





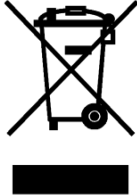
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|--|---|---|-----------------------------|--|---|
| Prüfbericht-Nr.: <i>Test Report No.:</i> | 50091469 015 | Auftrags-Nr.: <i>Order No.:</i> | 180115526 | Seite 1 von 38 <i>Page 1 of 38</i> | |
| Kunden-Referenz-Nr.: <i>Client Reference No.:</i> | N/A | Auftragsdatum: <i>Order date:</i> | 28.10.2019 | | |
| Auftraggeber: <i>Client:</i> | NINGBO BAKELON ELECTRICAL APPLIANCE CO., LTD. | | | | |
| Prüfgegenstand: <i>Test item:</i> | Contact grill | | | | |
| Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i> | ZM-704, ZM-705, ZM-706B, ZM-704J, ZM-705J, ZM-706BJ | | | | |
| Auftrags-Inhalt: <i>Order content:</i> | Type Test | | | | |
| Prüfgrundlage: <i>Test specification:</i> | EN 60335-1:2012+A11 EN 60335-2-9:2003+A1+A2+A12+A13 EN 62233:2008 | | | | |
| Wareneingangsdatum: <i>Date of receipt:</i> | 30.10.2019 |  | | | |
| Prüfmuster-Nr.: <i>Test sample No.:</i> | A00101614 | | | | |
| Prüfzeitraum: <i>Testing period:</i> | 04.11.2019 – 30.12.2019 | | | | |
| Ort der Prüfung: <i>Place of testing:</i> | TÜV Rheinland /CCIC (Ningbo) Co., Ltd. | | | | |
| Prüflaboratorium: <i>Testing laboratory:</i> | TÜV Rheinland /CCIC (Ningbo) Co., Ltd. | | | | |
| Prüfergebnis*: <i>Test result*:</i> | Pass | | | | |
| geprüft von / tested by. | | kontrolliert von / reviewed by. | | | |
| 10.01.2020 | Lynn Park/PE | 10.01.2020 | Liw ei Lang/TC | | |
| Datum <i>Date</i> | Name / Stellung <i>Name / Position</i> | Unterschrift <i>Signature</i> | Datum <i>Date</i> | Name / Stellung <i>Name / Position</i> | Unterschrift <i>Signature</i> |
| Sonstiges / Other: | | Add new models. | | | |
| Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i> | | Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i> | | | |
| <p>* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet</p> <p>Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested</p> | | | | | |
| <p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i></p> | | | | | |

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| TEST REPORT IEC 60335-2-9 Safety of household and similar electrical appliances Part 2: Particular requirements for grills, toasters and similar cooking appliances | |
| Report Number.....: | 50091469 015 |
| Date of issue.....: | See cover page |
| Total number of pages.....: | See cover page |
| Name of Testing Laboratory preparing the Report.....: | TÜV Rheinland /CCIC (Ningbo) Co., Ltd. 3F, Building C13, R&D Park, No.32 Lane 299 Guanghua Road, National Hi-Tech Zone, Ningbo 315048 China |
| Applicant's name | NINGBO BAKELON ELECTRICAL APPLIANCE CO., LTD. |
| Address | NO. 88 XIANTAN ROAD, LANGXIA VILLAGE, LANGXIA STREET YUYAO CITY, ZHEJIANG 315480 P. R. China |
| Test specification: | |
| Standard | IEC 60335-2-9:2002 (Fifth edition) + A1:2004 + A2:2006 in conjunction with IEC 60335-1:2010 (Fifth Edition) |
| Test procedure | GS mark and CE LVD |
| Non-standard test method | N/A |
| Test Report Form No.: | IEC60335_2_9K |
| Test Report Form(s) Originator ...: | LCIE |
| Master TRF | Dated 2014-08 |
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| General disclaimer: | |
| The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report. | |

| | | |
|---|---|---|
| Test item description | Contact grill | |
| Trade Mark | N/A | |
| Manufacturer | Same as applicant | |
| Model/Type reference..... | ZM-704, ZM-705, ZM-706B, ZM-704J, ZM-705J, ZM-706BJ | |
| Ratings..... | AC 220-240V; 50/60Hz; 750W; Class I | |
| Responsible Testing Laboratory (as applicable), testing procedure and testing location(s): | | |
| <input checked="" type="checkbox"/> | Testing Laboratory: | TÜV 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 |
| <input type="checkbox"/> | Associated CB Testing Laboratory: | N/A |
| | Testing location/ address..... | |
| | Tested by (name, function, signature)....: | See cover page |
| | Approved by (name, function, signature): | See cover page |
| <input type="checkbox"/> | Testing procedure: TMP/CTF Stage 1: | N/A |
| | Testing location/ address..... | |
| | Tested by (name, function, signature)....: | |
| | Approved by (name, function, signature): | |
| <input type="checkbox"/> | Testing procedure: WMT/CTF Stage 2: | N/A |
| | Testing location/ address..... | |
| | Tested by (name + signature) | |
| | Witnessed by (name, function, signature): | |
| | Approved by (name, function, signature): | |
| <input type="checkbox"/> | Testing procedure: SMT/CTF Stage 3 or 4: | N/A |
| | Testing location/ address..... | |
| | Tested by (name, function, signature)....: | |
| | Witnessed by (name, function, signature): | |
| | Approved by (name, function, signature): | |
| | Supervised by (name, function, signature): | |


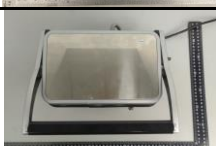


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| <p>List of Attachments (including a total number of pages in each attachment):</p> <p>See cover page</p> | |
| <p>Summary of testing:</p> <p>ZM-704, ZM-705, ZM-706B were subjected to tests of clause 10, 11.Z102, 20-29 and Cl.30.1. EK1AG2 rev.10 was taken into consideration.</p> <p>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).</p> | |
| <p>Tests performed (name of test and test clause):</p> <p>All tests above.</p> | <p>Testing location:</p> <p>TÜV Rheinland /CCIC (Ningbo) Co., Ltd. 3F, Building C13, R&D Park, No.32 Lane 299 Guanghua Road, National Hi-Tech Zone, Ningbo 315048 China</p> |
| <p>Summary of compliance with National Differences</p> <p>List of countries addressed:</p> <p>DE(DE=Germany) and EUROPEAN GROUP DIFFERENCES</p> <p><input checked="" type="checkbox"/> The product fulfils the requirements of <u>EN 60335-1:2012+A11; EN 60335-2-9:2003+A1+A2+A12+A13; EN 62233:2008</u></p> | |

