TEST REPORT

Report No. ..... :	SZLC20201016-2SMB	
Applicant ..... :	MARUT ENTERPRISES,LLC	
Address ..... :	1855W.KATELLA AVENUE SUITE 365 ORANGE CA 92867	
Manufacturer ..... :	WENZHOUSMARTPRO INTERNATIONAL TRADE CO.,LTD	
Address ..... :	ROOM1104, 4BLOCK, DAZIRAN GARDEN, TANGJIAQIAO ROAD, WENZHOU, ZHEJIANG, CHINA	
Product Name ..... :	MANGROOMER - ULTIMATE PRO Self-Haircut Kit	
Model No..... :	B0745SC21L	
Standards ..... :	UL 60335-1 ED.6 UL 60335-2-8 ED.6	
Date of Receipt sample ... :	2020-10-16	
Date of Test ..... :	2020-10-16~2020-10-26	
Date of Issue ..... :	2020-10-26	
Test Type...... :	Test report	
Test Result ..... :	Pass	

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.

Test done by.	**Approved by.**
Project Engineer	Technical manager
Winston	Ray XU
Winston Wang	Ray XU

Test item description ..... :	MANGROOMER - ULTIMATE PRO Self-Haircut Kit
Trade Mark ..... :	--
Model/Type reference ..... :	B0745SC21L
Ratings ..... :	Class 2 power supply: BRP005-050100CU: Input :100-240V~,60/50HZ,0.2A, CLASS II, IP20; Output: DC 5V,1.0A MANGROOMER - ULTIMATE PRO Self-Haircut Kit: DC 5V,1.0A,CLASS III

Possible test case verdicts:

- test case does not apply to the test object	:	N/A (Not applicable)
- test object does meet the requirement	:	P (Pass)
- test object does not meet the requirement	:	F (Fail)
- test object does not demand		N/D (Not demanded)

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

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

Summary of subcontract test:

N/A

General product information:

The appliances are MANGROOMER - ULTIMATE PRO Self-Haircut Kit.
The equipment under tests is CLASS III product power by Class 2 power supply, electronic components mounted on PCB.

The manufacturer assumes responsibility of providing manuals and markings in the official language of the country in which the equipment is installed. See miscellaneous enclosure for manufacturer's letter of assurance.

Summary of testing:

1. All appliances are complied with the requirements of this standard.
2. **List of countries addressed: National Differences included in the UL adoption of the corresponding IEC standard**
   The product fulfils the requirements of
   UL 60335-1 ED.6 Edition Date: October 31, 2016
   UL 60335-2-8 ED.6 Edition Dated June 25, 2018

Copy of marking

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.

Nameplate of Power Supply:

Nameplate of MANGROOMER - ULTIMATE PRO Self-Haircut Kit:

MANGROOMER - ULTIMATE PRO Self-Haircut Kit

Model:B0745SC21L
SKU# 1999-6
INPUT: 5Vdc,1.0A POWER: 5W

MARUT ENTERPRISES, LLC
1855W.KATELLA AVENUE SUITE 365 ORANGE CA 92867

Note: The above marking are the minimum requirements required by the safety standard. For the final production sample, the marking which do not give rise to misunderstanding may be added.

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
5	**GENERAL CONDITIONS FOR THE TESTS**		**P**
	Tests performed according to clause 5, e.g. nature of supply, sequence of testing, etc.		P
5.8.2	Appliances with different rated voltages are assumed to have different voltage ranges. (IEC 60335-2-8)		P
6	**CLASSIFICATION**		**P**
6.1	Protection against electric shock: Class 0, 0I, I, II, III..... ..... :	Class II	P
	For a class III construction with a detachable power supply part the appliance is classified according to the detachable power supply part	Class III with Class II power supply	P
	Animal shearers shall be class I, class II or class III. (IEC 60335-2-8)		P
	Washable shavers and wet shavers shall be class II or class III. (IEC 60335-2-8)		N/A
	Other appliances having a rated voltage not exceeding 150 V shall be of class 0, class I, class II or class III. (IEC 60335-2-8)		N/A
	Other appliances shall be class II or class III. (IEC 60335-2-8)		P
6.2	Protection against harmful ingress of water		N/A
	Washable shavers and wet shavers are at least IPX7. (IEC 60335-2-8)		N/A
	Parts intended to be fixed; transformers etc. are at least IPX4. (IEC 60335-2-8)		N/A
7	**MARKING AND INSTRUCTIONS**		**P**
7.1	Rated voltage or voltage range (V)..... .... :	100-240V	P
	Symbol for nature of supply, or..... ..... :	~	P
	Rated frequency (Hz)..... ..... :	50-60Hz	P
	Rated power input (W), or .... :		N/A
	Rated current (A) .... :	0.2A	P
	Manufacturer's or responsible vendor's name, trademark or identification mark .... :		P
	Model or type reference..... ..... :		P
	Symbol IEC 60417-5172, for class II appliances		P
	IP number, other than IPX0 .... :	IPX0	P
	Symbol IEC 60417-5180, for class III appliances, unless		N/A
	the appliance is operated by batteries only, or		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	for appliances powered by rechargeable batteries recharged in the appliance		N/A
	Symbol IEC 60417-5018, for class II and class III appliances incorporating a functional earth		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 60417-5574 for washable shavers. (IEC 60335-2-8)		P
	Symbol IEC 60417-5582 for wet shavers. (IEC 60335-2-8)		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		P
	Different rated values marked with the values separated by an oblique stroke		N/A
7.4	Appliances adjustable for different rated voltages or rated frequencies, the voltage or the frequency setting is clearly discernible		N/A
	Requirement met if frequent changes are not required and the rated voltage or rated frequency 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
	the power input or current are 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		P
	Symbol for class II appliances placed unlikely to be confused with other marking		P
	Units of physical quantities and their symbols according to international standardized system		P

