EN 60335-2-30:2009 + A11: 2012 used in conjunction with EN 60335-1:2012 EN 62233:2008
Deviation Report II (Page 13 to 13)	Deviation Report of EN 60335-1:2012+A11 from EN 60335-1:2012
Attachment Form No. :	EU_GD_IEC60335_2_30J
Attachment Originator :	LCIE
Master Attachment :	2013-09

6.1	Delete “class 0” and “class 01”		P
7.1	Single-phase appliances to be connected to the supply mains: 230 V covered		P
	Multi-phase appliances to be connected to the supply mains: 400 V covered		N/A
	The instructions shall include the substance of the following: (EN 60335-2-30)		P
	Children of less than 3 years should be kept away unless continuously supervised.		P
	Children aged from 3 years and less than 8 years shall only switch on/off the appliance provided that it has been placed or installed in its intended normal operating position and they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children aged from 3 years and less than 8 years shall not plug in, regulate and clean the appliance or perform user maintenance.		P
	CAUTION — Some parts of this product can become very hot and cause burns. Particular attention has to be given where children and vulnerable people are present.		P
7.10	Devices used to start/stop operational functions of the appliance distinguished from other manual devices by means of shape, size, surface texture, position, etc.		P
	An indication that the device has been operated is given by:		P
	• a tactile feedback, or		N/A
	• an audible and visual feedback		P
7.12	The instructions include the substance of the following:		P
	- this appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved		P
	- children shall not play with the appliance		P
	- cleaning and user maintenance shall not be made by children without supervision		P
7.12.Z1	The specific instructions related to the safe operation of this appliance is collated together in the front section of the user instructions		P
	The height of the characters, measured on the capital letters, is at least 3 mm		P
	These instructions are also available in an alternative format, e.g. on a website		P
8.1.1	Also test probe 18 of EN 61032 is applied		P
	The appliance being in every possible position during the test		P
	The force on the probe in the straight position is increased to 10 N when probe 18 is used		P

	When using test probe 18 the appliance is fully assembled as in normal use without any parts removed, and		P
	parts intended to be removed for user maintenance are also not removed		P
8.2	Compliance is checked by applying the test probes of EN 61032		P
	For built-in appliances and fixed appliances, the test probe B and probe 18 of EN 61032 are applied only after installation		N/A
11.8	Footnotes to “External enclosure of motor-operated appliances” to be taken into account		N/A
	The temperature rise of surfaces of heaters shall not exceed the values shown in Table 101. (EN 60335-2-30)		P
11.Z101	For the measurement of temperature rises the instructions from the manufacturer on where the appliance has to be situated during normal operations have to be followed. (EN 60335-2-30)		P
20.2	Parts that are intended to be removed only for user maintenance are not removed. (EN 60335-2-30)		P
	When using the test probe similar to test probe B with a circular stop face, the accessories and detachable covers are removed		P
	Test probe 18 applied with a force of 2,5N on the appliance fully assembled		P
22.Z101	Stationary appliances part or all of the body of which are positioned at a height below 850 mm from the floor and portable appliances that can be used on the floor shall not have accessible openings with a minor dimension exceeding 5,5mm. (EN 60335-2-30)		P
22.Z102	For appliances fitted with a supply cord with a plug, the free length of the supply cord measured from the inlet point in the appliance to the inlet point in the plug including the cord guard, shall be not less than 1 m and no more than 1,9 m. (EN 60335-2-30)		P
24.1	Components comply with the safety requirements specified in the relevant standards as far as they reasonably apply		P
	The requirements of Clause 29 of this standard apply between live parts of components and accessible parts of the appliance.		P
	The requirements of 30.2 of this standard apply to parts of non-metallic material in components including parts of non-metallic material supporting current-carrying connections inside components		P
	Components that have not been previously tested or do not comply with the standard for the relevant component are tested according to the requirements of 30.2		P
	Components that have been previously tested and shown to comply with the resistance to fire requirements in the standard for the relevant component need not be retested provided that:		N/A
	- the severity specified in the component standard is not less than the severity specified in 30.2, and		N/A

	- the test report for the component states whether it complied with the standard for the relevant component with or without flame, flames not exceeding 2 s during the test are ignored		N/A
	Unless components have been previously tested and found to comply with the relevant standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9		N/A
	For components mentioned in 24.1.1 to 24.1.9, no additional tests specified in the relevant standard for the component are necessary other than those specified in 24.1.1 to 24.1.9		N/A
	Components that have not been separately tested and found to comply with the relevant standard, and		P
	components that are not marked or not used in accordance with their marking,		P
	are tested in accordance with the conditions occurring in the appliance, the number of samples being that required by the relevant standard		P
	Lamp holders and starter holders that have not been previously tested and found to comply with the relevant standard are tested as a part of the appliance and additionally comply with the gauging and interchangeability requirements of the relevant standard under the conditions occurring in the appliance		N/A
	Where the relevant standard specifies these gauging and interchangeability requirements at elevated temperatures, the temperatures measured during the tests of Clause 11 are used		N/A
	Plugs and socket-outlets and other connecting devices of interconnection cords are not interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1, or		N/A
	with connectors and appliance inlets complying with the standard sheets of IEC 60320-1,		N/A
	if direct supply to these parts from the supply mains gives rise to a hazard		N/A
29.3.Z1	Appliance constructed so that if there is a possibility of damaging the insulation during installation, the insulation withstands the scratch and penetration test of 21.2		N/A

End of report

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Measurement Equipment List

Testing Start Date	15.08.2019
Testing end date	20.08.2019
Project Manager	Ray Liu
Test Report Number	50080898 011
Order Item Number	0180107136A00060
Customer	CIXI XINXIULI ELECTRICAL
Product Name	Heater
Comment	

Old ID	Equip.	Description	Model	Manufacturer	Inte. (mon)	Due Date DD.MM.YYYY
1.437D	1809903	Power meter	WT310E-C1-H	YOKOGAWA	12	29.12.2019
1.243	1809691	Temp. & Humidity recorder	175H1	Testo	12	15.01.2020
1.381D	1809788	Data acquisition unit	LR8401-21	HIOKI	12	02.01.2020
1.013A	1817245	Leakage current tester	7630	EXTECH	12	01.02.2020
1.006B	1809438	Withstanding voltage tester	TOS5051A	KIKUSUI	12	08.01.2020
1.066B	1809541	Dial slant ruler	LS160II	Laisai	12	02.07.2020
1.317	1809741	Power cord pulling and torsion tester	DMS703	DAMS	12	02.04.2020
1.615	1809949	Electronic Scales	TCS-K	Huade	12	24.06.2020

* No entry for devices that are not subject to regular calibration or require initial verification/calibration only.

Signature: Ray Liu