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| <p>Copy of marking plate</p> <p>The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBS that own these marks.</p> <div data-bbox="193 1429 1115 1823" style="border: 1px solid black; padding: 5px;"> <p>ZM-704 AC 220-240V 50/60Hz 750W NINGBO BAKELON ELECTRICAL APPLIANCE CO., LTD. NO. 88 XIANTAN ROAD, LANGXIA VILLAGE, LANGXIA STREET YUYAO CITY, ZHEJIANG 315480 P. R. China</p> <div style="display: flex; justify-content: space-around; align-items: center;">     </div> <p style="font-size: small; margin-top: 5px;">www.tuv.com ID 1419052131</p> </div> <p>Remark: Marking plates for other models were same as above one except for model designation.</p> <p>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.</p> |
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| Test item particulars: | |
| Classification of installation and use: Portable appliance | |
| Supply Connection: Type Y attachment (non-detachable cord with plug) | |
| Possible test case verdicts: | |
| - test case does not apply to the test object : N/A | |
| - test object does meet the requirement : P (Pass) | |
| - test object does not meet the requirement ... : F (Fail) | |
| Testing: | |
| Date of receipt of test item: See cover page | |
| Date (s) of performance of tests: See cover page | |
| General remarks: | |
| "(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. | |
| Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator. | |
| Manufacturer's Declaration per sub-clause 4.2.5 of IEC60335-1: | |
| The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided: | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable |
| When differences exist; they shall be identified in the General product information section. | |
| Name and address of factory (ies): Same as manufacturer | |

General product information:

Contact grill is intended for household and indoor use only. All models are fitted with a thermostat and thermal link. Difference between all models refer to below table:

| Model name | Appearance | Thermostat | Metal cover | Open position |
|------------|---|------------|-------------|---------------|
| ZM-708 |  | fixed | No | One |
| ZM-708B |  | Adjustable | Yes | One |
| ZM-709B |  | Adjustable | Yes | Two |
| ZM-800B |  | Adjustable | Yes | Two |
| ZM-801B |  | Adjustable | Yes | Two |
| ZM-902B |  | Adjustable | Yes | Two |

Amendment 1:


Co-license issued

Amendment 2:

Construction of ZM-902B was changed, details see photo documentation.

Amendment 3:

1. Add new model ZM-800.
2. ZM-800 was same as ZM-800B except for appearance.

| Model name | Appearance | Thermostat | Metal cover | Open position |
|------------|---|------------|-------------|---------------|
| ZM-800 |  | Adjustable | Yes | Two |

Amendment 4:

1. Add alternative components listed in table 24.1
2. Remove the insulation cotton in lower base of ZM-902B
3. remove the external sleeve for terminal of heating element of ZM-902B, this construction return to

original in 50091469 001
connection manner

Amendment 5:

1. Add alternative thermostat listed in table 24.1
 2. Changed shape of working surface.
 3. Add insulation cotton in upper appliance part.
- Details see documentation.

Amendment 6:

Add alternative earthing for top cover, details see photo documentation.

Amendment 7:

Co-license issued

Amendment 8:

1. Add new models: ZM-801C, ZM-802B;
ZM-801C was identical with ZM-801B except the rocker.
ZM-802B was identical with ZM-801C except the enclosure.
2. Add alternative components listed in table 24.1 for all models.

Amendment 9:

Co-license issued.

Amendment 10:

Add alternative components for all models.
More details see Cl.24.1 bold part.

Amendment 11:

Change the way of indicator lightening for ZM-709B.
When it works, the indicator of "Power" is light. Otherwise, the indicators of "Power" and "Ready" are both light.
Add heat insulation cotton in the top enclosure.
More details see photo documentation.

Amendment 12:

1. Add alternative components (power cord, power plug and internal wire) for all models.
More details see Cl.24.1 bold part.
 2. Add tube on internal wire for ZM-709B.
More details see photo documentation.
- After evaluation, no test needed.

Amendment 13:

Change internal wire connection of indicator for ZM-709B. After evaluation, no test needed.
More details see photo documentation.

Amendment 14:

Add new models: ZM-704, ZM-705, ZM-706B, ZM-704J, ZM-705J, ZM-706BJ.
ZM-704J has same construction as ZM-704 except the oil tray.
ZM-705J has same construction as ZM-705 except the oil tray.
ZM-706BJ has same construction as ZM-706B except the oil tray.
ZM-704, ZM-705, ZM-706B have same construction except the enclosure.
ZM-704J, ZM-705J, ZM-706BJ have same construction except the enclosure.
More details see photo documentation.

| IEC 60335-2-9 | | | |
|---------------|--|---|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 7 | MARKING AND INSTRUCTIONS | | P |
| 7.1 | Rated voltage or voltage range (V)..... : AC 220-240V | AC 220-240V | P |
| | Symbol for nature of supply, or..... : | | N/A |
| | Rated frequency (Hz)..... : 50/60Hz | 50/60Hz | P |
| | Rated power input (W), or : 750W | 750W | P |
| | Rated current (A) : | | N/A |
| | Manufacturer's or responsible vendor's name, trademark or identification mark..... : | NINGBO BAKELON ELECTRICAL APPLIANCE CO., LTD. | P |
| | Model or type reference : | ZM-704, ZM-705, ZM-706B, ZM-704J, ZM-705J, ZM-706BJ | P |
| | Symbol IEC 60417-5172, for class II appliances | | N/A |
| | IP number, other than IPX0 : | | N/A |
| | Symbol IEC 60417-5180, for class III appliances, unless | | N/A |
| | the appliance is operated by batteries only | | N/A |
| | Do not immerse beyond this level (IEC 60335-2-9) | | N/A |
| | Hot surface.....(IEC 60335-2-9) | | P |
| | 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 |
| 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 |
| | 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 | | N/A |

| IEC 60335-2-9 | | | |
|---------------|---|------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | the power input is related to the arithmetic mean value of the rated voltage range | | P |
| | Relation between marking for upper and lower limits of rated power input or rated current and voltage is clear | | N/A |
| 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 |
| 7.7 | Connection diagram fixed to appliances to be connected to more than two supply conductors and appliances for multiple supply, unless | | N/A |
| | correct mode of connection is obvious | | N/A |
| 7.8 | Except for type Z attachment, terminals for connection to the supply mains indicated as follows: | | P |
| | - marking of terminals exclusively for the neutral conductor (letter N) | | N/A |
| | - marking of protective earthing terminals (symbol IEC 60417-5019) | | P |
| | - marking not placed on removable parts | | P |
| 7.9 | Marking or placing of switches which may cause a hazard | | N/A |
| 7.10 | Indications of switches on stationary appliances and controls on all appliances by use of figures, letters or other visual means : This applies also to switches which are part of a control | By figures and letters | P |
| | If figures are used, the off position indicated by the figure 0 | | P |
| | 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: | | P |

| IEC 60335-2-9 | | | |
|---------------|--|------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | - 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 | N/A |
| | - children being supervised not to play with the appliance | Replaced by EN 60335-1 | 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 |
| | Appliance with inlet and intended to be immersed for cleaning, instruction sheet including in substance: (IEC 60335-2-9) | | N/A |
| | - remove connector before cleaning | | N/A |
| | - dry appliance inlet before re-use | | N/A |
| | The instructions for use for appliances intended to be used with a connector incorporating a thermostat shall state that only the appropriate connector must be used (IEC 60335-2-9) | | N/A |
| | Instructions for appliances for outdoor use (IEC 60335-2-9): | | N/A |
| | The appliance is suitable for outdoor use (IEC 60335-2-9) | | N/A |
| | The supply cord should be regularly examined for signs of damage, and if the cord is damaged, the appliance must not be used (IEC 60335-2-9) | | N/A |
| | The appliance must be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30mA (IEC 60335-2-9) | | N/A |
| | The appliance is to be connected to a socket-outlet having an earthing contact (class I) (IEC 60335-2-9) | | N/A |
| | The temperature of accessible surfaces may be high when the appliance is operating (IEC 60335-2-9) | | P |
| | If symbol IEC 60417-5041 (DB: 2002-10) is marked on appliances, the instructions shall state that the surfaces are liable to get hot during use (IEC 60335-2-9) | | P |