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
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:		N/A
	- marking of terminals exclusively for the neutral conductor (letter N)		N/A
	- marking of protective earthing terminals (symbol IEC 60417-5019)		N/A
	- marking of functional earthing terminals (symbol IEC 60417-5018)		N/A
	- marking not placed on removable parts		N/A
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 .... :		N/A
	This applies also to switches which are part of a control		N/A
	If figures are used, the off position indicated by the figure 0		N/A
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		N/A
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
	- 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		P
	- children being supervised not to play with the appliance		P
	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		P
	Instructions for class III appliances state that it must only be supplied at SELV, unless		P

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	it is a battery-operated appliance, the battery being charged outside the appliance		P
	For appliances for altitudes exceeding 2000 m, the maximum altitude is stated .... :		N/A
	The instructions for appliances incorporating a functional earth states that the appliance incorporates an earth connection for functional purposes only		N/A
	The instructions for animal clippers shall state that the appliance is intended for trimming purposes only. (IEC 60335-2-8)		N/A
	If symbol IEC 60417-5574 or -5582 is used, its meaning shall be explained. (IEC 60335-2-8)		P
	Shavers, other than washable shavers or wet shavers, shall include: WARNING: Keep the appliance dry. (IEC 60335-2-8)		P
	Washable shavers with detachable interconnection cords shall include: WARNING: Detach the hand-held part from the supply cord before cleaning it in water. (IEC 60335-2-8)		N/A
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		P
	If different rated voltages or different rated frequencies are marked, the instructions state what action to be taken to adjust the appliance		P
	The installation instructions for washable shavers and wet shavers, other than those classified IPX7, shall state that the parts that have to be fixed must be installed so they cannot fall into water. (IEC 60335-2-8)		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

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	- dimensions of space		N/A
	- 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		N/A
	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
7.12.9	Instructions specified in 7.12 and from 7.12.1 to 7.12.8 appear together before any other instructions supplied with the appliance		P
	These instructions may be supplied with the appliance separately from any functional use booklet		P
	They may follow the description of the appliance that identifies parts, or follow the drawings/sketches		P
	In addition, instructions are also available in an alternative format such as on a website or on request from the user in a format such as a DVD		P

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	In addition, instructions are also available in an alternative format such as on a website or in a format such as a DVD..... ....:		P
7.13	Instructions and other texts in an official language	English	P
7.14	Markings clearly legible and durable:		P
	Signal words WARNING, CAUTION, DANGER in uppercase having a height as specified ....:		P
	Uppercase letter of the text explaining the signal word not smaller than 1,6 mm ....:		P
	Moulded in, engraved, or stamped markings either raised above or have a depth below the surface of at least 0,25 mm, unless		P
	contrasting colours are used		P
	Markings checked by inspection, measurement and rubbing test as specified		P
	The height of symbol IEC 60417-5574 (2002-10) and symbol IEC 60417-5582 (2002-10) shall be at least 5 mm. (IEC 60335-2-8)		P
7.15	Markings 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		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 symbol IEC 60417-5018 placed next to the symbol IEC 60417-5172 or IEC 60417-5180		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**

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
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		P
	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
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		N/A
8.1.3	For appliances other than class II, use of test probe 41 of IEC 61032, with a force not exceeding 1 N: no contact with live parts of visible glowing heating elements or supporting parts		N/A
	For a single switching action obtained by a switching device, requirements as specified		N/A
	For appliances with a supply cord and without a switching device, the single switching action may be obtained by the withdrawal of the plug		N/A
8.1.4	Accessible part not considered live if:		P
	- 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		P
	- or separated from live parts by protective impedance		P
	If protective impedance: d.c. current not exceeding 2 mA, and		N/A
	a.c. peak value not exceeding 0.7 mA		P
	- for peak values over 42.4 V up to and including 450 V, capacitance not exceeding 0,1 μF		P
	- for peak values over 450 V up to and including 15 kV, discharge not exceeding 45 μC		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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:		P
	- built-in appliances		N/A
	- fixed appliances		N/A
	- appliances delivered in separate units		P
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
9	**STARTING OF MOTOR-OPERATED APPLIANCES**		**N/A**
	Requirements and tests are specified in part 2 when necessary		N/A
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
	If the power input varies throughout the operating cycle and the maximum value of the power input exceeds, by a factor greater than two, the arithmetic mean value of the power input occurring during a representative period, the power input is the maximum value that is exceeded for more than 10 % of the representative period		N/A
	Otherwise the power input is the arithmetic mean value		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 power input is related to the arithmetic mean value		P
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
	If the current varies throughout the operating cycle and the maximum value of the current exceeds, by a factor greater than two, the arithmetic mean value of the current occurring during a representative period, the current is the maximum value that is exceeded for more than 10 % of the representative period		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	Otherwise the current is the arithmetic mean value		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**		**P**
11.1	No excessive temperatures in normal use		P
11.2	The appliance is held, placed or fixed in position as described ..... :		P
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		P
11.4	Heating appliances operated under normal operation at 1.15 times rated power input (W) .... :		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) ..... :		P
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	Appliances intended for household use only are operated continuously for 10 min. (IEC 60335-2-8)		P
	Animal shearers are operated until steady conditions are established. (IEC 60335-2-8)		P
	Animal clippers and other appliances are operated for 10 min followed by a rest period of 10 min. This cycle of operation is repeated until steady conditions are established. (IEC 60335-2-8)		N/A
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		P
	if there is doubt with regard to classification of insulation,		P
	tests of Annex C are carried out		P
	Sealing compound does not flow out		P
	Protective devices do not operate, except		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	components in protective electronic circuits tested for the number of cycles specified in 24.1.4		N/A
	The temperature rise of parts that are in contact with skin or hair in normal use, or are held in the hand, shall not exceed the limits specified for handles which are continuously held in normal use. (IEC 60335-2-8)		P
13	**LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE**		**P**
13.1	Leakage current not excessive and electric strength adequate		P
	Heating appliances operated at 1.15 times the rated power input (W) ..... :		N/A
	Motor-operated appliances and combined appliances supplied at 1.06 times the rated voltage (V) ..... :		P
	Protective impedance and radio interference filters disconnected before carrying out the tests		N/A
13.2	The leakage current is measured by means of the circuit described in Figure 4 of IEC 60990:1999		P
	For class 0I appliances and class I appliances, except parts of class II construction, C may be replaced by a low impedance ammeter		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
14	**TRANSIENT OVERVOLTAGES**		**N/A**
	Appliances withstand the transient over-voltages to which they may be subjected		N/A
	Clearances having a value less than specified in table 16 subjected to an impulse voltage test, the test voltage specified in table 6 ..... :	(see appended table)	N/A
	No flashover during the test, unless		N/A
	of functional insulation if the appliance complies with clause 19 with the clearance short-circuited		N/A
15	**MOISTURE RESISTANCE**		**P**
15.1	Enclosure provides the degree of moisture protection according to classification of the appliance		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	Compliance checked as specified in 15.1.1, taking into account 15.1.2, followed by the electric strength test of 16.3		N/A
	No trace of water on insulation which can result in a reduction of clearances or creepage distances below values specified in clause 29		N/A
15.1.1	Appliances, other than IPX0, subjected to tests as specified in IEC 60529..... :		N/A
	Water valves containing live parts in external hoses for connection of an appliance to the water mains tested as specified for IPX7 appliances		N/A
15.1.2	Hand-held appliance turned continuously through the most unfavourable positions during the test		N/A
	Built-in appliances installed according to the instructions		N/A
	Appliances placed or used on the floor or table placed on a horizontal unperforated support		N/A
	Appliances normally fixed to a wall and appliances with pins for insertion into socket-outlets are mounted on a wooden board		N/A
	For IPX3 appliances, the base of wall mounted appliances is placed at the same level as the pivot axis of the oscillating tube		N/A
	For IPX4 appliances, the horizontal centre line of the appliance is aligned with the pivot axis of the oscillating tube, and		N/A
	for appliances normally used on the floor or table, the movement is limited to two times 90° for a period of 5 min, the support being placed at the level of the pivot axis of the oscillating tube		N/A
	Wall-mounted appliances, take into account the distance to the floor stated in the instructions		N/A
	Appliances normally fixed to a ceiling are mounted underneath a horizontal unperforated support, the pivot axis of the oscillating tube located at the level of the underside of the support, and		N/A
	for IPX4 appliances, the movement of the tube is limited to two times 90° from the vertical for a period of 5 min		N/A
	Appliances with type X attachment fitted with a flexible cord as described		N/A
	Detachable parts subjected to the relevant treatment with the main part		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	However, if a part has to be removed for user maintenance and a tool is needed, this part is not removed		N/A
15.2	Spillage of liquid does not affect the electrical insulation		N/A
	Spillage solution comprising water containing approximately 1 % NaCl and 0,6 % rinsing agent		N/A
	Appliances with type X attachment fitted with a flexible cord as described		N/A
	Appliances incorporating an appliance inlet tested with or without an connector, whichever is most unfavourable		N/A
	Detachable parts are removed		N/A
	Overfilling test with additional amount of the solution, over a period of 1 min (l) ..... :		N/A
	The appliance withstands the electric strength test of 16.3		N/A
	No trace of water on insulation that can result in a reduction of clearances or creepage distances below values specified in clause 29		N/A
15.3	Appliances proof against humid conditions		P
	Checked by test Cab: Damp heat steady state in IEC 60068-2-78		P
	Detachable parts removed and subjected, if necessary, to the humidity test with the main part		P
	Humidity test for 48 h in a humidity cabinet		P
	Reassembly of those parts that may have been removed		P
	The appliance withstands the tests of clause 16		P
16	**LEAKAGE CURRENT AND ELECTRIC STRENGTH**		**P**
16.1	Leakage current not excessive and electric strength adequate		P
	Protective impedance disconnected from live parts before carrying out the tests		N/A
	Tests carried out at room temperature and not connected to the supply		P
16.2	Single-phase appliances: test voltage 1.06 times rated voltage (V) ..... :		P
	Three-phase appliances: test voltage 1.06 times rated voltage divided by √3 (V)..... :		N/A
	Leakage current measurements..... :	(see appended table)	P