| IEC 60335-2-9 | | | |
|---------------|---|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | The instructions shall state that the appliances are not intended to be operated by means of an external timer or separate remote-control system (IEC 60335-2-9) | | P |
| | Instructions for use | | P |
| | For oven: The temperature of the door or the outer surface may be high when the appliance is operating(IEC 60335-2-9) | | N/A |
| | For toaster: Bread may burn. Therefore toasters must not be used near or below curtains and other combustible materials. They must be watched(IEC 60335-2-9) | | N/A |
| | For barbecue: WARNING: Charcoal or similar combustible fuels must not be used with this appliance. (IEC 60335-2-9) | | N/A |
| | For barbecue: Maximum quantity of water to be poured into the appliance.....(IEC 60335-2-9) | | N/A |
| | If top surface of a hotplate is of glass-ceramic or similar material and protects live parts, warning : If the surface is cracked, switch off the appliance to avoid the possibility of electric shock (IEC 60335-2-9) | | N/A |
| | For induction hotplates: Metallic objects such as knives, forks, spoons and lids not be placed on the hotplate since they can get hot(IEC 60335-2-9). | | N/A |
| | For breadmakers: maximum quantities of flour and raising agent that may be used(IEC 60335-2-9) | | N/A |
| 7.12.1 | Sufficient details for installation supplied | | N/A |
| | For an appliance intended to be permanently connected to the water mains and not connected by a hose-set, this is stated | | 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 state that the fixed wiring must be protected | | N/A |
| 7.12.4 | Instructions for built-in appliances: | | N/A |
| | - dimensions of space | | N/A |

| IEC 60335-2-9 | | | |
|---------------|---|-----------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | - dimensions and position of supporting and fixing | | 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 | | N/A |
| 7.12.7 | Instructions for fixed appliances stating how the appliance is to be fixed | | N/A |
| 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 | German and English versions | P |
| 7.14 | Marking clearly legible and durable, rubbing test as specified | | P |
| | The height of the triangle used with symbol IEC 60417-5041(DB:2002-10) shall be at least 12mm (IEC 60335-2-9) | | P |
| 7.15 | Markings on a main part | | P |
| | Marking clearly discernible from the outside, if necessary after removal of a cover | | P |

| IEC 60335-2-9 | | | |
|---------------|--|-----------------|----------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | For portable appliances, cover can be removed or opened without a tool | | N/A |
| | 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 | | N/A |
| | 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 |
| | The marking specified for hot surfaces shall be visible when the appliance is operated as in normal used (IEC 60335-2-9) | | 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 | | P |
| 8.1 | Adequate protection against accidental contact with live parts | | P |
| 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, with a force not exceeding 1 N: no contact with live parts | | P |
| | Use of test probe B of IEC 61032 through openings, with a force of 20N: no contact with live parts | | P |
| | For toasters having a crumb tray : use of test probe 41 of IEC 61032 : no contact through crumb tray with live parts that are disconnected by double pole switch using (IEC 60335-2-9) | | N/A |
| 8.1.2 | Use of test probe 13 of IEC 61032, with a force not exceeding 1 N, 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 |

| IEC 60335-2-9 | | | |
|----------------------|--|----------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 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 |
| 10 | POWER INPUT AND CURRENT | | P |
| 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 | | N/A |
| | the rated power input is related to the arithmetic mean value | | P |
| | Power input of induction hotplates measured separately (IEC 60335-2-9) | | N/A |
| 11 | HEATING | | P |
| 11.1 | No excessive temperatures in normal use | | P |
| | Compliance for toasters is also checked by the test of 11. 101 (IEC 60335-2-9) | | N/A |
| 11.2 | The appliance is held, placed or fixed in position as described..... | Away from the corner | P |
| | Radiant grills and raclette grills that are loaded from the front, rotary grills, ovens, breadmakers, cookers and hotplates are placed with their backs as near as possible to one of the walls of the test corner and away from the other wall(IEC 60335-2-9) | | N/A |
| 11.3 | Temperature rises, other than of windings, determined by thermocouples | | P |
| | Temperature rises of windings determined by resistance method, unless | | N/A |
| | the windings are non-uniform or it is difficult to make the necessary connections | | N/A |
| | If magnetic field of an induction hotplate unduly influences the results, temperature rises can be determined using platinum resistances or equivalent means (IEC 60335-2-9) | | N/A |
| 11.4 | Heating appliances operated under normal operation at 1.15 times rated power input (W) . : | (see appended table) | P |

| IEC 60335-2-9 | | | |
|---------------|--|----------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | If the temperature rise limits are exceeded in appliances incorporating motors, transformers or electronic circuits, and if 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 60335-2-9) | | N/A |
| 11.5 | Motor-operated appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage (V) . : | | N/A |
| 11.6 | Combined appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage (V)..... : | | N/A |
| 11.7 | Tests carried out in compliance with the paragraphs N° 1 to 11 (IEC 60335-2-9) | | P |
| 11.8 | Temperature rises monitored continuously and not exceeding the values in table 3 : | (see appended table) | 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 |
| | Sealing compound does not flow out | | P |
| | 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 |
| | For radiant grills, rotary grills, raclette grills, hotplates and cookers, instead of 65 K, the temperature rise of the wall of the test corner shall not exceed 75 K. (IEC 60335-2-9) | | N/A |
| | When an appliance connector incorporates a thermostat, the temperature rise limit for the pins of the inlet does not apply (IEC 60335-2-9) | | N/A |
| | The temperature rise limits of motors, transformers, components of electronic circuit and parts directly influenced by them may be exceeded when the appliance is operated at 1,15 times rated power input (IEC 60335-2-9) | | N/A |
| | Cheese used in sandwich toasting attachments doesn't flow into places where it can give rise to a hazard, such as reducing clearances or creepage distances below the values specified in Clause 29 (IEC 60335-2-9). | | N/A |