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	Limit values doubled if:		P
	- all controls have an off position in all poles, or		P
	- the appliance has no control other than a thermal cut-out, or		N/A
	- all thermostats, temperature limiters and energy regulators do not have an off position, or		N/A
	- the appliance has radio interference filters		N/A
	With the radio interference filters disconnected, the leakage current do not exceed limits specified..... :	(see appended table)	N/A
16.3	Electric strength tests according to table 7..... :	(see appended table)	P
	Test voltage applied between the supply cord and inlet bushing and cord guard and cord anchorage as specified..... :	(see appended table)	P
	No breakdown during the tests		P
17	**OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS**		**P**
	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use ..... :	Approved power supply.	P
	Appliance supplied with 1.06 or 0.94 times rated voltage under the most unfavourable short-circuit or overload likely to occur in normal use (V) ..... :		P
	Basic insulation is not short-circuited		P
	Temperature rise of insulation of the conductors of safety extra-low voltage circuits not exceeding the relevant value specified in table 3 by more than 15 K		P
	Temperature of the winding not exceeding the value specified in table 8		P
	However, limits do not apply to fail-safe transformers complying with sub-clause 15.5 of IEC 61558-1		N/A
18	**ENDURANCE**		**N/A**
	Requirements and tests are specified in part 2 when necessary		N/A
19	**ABNORMAL OPERATION**		**P**
19.1	The risk of fire, mechanical damage or electric shock under abnormal or careless operation obviated		P
	Electronic circuits so designed and applied that a fault will not render the appliance unsafe ..... :	(see appended table)	P

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	Appliances incorporating heating elements subjected to the tests of 19.2 and 19.3, and		N/A
	if the appliance also has a control that limit the temperature during clause 11 it is subjected to the test of 19.4, and		N/A
	if applicable, to the test of 19.5		N/A
	Appliances incorporating PTC heating elements are also subjected to the test of 19.6		N/A
	Appliances incorporating motors subjected to the tests of 19.7 to 19.10, as applicable		N/A
	Appliances incorporating electronic circuits subjected to the tests of 19.11 and 19.12, as applicable		P
	Appliances incorporating contactors or relays subjected to the test of 19.14, being carried out before the tests of 19.11		N/A
	Appliances incorporating voltage selector switches subjected to the test of 19.15		N/A
	Unless otherwise specified, the tests are continued until a non-self-resetting thermal cut-out operates, or		P
	until steady conditions are established		P
	If a heating element or intentionally weak part becomes open-circuited, the relevant test is repeated on a second sample		N/A
	Hand-held appliances are also subjected to the test of 19.101. (IEC 60335-2-8)		N/A
19.2	Test of appliances with heating elements with restricted heat dissipation; test voltage (V), power input of 0.85 times rated power input (W) ..... :		N/A
19.3	Test of 19.2 repeated; test voltage (V), power input of 1.24 times rated power input (W) ..... :		N/A
19.4	Test conditions as in clause 11, any control limiting the temperature during tests of clause 11 short-circuited		N/A
19.5	Test of 19.4 repeated on Class 0I and I appliances with tubular sheathed or embedded heating elements. No short-circuiting, but one end of the element connected to the sheath		N/A
	The test repeated with reversed polarity and the other end of the heating element connected to the sheath		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	The test is not carried out on appliances intended to be permanently connected to fixed wiring and on appliances where an all-pole disconnection occurs during the test of 19.4		N/A
19.6	Appliances with PTC heating elements tested at rated voltage, establishing steady conditions		N/A
	The working voltage of the PTC heating element is increased by 5% and the appliance is operated until steady conditions are re-established. The voltage is then increased in similar steps until 1.5 times working voltage or until the PTC heating element ruptures (V)..... :		N/A
19.7	Stalling test by locking the rotor if the locked rotor torque is smaller than the full load torque, or		P
	locking moving parts of other appliances		P
	Locked rotor, capacitors open-circuited one at a time		P
	Test repeated with capacitors short-circuited one at a time, unless		N/A
	the capacitor is of class S2 or S3 of IEC 60252-1		N/A
	Appliances with timer or programmer supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed..... :		N/A
	An electronic timer or programmer that operates to ensure compliance with the test before the maximum period under the conditions of Clause 11 is reached, is a protective electronic circuit		N/A
	Other appliances supplied with rated voltage for a period as specified..... :		N/A
	Winding temperatures not exceeding values specified in table 8..... :	(see appended table)	P
	Appliances that are not hand-held or are not kept switched on by hand are tested for 5 min.(IEC 60335-2-8)		N/A
19.8	Multi-phase motors operated at rated voltage with one phase disconnected		N/A
19.9	Running overload test on appliances incorporating motors intended to be remotely or automatically controlled or liable to be operated continuously		N/A
	Motor-operated and combined appliances for which 30.2.3 is applicable and that use overload protective devices relying on electronic circuits to protect the motor windings, are also subjected to the test		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	Winding temperatures not exceeding values as specified..... :	(see appended table)	N/A
19.10	Series motor operated at 1.3 times rated voltage for 1 min (V) ..... :		N/A
	During the test, parts not being ejected from the appliance		N/A
19.11	Electronic circuits, compliance checked by evaluation of the fault conditions specified in 19.11.2 for all circuits or parts of circuits, unless		P
	they comply with the conditions specified in 19.11.1		P
	Appliances incorporating an electronic circuit that relies upon a programmable component to function correctly, subjected to the test of 19.11.4.8, unless		N/A
	restarting does not result in a hazard		P
	Appliances having a device with an off position obtained by electronic disconnection, or a device placing the appliance in a stand-by mode, subjected to the tests of 19.11.4		P
	If the safety of the appliance under any of the fault conditions depends on the operation of a miniature fuse-link complying with IEC 60127, the test of 19.12 is carried out		N/A
	During and after each test the following is checked:		P
	- the temperature of the windings do not exceed the values specified in table 8		P
	- the appliance complies with the conditions specified in 19.13		P
	- any current flowing through protective impedance not exceeding the limits specified in 8.1.4		P
	If a conductor of a printed board becomes open-circuited, the appliance is considered to have withstood the particular test, provided both of the following conditions are met:		N/A
	- the base material of the printed circuit board withstands the test of Annex E		N/A
	- any loosened conductor does not reduce clearance or creepage distances between live parts and accessible metal parts below the values specified in clause 29		N/A
19.11.1	Fault conditions a) to g) in 19.11.2 are not applied to circuits or parts of circuits meeting both of the following conditions:		P
	- the electronic circuit is a low-power circuit, that is, the maximum power at low-power points does not exceed 15 W according to the tests specified		P