| IEC 60335-2-9 | | | |
|---------------|--|----------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 11.101 | The toaster in which the bread is inserted through the top are operated for three cycles under normal operation at rated power input. (IEC 60335-2-9). | | N/A |
| | The temperature rise of accessible surfaces of metallic sides that are at a height lower than 25mm below the top surface shall not exceed 90K (IEC 60335-2-9). | | N/A |
| 20 | STABILITY AND MECHANICAL HAZARDS | | P |
| 20.1 | Appliances having adequate stability | | P |
| | Tilting test through an angle of 10°, appliance placed on an inclined plane/horizontal support, not connected to the supply mains; appliance does not overturn | | P |
| | Tilting test repeated on appliances with heating elements, angle of inclination increased to 15° | | P |
| | Possible heating test in overturned position; temperature rise does not exceed values shown in table 9 | | N/A |
| 21 | MECHANICAL STRENGTH | | P |
| 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 | (see appended table) | P |
| | The appliance shows no damage impairing compliance with this standard, and | | P |
| | 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 |
| | If necessary, repetition of groups of three blows on a new sample | | N/A |
| | For appliances intended for outdoor use, the impact energy is 0.7J (IEC 60335-2-9) | | N/A |
| | Appliances incorporates visibly glowing heating elements located at the top of the oven and accessible to the test probe 41 of IEC 61032 (IEC 60335-2-9) | | N/A |

| IEC 60335-2-9 | | | |
|---------------|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | For hotplates with surfaces of glass-ceramic or similar, three blows applied to parts surfaces not exposed to the test of 21.101, impact energy 0,70J ± 0,05 J. (IEC 60335-2-9). | | N/A |
| 21.2 | Accessible parts of solid insulation having strength to prevent penetration by sharp implements | | P |
| | Test not applicable if the thickness of supplementary insulation is at least 1 mm and reinforced insulation at least 2 mm | | P |
| | The insulation is tested as specified, and does withstand the electric strength test of 16.3 | | N/A |
| 22 | CONSTRUCTION | | P |
| 22.1 | Appliance marked with the first numeral of the IP system, relevant requirements of IEC 60529 are fulfilled | | 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 |
| 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 | | N/A |
| | Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied | Knob | P |

| IEC 60335-2-9 | | | |
|---------------|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 22.13 | Unlikely that handles, when gripped as in normal use, make the operator's 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 or other fasteners, likely to be touched by the user in normal use or during user maintenance | | P |
| 22.18 | Current-carrying parts and other metal parts resistant to corrosion | | P |
| 22.20 | Direct contact between live parts and thermal insulation effectively prevented, unless | | P |
| | material used is non-corrosive, non-hygroscopic and non-combustible | | N/A |
| 22.21 | Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless | | P |
| | impregnated | | N/A |
| | 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, except in class III appliances or class III constructions that do not contain live parts, adequately supported | | N/A |
| | Heating elements constructed or supported so they are unlikely to become displaced in normal use. (IEC 60335-2-9) | | P |
| | In case of rupture, the heating conductor is unlikely to come in contact with accessible metal parts | | 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 | | P |

| IEC 60335-2-9 | | | |
|---------------|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 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 | | 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 materials or beads alone not used as supplementary or reinforced insulation | | N/A |
| | Insulating material in which heating conductors are embedded is considered to be basic insulation, not reinforced insulation | | N/A |
| | Oxygen bomb test at 70 °C for 96 h and 16 h at room temperature | | N/A |
| 22.33 | Conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts are not in direct contact with live parts | | P |
| | 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 |
| | 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 |

| IEC 60335-2-9 | | | |
|---------------|---|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 22.34 | Shafts of operating knobs, handles, levers etc. not live, unless | | P |
| | the shaft is not accessible when the part is removed | | N/A |
| 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 a failure of basic insulation, 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 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 |
| 22.41 | No components, other than lamps, containing mercury | | P |
| 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 29.1.3 due to deformation as a result of an external force applied to the enclosure | | P |
| 22.105 | Appliances have not openings on the underside that would allow small items to penetrate and touch live parts. (IEC 60335-2-9) | | P |
| | Distance measured between the supporting surface and live parts through openings (IEC 60335-2-9) | | P |
| | Distance requested as specified: (IEC 60335-2-9) | | P |
| 23 | INTERNAL WIRING | | P |
| 23.1 | Wireways smooth and free from sharp edges | | P |
| | Wires protected against contact with burrs, cooling fins etc. | | P |
| | Wire holes in metal well-rounded or provided with bushings | | P |

| IEC 60335-2-9 | | | |
|---------------|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Wiring effectively prevented from coming into contact with moving parts | | N/A |
| 23.2 | Beads etc. on live wires cannot change their position, and are not resting on sharp edges | | 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 | | P |
| | Flexible metallic tubes not causing damage to insulation of conductors | | P |
| | Open-coil springs not used | | P |
| | Adequate insulating lining provided inside a coiled spring, the turns of which touch one another | | P |
| | No damage after 10 000 flexings for conductors flexed during normal use, or | | P |
| | 100 flexings for conductors flexed during user maintenance | | P |
| | Electric strength test of 16.3, 1000 V between live parts and accessible metal parts | | P |
| | Not more than 10% of the strands of any conductor broken, and | | P |
| | not more than 30% for wiring supplying circuits that consume no more than 15W | | N/A |
| | Appliance with 2 stop positions: 10000 flexings made with moving part fully opened (IEC 60335-2-9) | | N/A |
| 23.4 | Bare internal wiring sufficiently rigid and fixed | | N/A |
| 23.5 | The insulation of internal wiring subjected to the supply mains voltage 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 | | P |
| | be such that it can only be removed by breaking or cutting | | P |

| IEC 60335-2-9 | | | |
|---------------|---|----------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 23.7 | The colour combination green/yellow only used 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 | | P |
| 24.1 | Components comply with safety requirements in relevant IEC standards | | P |
| | List of components..... : | (see appended table) | P |
| 27 | PROVISION FOR EARTHING | | P |
| 27.1 | Accessible metal parts of Class 0I and I appliances permanently and reliably connected to an earthing terminal or earthing contact of the appliance inlet | Class I | P |
| | Earthing terminals and earthing contacts not connected to the neutral terminal | | P |
| | Class 0, II and III appliances have no provision for earthing | | N/A |
| | Safety extra-low voltage circuits not earthed, unless | | N/A |
| | protective extra-low voltage circuits | | N/A |
| | No earthing via flexible metal tubes, coiled springs and cord anchorage (IEC 60335-2-9) | | P |
| 27.2 | Clamping means of earthing terminals adequately secured against accidental loosening | | P |
| | Terminals for the connection of external equipotential bonding conductors allow connection of conductors of 2.5 to 6 mm ² , and | | N/A |
| | do not provide earthing continuity between different parts of the appliance, and | | N/A |
| | conductors cannot be loosened without the aid of a tool | | P |

| IEC 60335-2-9 | | | |
|---------------|---|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 27.3 | For a detachable part having an earth connection and being plugged into another part of the appliance, the earth connection is made before and separated after current-carrying connections when removing the part | | N/A |
| | For appliances with supply cords, current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage | | 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 | | P |
| | Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure | | N/A |
| | 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 |
| | This requirement does not apply to connections providing earthing continuity in the protective extra-low voltage circuit, provided the 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 (Ω) : | Max.: 0,03Ω | P |
| 27.6 | The printed conductors of printed circuit boards not 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 | | P |
| | Clearances, creepage distances and solid insulation withstand electrical stress | | P |

| IEC 60335-2-9 | | | |
|----------------------|---|----------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | For coatings used on printed circuits boards to protect the microenvironment (Type 1) or to provide basic insulation (Type 2), Annex J applies..... : | | N/A |
| | The microenvironment is pollution degree 1 under type 1 protection | | P |
| | 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..... : | | P |
| 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 distances are 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 is not applicable: | | P |
| | - when the microenvironment is pollution degree 3, or | | 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 | | P |
| | 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 | | P |
| | Lacquered conductors of windings considered to be bare conductors | | N/A |

| IEC 60335-2-9 | | | |
|---------------|--|----------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 29.1.2 | Clearances of supplementary insulation not less than those specified for basic insulation in table 16..... : | (see appended table) | P |
| 29.1.3 | Clearances of reinforced insulation not less than those specified for basic insulation in table 16, using the next higher step for rated impulse voltage : | (see appended table) | 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 .. : | (see appended table) | 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 | | N/A |
| | Lacquered conductors of windings considered to be bare conductors | | N/A |
| | However, clearances at crossover points are not measured | | N/A |
| | Clearance between surfaces of PTC heating elements may be reduced to 1mm | | 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 | | P |
| | - insulation subjected to conductive pollution; pollution degree 3 | | P |

| IEC 60335-2-9 | | | |
|----------------------|---|----------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | A force of 2 N is applied to bare conductors, other than heating elements | | P |
| | 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 |
| | Pollution degree 3 applies, unless the insulation is enclosed or located so that it is unlikely to be exposed to pollution during normal use of the appliance (IEC 60335-2-9) | | P |
| 29.2.1 | Creepage distances of basic insulation not less than specified in table 17 | (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 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 those specified for basic insulation in table 17, or | (see appended table) | P |
| | Table 2 of IEC 60664-4, as applicable | | N/A |
| 29.2.3 | Creepage distances of reinforced insulation at least double those specified for basic insulation in table 17, or | (see appended table) | 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 | | N/A |
| 29.3 | Supplementary and reinforced insulation have adequate thickness, or a sufficient number of layers, to withstand the electrical stresses | | P |
| | Compliance checked: | | P |

| IEC 60335-2-9 | | | |
|----------------------|---|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | - by measurement, in accordance with 29.3.1, or | | P |
| | - by an electric strength test in accordance with 29.3.2, or | | N/A |
| | - by 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 |
| | Requirement not applied to the sheath of a visibly glowing heating element that is inaccessible to test probe 41 of IEC 61032 (IEC 60335-2-9) | | N/A |
| 29.3.1 | Supplementary insulation have a thickness of at least 1 mm | | P |
| | Reinforced insulation have a thickness of at least 2 mm | | P |

| 10.1 | TABLE: Power input deviation | | | | | P |
|------------------------|------------------------------|----------------|-------|--------------|----------|---|
| Input deviation of/at: | P rated (W) | P measured (W) | Δ P | Required Δ P | Remark | |
| AC 230V 50Hz | 750 | 741,7 | -1,1% | +5%-10% | ZM-704 | |
| AC 230V 60Hz | 750 | 739,6 | -1,4% | +5%-10% | ZM-704 | |
| AC 230V 50Hz | 750 | 727,9 | -2,9% | +5%-10% | ZM-705 | |
| AC 230V 60Hz | 750 | 725,8 | -3,2% | +5%-10% | ZM-705 | |
| AC 230V 50Hz | 750 | 723,7 | -3,5% | +5%-10% | ZM-706B | |
| AC 230V 60Hz | 750 | 722,9 | -3,6% | +5%-10% | ZM-706B | |
| AC 230V 50Hz | 750 | 741,7 | -1,1% | +5%-10% | ZM-704J | |
| AC 230V 60Hz | 750 | 739,6 | -1,4% | +5%-10% | ZM-704J | |
| AC 230V 50Hz | 750 | 727,9 | -2,9% | +5%-10% | ZM-705J | |
| AC 230V 60Hz | 750 | 725,8 | -3,2% | +5%-10% | ZM-705J | |
| AC 230V 50Hz | 750 | 723,7 | -3,5% | +5%-10% | ZM-706BJ | |
| AC 230V 60Hz | 750 | 722,9 | -3,6% | +5%-10% | ZM-706BJ | |

Supplementary information:

| 11.Z102 | TABLE: Heating test ZM-704 | | | P |
|--------------------------|----------------------------|---|--------------------------------------|---|
| | Test voltage (V)..... : | 242,5 | | — |
| | Ambient (°C).....: | 20,5 | | — |
| Thermocouple locations | | Max. temperature rise measured, Δ T (K) | Max. temperature rise limit, Δ T (K) | |
| Front surface plastic | | 24,8 | 65 | |
| Front surface metal | | 13,9 | 45 | |
| Top surface plastic | | 36,8 | 65 | |
| Left side surface | | 42,1 | 65 | |
| Left side surface metal | | 22,4 | 45 | |
| Right side surface | | 40,6 | 65 | |
| Right side surface metal | | 26,1 | 45 | |
| Rear surface | | 46,6 | 65 | |
| spring | | 25,4 | 45 | |

Supplementary information:

| 11.Z102 | TABLE: Heating test ZM-705 | | | P |
|------------------------|----------------------------|---|--------------------------------------|---|
| | Test voltage (V)..... : | 245,5 | | — |
| | Ambient (°C).....: | 23,9 | | — |
| Thermocouple locations | | Max. temperature rise measured, Δ T (K) | Max. temperature rise limit, Δ T (K) | |

| | | |
|-----------------------------------|------|----|
| Front surface plastic | 24,5 | 65 |
| Front surface metal | 13,8 | 45 |
| Top surface plastic | 35,7 | 65 |
| Left side surface | 38,4 | 65 |
| Left side surface metal | 20,2 | 45 |
| Right side surface | 37,0 | 65 |
| Right side surface metal | 11,8 | 45 |
| Rear surface | 43,8 | 65 |
| spring | 28,3 | 45 |
| Supplementary information: | | |

| | | | |
|-----------------------------------|------------------------------------|--|---|
| 11.Z102 | TABLE: Heating test ZM-706B | | P |
| | Test voltage (V)..... : | 244,6 | — |
| | Ambient (°C).....: | 23,0 | — |
| | Thermocouple locations | Max. temperature rise measured, ΔT (K) | Max. temperature rise limit, ΔT (K) |
| | Front surface plastic | 25,8 | 65 |
| | Front surface metal | 15,4 | 45 |
| | Top surface plastic | 26,6 | 65 |
| | Top surface metal | 25,3 | 45 |
| | Left side surface | 42,8 | 65 |
| | Left side surface metal | 15,1 | 45 |
| | Right side surface | 26,4 | 65 |
| | Right side surface metal | 17,3 | 45 |
| | Rear surface | 42,3 | 65 |
| | spring | 27,2 | 45 |
| Supplementary information: | | | |

| | | | | | | |
|--------------------------|--|---------------------|-----------------------|-----------------|---|---|
| 24.1 | TABLE: Critical components information | | | | | P |
| Object / part No. | Manufacturer/ trademark | Type / model | Technical data | Standard | Mark(s) of conformity¹⁾ | |
| Power plug | Shanghai Changqi Cable Co., Ltd. | CQ-04 | AC 250V; 16A | DIN VDE 0620-1 | VDE 40025452 | |
| Alternative | Zheng Yu Electric Appliance Fittings (Kunshang)Co., Ltd. | ZY-23L | AC 250V; 16A | DIN VDE 0620-1 | VDE 40017269 | |