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction of other parts of the appliance does not rely on the correct functioning of the electronic circuit		P
19.11.2	Fault conditions applied one at a time, the appliance operating under conditions specified in clause 11, but supplied at rated voltage, duration of the tests as specified:		P
	a) short circuit of functional insulation if clearances or creepage distances are less than the values specified in clause 29		P
	b) open circuit at the terminals of any component		P
	c) short circuit of capacitors, unless		P
	they comply with IEC 60384-14		P
	d) short circuit of any two terminals of an electronic component, other than integrated circuits		P
	This fault condition is not applied between the two circuits of an optocoupler		P
	e) failure of triacs in the diode mode		P
	f) failure of microprocessors and integrated circuits		P
	g) failure of an electronic power switching device		P
	Each low power circuit is short-circuited by connecting the low-power point to the pole of the supply source from which the measurements were made		P
19.11.3	If the appliance incorporates a protective electronic circuit that operates to ensure compliance with clause 19, the appliance is tested as specified		P
19.11.4	Appliances having a device with an off position obtained by electronic disconnection, or		P
	a device that can be placed in the stand-by mode,		P
	subjected to the tests of 19.11.4.1 to 19.11.4.7, the device being set in the off position or in the stand-by mode		P
	Appliances incorporating a protective electronic circuit subjected to the tests of 19.11.4.1 to 19.11.4.7, the tests being carried out after the protective electronic circuit has operated, except that		N/A
	appliances operated for 30 s or 5 min during the test of 19.7 are not subjected to the tests for electromagnetic phenomena.		P
	Surge protective devices disconnected, unless		N/A
	They incorporate spark gaps		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
19.11.4.1	The appliance is subjected to electrostatic discharges in accordance with IEC 61000-4-2, test level 4		P
19.11.4.2	The appliance is subjected to radiated fields in accordance with IEC 61000-4-3, at frequency ranges specified		P
19.11.4.3	The appliance is subjected to fast transient bursts in accordance with IEC 61000-4-4, test level 3 or 4 as specified		P
19.11.4.4	The power supply terminals of the appliance subjected to voltage surges in accordance with IEC 61000-4-5, test level 3 or 4 as specified		P
	An open circuit test voltage of 2 kV is applicable for the line-to-line coupling mode		P
	An open circuit test voltage of 4 kV is applicable for the line-to-earth coupling		P
	Earthed heating elements in class I appliances disconnected		P
19.11.4.5	The appliance is subjected to injected currents in accordance with IEC 61000-4-6, test level 3		P
19.11.4.6	Appliances having a rated current not exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-11		P
	Appliances having a rated current exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-34		P
19.11.4.7	The appliance is subjected to mains signals in accordance with IEC 61000-4-13, test level class 2		P
19.11.4.8	The appliance is supplied at rated voltage and operated under normal operation. After 60s the power supply is reduced to a level such that the appliance ceases to respond or parts controlled by the programmable component cease to operate		N/A
	The appliance continues to operate normally, or		N/A
	requires a manual operation to restart		N/A
19.12	If the safety of the appliance for any of the fault conditions specified in 19.11.2 depends on the operation of a miniature fuse-link complying with IEC 60127, the test is repeated, measuring the current flowing through the fuse-link; measured current (A); rated current of the fuse-link (A)..... :		N/A
19.13	During the tests the appliance does not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts		P