| | | | | | |
|--|---|-----------------|--------------|----------------|----------------|
| Alternative | Yuyao Haidebao Electrical Appliance Co., Ltd. | HDB-03 | AC 250V; 16A | DIN VDE 0620-1 | VDE 40034846 |
| Alternative | CIXI SHANGEN CAR PARTS CO.,LTD | XM-3 | AC 250V; 16A | DIN VDE 0620-1 | VDE 40005129 |
| Alternative | YuyaoSiji Wire Industry Co., Ltd. | SJ-2 | AC 250V; 16A | DIN VDE 0620-1 | VDE 40003885 |
| Alternative | YuyaoYingjia Electrical ApplinaceCo., Ltd | YJ-03 | AC 250V; 16A | DIN VDE 0620-1 | VDE 40035837 |
| Alternative | Ningbo Liansheng Wire & Cable Co., Ltd | LS03 | AC 250V; 16A | DIN VDE 0620-1 | VDE 40034732 |
| Alternative | Ningbo Chengken Electric Appliance Co., Ltd., | ZK03 | AC 250V; 16A | DIN VDE 0620-1 | VDE 40046632 |
| Alternative | Yuyao Chongyu Electric Co., Ltd., | CY-03 | AC 250V; 16A | DIN VDE 0620-1 | VDE 40035562 |
| Alternative | Yuyao Shengshida Electronic Co., Ltd., | YD-03 | AC 250V; 16A | DIN VDE 0620-1 | VDE 40035426 |
| Alternative | Ningbo Qiaopu Electric Co., Ltd. | D02 | AC 250V; 16A | DIN VDE 0620-1 | TUV R 50286269 |
| Alternative | Yuyao Zhongjian Electric Appliance Co., Ltd., | ZT3 | AC 250V; 16A | DIN VDE 0620-1 | VDE 40047516 |
| BS plug only used in UK, not for GS mark | Yuyao Haidebao Electrical Appliance Co., Ltd. | HDB-08& HDB-08A | AC 250V; 6A | BS1363-1 | ASTA 1109 |
| Alternative | Ningbo Qiaopu Electric Co., Ltd. | D09, D09A | AC 250V; 6A | BS1363-1 | ASTA 930 |
| Alternative | Ningbo Chengken Electric Appliance Co., Ltd., | ZK06 | AC 250V; 6A | BS1363-1 | ASTA 1290 |
| Alternative | Yuyao Zhongjian Electric Appliance Co., Ltd., | ZJ-006 | AC 250V; 6A | BS1363-1 | ASTA 1270 |
| Fuse used in BS plug | Dongguan Cooper Electronics Co., Ltd. | TDC180 | AC 240V ;7A | BS 1362 | ASTA 658 |
| Alternative | Dongguan Ubill Electric Co., Ltd. | UBL8808 | AC 240V; 7A | BS 1362 | ASTA 1204 |
| Alternative | Dongguan Dawei Metal Electronics Co., Ltd. | 625 | AC 240V ;7A | BS1362 | ASTA 1207 |

| | | | | | |
|------------------------------|--|--------------------|-----------------------|---------------|--------------|
| Alternative | Shanghai Xinzhou Electronic Ltd. | FDC brand "SEMANN" | AC 240V ;7 A | BS 1362 | ASTA/1164 |
| Power supply cord(length≤2m) | Shanghai Chuangqi Cables Co., Ltd. | H05RR-F | 3G0,75mm ² | EN 50525-2-21 | VDE 40025408 |
| Alternative | Zheng Yu Electric Appliance Fittings (Kunshan)Co., Ltd | H05RR-F | 3G0,75mm ² | EN 50525-2-21 | VDE 40016693 |
| Alternative | Dong Guan Ever United Electric Wire & Cable Co., Ltd. | H05RR-F | 3G0,75mm ² | EN 50525-2-21 | VDE 40016378 |
| Alternative | CIXI SHANGEN CAR PARTS CO.,LTD | H05RR-F | 3G0,75mm ² | EN 50525-2-21 | VDE 40026384 |
| Alternative | Shangyu Jintao Electron Co., Ltd | H05RR-F | 3G0,75mm ² | EN 50525-2-21 | VDE 40018106 |
| Alternative | YuyaoSiji Wire Industry Co., Ltd. | H05RR-F | 3G0,75mm ² | EN 50525-2-21 | VDE 40019332 |
| Alternative | Ningbo Chengken Electric Appliance Co., Ltd., | H05RR-F | 3G0,75mm ² | EN 50525-2-21 | VDE 40035180 |
| Alternative | Ningbo Liansheng Wire & Cable Co., Ltd | H05VV-F | 3G0,75mm ² | EN 50525-2-11 | VDE 40022054 |
| Alternative | Yuyao Jingyi Electronics Co., Ltd | H05VV-F | 3G0,75mm ² | EN 50525-2-11 | VDE 40025190 |
| Alternative | Ningbo Yuxin Electrical Appliance Co., Ltd. | H05VV-F | 3G0,75mm ² | EN 50525-2-11 | VDE 40010786 |
| Alternative | Shangyu Jintao Electron Co., Ltd | H05VV-F | 3G0,75mm ² | EN 50525-2-11 | VDE 40013419 |
| Alternative | Yuyao Haidebao Electrical Appliance Co., Ltd | H05VV-F | 3G0,75mm ² | EN 50525-2-11 | VDE 40034583 |
| Alternative | Yuyao Siji Wire Industry Co., Ltd. | H05VV-F | 3G0,75mm ² | EN 50525-2-11 | VDE 40001417 |
| Alternative | YuyaoYingjia Electrical ApplinaceCo., Ltd | H05VV-F | 3G0,75mm ² | EN 50525-2-11 | VDE 40035260 |
| Alternative | Ningbo Chengken Electric Appliance Co., Ltd., | H05VV-F | 3G0,75mm ² | EN 50525-2-21 | VDE 40035111 |
| Alternative | Yuyao Chongyu Electric Co., Ltd., | H05VV-F | 3G0,75mm ² | EN 50525-2-21 | VDE 40034858 |
| Alternative | Yuyao Shengshida Electronic Co., Ltd., | H05VV-F | 3G0,75mm ² | EN 50525-2-21 | VDE 40034303 |