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	Temperature rises not exceeding the values shown in table 9 ..... :	(see appended table)	P
	Compliance with clause 8 not impaired		P
	If the appliance can still be operated it complies with 20.2		N/A
	Insulation, other than of class III appliances or class III constructions that do not contain live parts, withstands the electric strength test of 16.3, the test voltage as specified in table 4:		P
	- basic insulation (V) ..... :		P
	- supplementary insulation (V)..... :		P
	- reinforced insulation (V) ..... :		P
	After operation or interruption of a control, clearances and creepage distances across the functional insulation withstand the electric strength test of 16.3, the test voltage being twice the working voltage		P
	The appliance does not undergo a dangerous malfunction, and		P
	no failure of protective electronic circuits, if the appliance is still operable		P
	Appliances tested with an electronic switch in the off position, or in the stand-by mode:		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
19.14	Appliances operated under the conditions of clause 11, any contactor or relay contact operating under the conditions of clause 11 being short-circuited		N/A
	For a relay or contactor with more than one contact, all contacts are short-circuited at the same time		N/A
	A relay or contactor operating only to ensure the appliance is energized for normal use is not short-circuited		N/A
	If more than one relay or contactor operates in clause 11, they are short-circuited in turn		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
19.15	For appliances with a mains voltage selector switch, the switch is set to the lowest rated voltage position and the highest value of rated voltage is applied		N/A
19.101	Hand-held appliances are placed on a soft-wood board in the most unfavourable position. They are supplied at rated voltage and operated until steady conditions are established. (IEC 60335-2-8)		P
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°		N/A
	Possible heating test in overturned position; temperature rise does not exceed values shown in table 9		N/A
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury		N/A
	Protective enclosures, guards and similar parts are non-detachable, and		N/A
	have adequate mechanical strength		N/A
	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 closure		N/A
	Not possible to touch dangerous moving parts with the test probe described		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
	Blows with an impact energy of 0,5 J are only applied to those parts that could hit the floor if the appliance is dropped. Three blows are applied to other parts with an impact energy of 0,35 J. (IEC 60335-2-8)		P
	Blows are not applied to cutting heads. (IEC 60335-2-8)		P

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	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
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
22.2	Stationary appliance: means to ensure all-pole disconnection from the supply being provided:		N/A
	- a supply cord fitted with a plug, or		N/A
	- a switch complying with 24.3, or		N/A
	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided, or		N/A
	- an appliance inlet		N/A
	Singe-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		P
	Applied torque not exceeding 0.25 Nm		P
	Pull force of 50N 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		P
	Each pin subjected to a torque of 0.4Nm; the pins are not rotating, unless		P
	rotating does not impair compliance with this standard		P

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
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 pins, for appliances having a capacitor with rated capacitance equal to or greater than 0,1μF, the appliance being disconnected from the supply at the instant of voltage peak		P
	Voltage not exceeding 34 V (V)..... :	8V	P
	If compliance relies on the operation of an electronic circuit, the electromagnetic phenomena tests of 19.11.4.3 and 19.11.4.4 are applied		N/A
	The discharge test is then repeated three times, voltage not exceeding 34 V (V) ..... :		N/A
22.6	Electrical insulation not affected by condensing water or leaking liquid		P
	Electrical insulation of Class II appliances not affected if a hose ruptures or seal leaks		P
	In case of doubt, test as described		P
22.7	Adequate safeguards against the risk of excessive pressure in appliances containing liquid or gases or having steam-producing devices		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		P
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:		N/A
	- 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		N/A
	Non-self-resetting thermal motor protectors have a trip-free action, unless		N/A
	they are voltage maintained		N/A
	Reset buttons of non-self-resetting controls so located or protected that accidental resetting is unlikely		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
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		P
	No deterioration of the fixing properties of snap-in devices used in parts that are likely to be removed during installation or servicing		P
	Tests as described		P
22.12	Handles, knobs etc. fixed in a reliable manner, if loosening result in a hazard		P
	Removing or fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible, if resulting in a hazard		P
	A choking hazard does not apply to appliances for commercial use		P
	Axial force 15 N applied to parts, the shape being so that an axial pull is unlikely to be applied		P
	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied		P
	If the part is removed and can be contained within the small parts cylinder, it is considered to be a choking hazard		P
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
22.15	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 and no undue wear of contacts		N/A
	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