| | | | | | |
|--------------|---|--------------|--|----------------------------|---------------------------------|
| Alternative | Ningbo Qiaopu Electric Co., Ltd. | H05VV-F | 3G0,75mm ² | EN 50525-2-21 | TUV R 50279805 |
| Alternative | Yuyao Zhongjian Electric Appliance Co., Ltd., | H05VV-F | 3G0,75mm ² | EN 50525-2-21 | VDE 40033849 |
| Thermostat | Tongbao-hualong Controls Co., Ltd. | KSD301 | AC 250V; 10A; 1E5; Tf160°C; T205 | EN 60730-1 EN 60730-2-9 | TUVR 50128628 |
| Alternative | Jiangsu Changheng Group Control Component Co., Ltd. | KSD | AC 250V; 10A; 1E5; Tf160°C; T230 | EN 60730-1 EN 60730-2-9 | TUV SUD B 15 07 41718 010 |
| Alternative | Foshan Gaoming Xi Te Electrical Co., Ltd. | KSD301 | AC 250V; 10A; 2E4; Tf160°C; T250 | EN 60730-1 EN 60730-2-9 | TUVR 50219396 |
| Alternative | Shaoxing Zhongxin Electric Appliance Co., Ltd. | KSD301P | AC 250V; 10A; 1E5; Tf160°C; T250 | EN 60730-1 EN 60730-2-9 | TUVR 50229791 |
| Alternative | Haiyan Dongling Electrical Appliance Factory | KSD301 | AC 250V; 10A; 1E5; Tf160°C; T250 | EN 60730-1 EN 60730-2-9 | TUVR 50115161 |
| Alternative | Nanjing Shao Di Electronic Co., Ltd. | KSD301-1 | AC 250V; 10A; 1E5;Tf160°C; T220 | EN 60730-1 EN 60730-2-9 | TUVR 50219800 |
| Alternative | Cixi Zhendi Electric Appliance Co., Ltd. | KSD301 | AC 250V; 10A; 3E4;Tf160°C; T190 | EN 60730-1 EN 60730-2-9 | TUVR 50146245 |
| Alternative | Haiyan City Meige Electrical Factory | KSD301 | AC 250V; 10A; 1E4;Tf160°C; T220 | EN 60730-1 EN 60730-2-9 | TUVRh 50217952 |
| Thermal link | The Third Radio Factory of Yangzhong Jiangsu | RY240, RY | AC 250V; 10A; Tf240°C | EN 60691 | TUV R 50174222 |
| Alternative | ZhongshanLongde Electrical Co., Ltd. | RY240 | AC 250V; 10A; Tf240°C | EN 60691 | TUV SUD B 13 05 67446 021 |
| Alternative | Shanghai Xinyuan Electronic Co.,Ltd. | RY240 | AC 250V; 10A; Tf240°C | EN 60691 | TUVR 50056552 |
| Alternative | Zhangzhou Aupo Electronics Co., Ltd. | RY240 | AC 250V; 10A; Tf240°C | EN 60691 | VDE 40005418 |
| Alternative | Changzhou Fansheng Electric Appliance Co., Ltd. | FSRY01 240 | AC 250V; 10A; Tf240°C | EN 60691 | TUV R 50309236 |

| | | | | | |
|---------------|--|---------|--|------------------------------|-----------------------------------|
| Alternative | Zhongshan Qilin Electronics Co.,LTD. | QLF235 | AC 250V; 10A; Tf240°C | EN 60691 | TUV SUD B 15 07 90735 001 |
| Alternative | Zhong shan City Dong Feng Yan Cheng Wang Electronics Factory | RY240 | AC 250V; 10A; Tf240°C | IEC 60691 | TUV SUD B 17 02 98069 001 |
| Alternative | Zhongshan Yuanshun Thermal Protectors Co., Ltd. | RY240 | AC 250V; 10A; Tf240°C | EN 60691 | TUVR 50397951 |
| Alternative | JiangYin Zhi - Xiang Electronics Technology ., Ltd. | RY240 | AC 250 V, 10 A, Tf: 240 °C | EN 60691 | TUV R 50156815 |
| Internal wire | Jiangyin Yuanda Electrical Material Co., Ltd. | 3122 | 300V; 200°C; 20AWG and 22AWG only for indicator; 18AWG and 20AWG for others | IEC 60335-1 IEC 60335-2-9 | UL E216252 +tested with appliance |
| Alternative | Jiangyin Yuanda Electrical Material Co., Ltd. | H05SJ-K | 0,3-0,5mm ² , 180°C for indicator; 0,5-0,75mm ² for others | EN 50525-2-41 | VDE 40016706 |
| Alternative | Dongguan Nistar Transmitting Technology Co., Inc | 3122 | 300V; 200°C; 20AWG and 22AWG only for indicator; 18AWG and 20AWG for others | EN 60335-1 EN 60335-2-9 | UL E214184 +tested with appliance |
| Alternative | Dongguan Nistar Transmitting Technology Co., Inc | H05SJ-K | 0,3-0,5mm ² , 180°C for indicator; 0,5-0,75mm ² for others | EN 50525-2-41 | VDE 40017570 |
| Alternative | CIXI JIANGYUAN POWER CORD CO., LTD | 3122 | 300V; 200°C; 20AWG and 22AWG only for indicator; 18AWG and 20AWG for others | EN 60335-1 EN 60335-2-9 | UL E338998 +tested with appliance |
| Alternative | CIXI JIANGYUAN POWER CORD CO., LTD | H05SJ-K | 0,3-0,5mm ² , 180°C for indicator; 0,5-0,75mm ² for others | EN 50525-2-41 | VDE 40031080 |

| | | | | | |
|--|---|----------------------------------|--|----------------------------|--|
| Alternative | Cixi Shuanghong Wire Co., Ltd. | 3122 | 300V; 200°C; 20AWG and 22AWG only for indicator; 18AWG and 20AWG for others | EN 60335-1 EN 60335-2-9 | UL E333296 +tested with appliance |
| Alternative | Cixi Shuanghong Wire Co., Ltd. | H05SJ-K | 0,3-0,5mm ² , 180°C for indicator; 0,5-0,75mm ² for others | EN 50525-2-41 | VDE 40017324 |
| Heating element | Ningbo Bakelon Electrical appliance Co., Ltd. | DHL | Mark:"115V 375W"; tested at AC 110-120V; 375W×2 | EN 60335-1 EN 60335-2-9 | Tested with appliance |
| Wire connector | Heavy Power Co.,Ltd. | CE2, CE5, CE2x, CE5x | 300V; 105°C 300V; 150°C | EN 60335-1 EN 60335-2-9 | UL E113650 +tested with appliance |
| Alternative | SHENZHEN HONGYU ELECTRICAL CO LTD | HY-CE2, HY-CE5, HY-CE2X, HY-CE5X | 300V; 105°C | EN 60335-1 EN 60335-2-9 | UL E314734 + tested with appliance |
| Insulation of thermal link and internal wire | Jiangyin Yuanda Electrical Material Co., Ltd. | HST* | 600V; 200°C | EN 60335-1 EN 60335-2-9 | UL E246632 +tested with appliance |
| Alternative | CHERN-FWUH ENTERPRISE CO LTD | HST-1* | 600V; 200°C | EN 60335-1 EN 60335-2-9 | UL E221462 +tested with appliance |
| Mica | ZHEJIANG RONGTAI ELECTRIC MATERIAL CO LTD | Series R-5660-X | Min. Thickness: 0,15mm | EN 60335-1 EN 60335-2-9 | UL E231452 +tested with appliance |
| Indicator cover | NINGBO BAKELON ELECTRICAL APPLIANCE CO.,LTD | PC | Min. Thickness: 1,0mm | EN 60335-1 EN 60335-2-9 | Tested with appliance |
| Enclosure | NINGBO BAKELON ELECTRICAL APPLIANCE CO.,LTD | PF | Min. Thickness: 2,0mm | EN 60335-1 EN 60335-2-9 | Tested with appliance |

| | | | | | |
|--------------------|---|----|-----------------------|----------------------------|-----------------------|
| Terminal box cover | NINGBO BAKELON ELECTRICAL APPLIANCE CO.,LTD | PP | Min. Thickness: 2,0mm | EN 60335-1 EN 60335-2-9 | Tested with appliance |
|--------------------|---|----|-----------------------|----------------------------|-----------------------|