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
22.18	Current-carrying parts and other metal parts resistant to corrosion		N/A
22.19	Driving belts not relied upon to provide the required level of insulation, unless		N/A
	constructed to prevent inappropriate replacement		N/A
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless		N/A
	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		P
	This requirement does not apply to magnesium oxide and mineral ceramic fibres used for the electrical insulation of heating elements		P
22.22	Appliances not containing asbestos		P
22.23	Oils containing polychlorinated biphenyl (PCB) not used		N/A
22.24	Bare heating elements, except in class III appliances or class III constructions that do not contain live parts, adequately supported		N/A
	In case of rupture, the heating conductor is unlikely to come in contact with accessible metal parts		N/A
22.25	Sagging heating conductors, except in class III appliances or class III constructions that do not contain live parts, cannot come into contact with accessible metal parts		N/A
22.26	For class III constructions the insulation between parts operating at safety extra-low voltage and other live parts complies with the requirements for double or reinforced insulation		P
	Hand-held parts of washable shavers shall be class III construction having a working voltage not exceeding 24 V. (IEC 60335-2-8)		P
	Hand-held parts of wet shavers shall be class III construction having a working voltage not exceeding 12 V, except when they are being charged when the working voltage shall not exceed 24 V. (IEC 60335-2-8)		N/A
	Compliance is checked by inspection and by measurement. (IEC 60335-2-8)		P
22.27	Parts connected by protective impedance separated by double or reinforced insulation		P

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
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
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		N/A
	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		N/A
	Neither clearances nor creepage distances between live parts and accessible parts reduced below values for supplementary insulation if wires, screws etc. become loose		N/A
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		N/A
	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
	Ceramic and similar porous 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, or		N/A
	unearthed metal parts separated from live parts by basic insulation only		N/A
	Electrodes not used for heating liquids		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	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
22.34	Shafts of operating knobs, handles, levers etc. not live, unless		P
	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		N/A
	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 and cordless 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
22.36	For appliances other than class III, handles continuously held in the hand in normal use so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless		N/A
	they are separated from live parts by double or reinforced insulation		N/A
	Hand-held parts shall be class II construction or class III construction. (IEC 60335-2-8)		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	For appliances having a rated voltage not exceeding 150 V, hand-held parts except those of washable shavers and wet shavers may be of class 0 constructions. (IEC 60335-2-8)		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
22.40	Animal shearers and animal clippers shall be fitted with a switch to control the motor. (IEC 60335-2-8)		P
22.41	No components, other than lamps, containing mercury		N/A
22.42	Protective impedance consisting of at least two separate components		P
	Values specified in 8.1.4 not exceeded if any one of the components are short-circuited or open-circuited		P
	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		P
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 29.1.3 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

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
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
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 is to 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	There is a control on the appliance 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
	These requirements not necessary on appliances that can operate as follows, without giving rise to a hazard:		N/A
	- continuously, or		N/A
	- automatically, or		N/A
	- 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
22.53	Class II appliances and class III appliances that incorporate functionally earthed parts have at least double insulation or reinforced insulation between live parts and the functionally earthed parts		N/A
22.54	Button cells and batteries designated R1 not accessible without the aid of a tool, unless		N/A
	the cover of their compartment can only be opened after at least two independent movements have been applied simultaneously		N/A
22.55	Devices operated to stop the intended function of the appliance, if any, are be distinguished from other manual devices by means of shape, size, surface texture or position .....:		N/A
	The requirement concerning position does not preclude use of a push on push off switch		N/A
	An indication when the device has been operated is given by:		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	– tactile feedback from the actuator or from the appliance, or		N/A
	– reduction in heat output; or		N/A
	– audible and visible feedback		N/A
22.56	Detachable power supply part provided with the part of class III construction		N/A
22.57	The properties of non-metallic materials do not degrade from exposure to UV-C radiation, as specified in Annex T		N/A
	This requirement does not apply to glass, ceramics or similar materials		N/A
22.101	Appliances shall not have openings that would allow small items to penetrate and touch live parts. (IEC 60335-2-8)		P
	Compliance is checked by inspection and by measuring the distance.		P
	This distance shall be at least 6 mm;		P
	If the appliance is fitted with legs, this distance is increased to 10 mm;		N/A
	If the appliance is intended to stand on a table and to 20 mm if it is intended to stand on the floor.		N/A
22.102	Shavers and hair clippers shall be constructed so that the penetration of clippings cannot give rise to electrical or mechanical faults. (IEC 60335-2-8)		P
22.103	Washable shavers and wet shavers, other than those classified IPX7, shall be constructed so that parts that are intended to be fixed can be fixed securely. (IEC 60335-2-8)		N/A
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		N/A
	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		N/A
	Flexible metallic tubes not causing damage to insulation of conductors		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	Open-coil springs not used		N/A
	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another		N/A
	No damage after 10 000 flexings for conductors flexed during normal use, or		N/A
	100 flexings for conductors flexed during user maintenance		N/A
	Electric strength test of 16.3, 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 subjected to the supply mains voltage withstanding the electrical stress likely to occur in normal use		N/A
	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
	For class II construction, the requirements for supplementary insulation and reinforced insulation apply,		P
	except that the sheath of a cord complying with IEC 60227 or IEC 60245 may provide supplementary insulation.		P
	A single layer of internal wiring insulation does not provide reinforced 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 only used for earthing conductors		N/A
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