Supplementary information:

- 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.
- 2) For the mark of conformity with *, it means the components also tested with appliance accordingly.
- 3) 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 (mm) | Supplementary (mm) | Reinforced (mm) | Functiona I (mm) | Verdict / Remark |
| 330 | 0,2* / 0,5 / 0,8** | -- | -- | -- | -- | N/A |
| 500 | 0,2* / 0,5 / 0,8** | -- | -- | -- | -- | N/A |
| 800 | 0,2* / 0,5 / 0,8** | -- | -- | -- | -- | N/A |
| 1 500 | 0,5 / 0,8** / 1,0*** | -- | -- | -- | -- | N/A |
| 2 500 | 1,5 / 2,0*** | Note1 | Note2 | -- | Note4 | P |
| 4 000 | 3,0 / 3,5*** | -- | -- | Note3 | -- | P |
| 6 000 | 5,5 / 6,0*** | -- | -- | -- | -- | N/A |
| 8 000 | 8,0 / 8,5*** | -- | -- | -- | -- | N/A |
| 10 000 | 11,0 / 11,5*** | -- | -- | -- | -- | N/A |

Supplementary information:

- *) For tracks on printed circuit boards if pollution degree 1 and 2
- **) For pollution degree 3
- ***) If the construction is affected by wear, distortion, movement of the parts or during assembly

Remark:

Note 1: Basic insulation: live part of heating element(inside silicone sealing) to accessible earthed metal part: Cl. = 2,0mm (pollution degree 1), live part of heating element(outside silicone sealing) to accessible earthed metal part: Cl. = 4,0mm (pollution degree 3)

Note 2: Supplementary insulation: internal wire to accessible plastic enclosure: Cl. = 4,0mm

Note 3: Functional insulation: L-N of power cord: Cl.=8,0mm;

Note 4: Reinforced insulation: Live parts to accessible plastic enclosure: Cl.= 10,0mm

| | | |
|------|---|---|
| 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 | 0,18 | 0,6 | 0,85 | 1,2 | 1,5 | 1,7 | 1,9 | | — | — | N/A |
| ≤50 | 0,18 | 0,6 | 0,85 | 1,2 | 1,5 | 1,7 | 1,9 | — | | — | N/A |
| ≤50 | 0,36 | 1,2 | 1,7 | 2,4 | 3,0 | 3,4 | 3,8 | — | — | | N/A |
| 125 | 0,28 | 0,75 | 1,05 | 1,5 | 1,9 | 2,1 | 2,4 | | — | — | N/A |
| 125 | 0,28 | 0,75 | 1,05 | 1,5 | 1,9 | 2,1 | 2,4 | — | | — | N/A |
| 125 | 0,56 | 1,5 | 2,1 | 3,0 | 3,8 | 4,2 | 4,8 | — | — | | N/A |
| 250 | 0,56 | 1,25 | 1,8 | 2,5 | 3,2 | 3,6 | 4,0 | Note 1 | — | — | P |
| 250 | 0,56 | 1,25 | 1,8 | 2,5 | 3,2 | 3,6 | 4,0 | — | Note 2 | — | N/A |
| 250 | 1,12 | 2,5 | 3,6 | 5,0 | 6,4 | 7,2 | 8,0 | — | — | Note 3 | P |
| 400 | 1,0 | 2,0 | 2,8 | 4,0 | 5,0 | 5,6 | 6,3 | | — | — | N/A |
| 400 | 1,0 | 2,0 | 2,8 | 4,0 | 5,0 | 5,6 | 6,3 | — | | — | N/A |
| 400 | 2,0 | 4,0 | 5,6 | 8,0 | 10,0 | 11,2 | 12,6 | — | — | | N/A |
| 500 | 1,3 | 2,5 | 3,6 | 5,0 | 6,3 | 7,1 | 8,0 | | — | — | N/A |
| 500 | 1,3 | 2,5 | 3,6 | 5,0 | 6,3 | 7,1 | 8,0 | — | | — | N/A |
| 500 | 2,6 | 5,0 | 7,2 | 10,0 | 12,6 | 14,2 | 16,0 | — | — | | N/A |
| >630 and ≤800 | 1,8 | 3,2 | 4,5 | 6,3 | 8,0 | 9,0 | 10,0 | | — | — | N/A |
| >630 and ≤800 | 1,8 | 3,2 | 4,5 | 6,3 | 8,0 | 9,0 | 10,0 | — | | — | N/A |
| >630 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 |

Supplementary information:

*) **Material group IIIb is allowed if the working voltage does not exceed 50 V**

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

Remark:

Note1: Basic insulation: live part of heating element (inside silicone sealing) to accessible earthed metal part: Cr. = 2,0mm (pollution degree 1), live part of heating element (outside silicone sealing) to accessible earthed metal part: Cr. = 5,0mm (pollution degree 3)

Note2: Supplementary insulation: internal wire to accessible plastic enclosure: Cr. = 4,5mm

Note3: Reinforced insulation: Live parts to accessible plastic enclosure: Cr.= 12,0mm

| | | |
|-------------|---|----------|
| 29.2 | TABLE: Creepage distances, functional insulation | P |
|-------------|---|----------|

| Working voltage (V) | Creepage distance (mm) Pollution degree | | | | | | | Verdict / Remark |
|---------------------|--|------|------|-----------|----------------|-------|--------------|------------------|
| | 1 | 2 | | | 3 | | | |
| | Material group | | | | Material group | | | |
| | | I | II | IIIa/IIIb | I | II | IIIa/IIIb * | |
| ≤10 | 0,08 | 0,4 | 0,4 | 0,4 | 1,0 | 1,0 | 1,0 | N/A |
| 50 | 0,16 | 0,56 | 0,8 | 1,1 | 1,4 | 1,6 | 1,8 | N/A |
| 125 | 0,25 | 0,71 | 1,0 | 1,4 | 1,8 | 2,0 | 2,2 | N/A |
| 250 | 0,42 | 1,0 | 1,4 | 2,0 | 2,5 | 2,8 | 3,2 Note1 | P |
| 400 | 0,75 | 1,6 | 2,2 | 3,2 | 4,0 | 4,5 | 5,0 | N/A |
| 500 | 1,0 | 2,0 | 2,8 | 4,0 | 5,0 | 5,6 | 6,3 | N/A |
| >630 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 |

Supplementary information:

*) Material group IIIb is allowed if the working voltage does not exceed 50 V

Remark:

Functional insulation: L-N of power cord: Cr.=12,0mm

<End of Test Report>