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
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)		P
24	**COMPONENTS**		**P**
24.1	Components comply with safety requirements in relevant IEC standards		P
	List of components..... :	(see appended table)	P
	Motors not required to comply with IEC 60034-1, they are tested as part of the appliance		P
	Relays tested as part of the appliance, or		N/A
	alternatively acc. to IEC 60730-1, and meeting the additional requirements in IEC 60335-1		N/A
	The requirements of Clause 29 apply between live parts of components and accessible parts of the appliance		P
	Components can comply with the requirements for clearances and creepage distances for functional insulation in the relevant component standard		P
	30.2 of this standard apply to parts of non-metallic material in components including parts of non-metallic material supporting current-carrying connections		P
	Components that have not been previously tested to comply with the IEC standard for the relevant component are tested according to the requirements of 30.2		P
	Components that have been previously tested to comply with the resistance to fire requirements in the IEC standard for the relevant component need not be retested provided the specified conditions are met		PP
	If these conditions are not satisfied, the component is tested as part of the appliance.		P
	Power electronic converter circuits not required to comply with IEC 62477-1, they are tested as part of the appliance		N/A
	If components have not been tested and found to comply with relevant IEC standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	For components mentioned in 24.1.1 to 24.1.9 no additional tests specified in the relevant component standard are necessary other than those specified in 24.1.1 to 24.1.9		P
	Components not tested and found to comply with relevant IEC standard and components not marked or not used in accordance with its marking, tested under the conditions occurring in the appliance		P
	Lampholders and starterholders that have 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, comply with IEC 60384-14		P
	If the capacitors have to be tested, they are tested according to Annex F		N/A
24.1.2	Transformers in associated switch mode power supplies comply with Annex BB of IEC 61558-2-16	Approved adaptor.	P
	Safety isolating transformers comply with IEC 61558-2-6		P
	If they have to be tested, they are tested according to Annex G		P
24.1.3	Switches comply with IEC 61058-1, the number of cycles of operation being at least 10 000		P
	If they have to be tested, they are tested according to Annex H		P
	If the switch operates a relay or contactor, the complete switching system is subjected to the test		P
	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		P
	Switches incorporated in animal clippers and animal shearers, and hair clippers for hairdressers, shall be tested for 50 000 cycles of operation. (IEC 60335-2-8)		P

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	For switches incorporated in hair clippers intended for household use only, the number of cycles of operation declared for subclause 7.1.4 of IEC 61058-1 shall be at least 3 000. (IEC 60335-2-8)		N/A
	For switches incorporated in shavers intended for household use only, the number of cycles of operation declared for subclause 7.1.4 of IEC 61058-1 shall be at least 6 000. (IEC 60335-2-8)		P
24.1.4	Automatic controls comply with IEC 60730-1 with the relevant part 2. The number of cycles of operation being at least:		N/A
	- thermostats: 10 000		N/A
	- temperature limiters: 1 000		N/A
	- self-resetting thermal cut-outs: 300		N/A
	- voltage maintained non-self-resetting thermal cut-outs: 1 000		N/A
	- other non-self-resetting thermal cut-outs: 30		N/A
	- timers: 3 000		N/A
	- energy regulators: 10 000		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
	Thermal cut-outs of the capillary type comply with the requirements for type 2.K controls in IEC 60730-2-9		N/A
24.1.5	Appliance couplers comply with IEC 60320-1		P
	However, for class II appliances classified higher than IPX0, the appliance couplers comply with IEC 60320-2-3		N/A
	Interconnection couplers comply with IEC 60320-2-2		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
24.1.6	Small lamp holders similar to E10 lampholders comply with IEC 60238, the requirements for E10 lampholders being applicable		N/A
24.1.7	For remote operation of the appliance 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		N/A
	Thermal links not complying with IEC 60691 are considered to be an intentionally weak part for the purposes of Clause 19		N/A
24.1.9	Contactors and relays, other than motor starting relays, tested as part of the appliance		N/A
	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 ..... :		N/A
24.2	Appliances not fitted with:		P
	- switches,automatic controls or power supplies 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		N/A
	the solder has a melding point of at least 230 ˚C		N/A
24.3	Switches intended for all-pole disconnection of stationary appliances are directly connected to the supply terminals and have 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		P
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

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
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 42 V		N/A
	In addition, the motors comply 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 S2 or S3 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
25	**SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS**		P
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:		P
	- supply cord fitted with a plug, the current rating and voltage rating of the plug being not less than the corresponding ratings of its associated appliance		N/A
	- an appliance inlet having at least the same degree of protection against moisture as required for the appliance, or		N/A
	- pins for insertion into socket-outlets		P
25.2	Appliance not provided with more than one means of connection to the supply mains		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	Stationary appliance for multiple supply may be provided with more than one means of connection, provided electric strength test of 1250 V for 1 min between each means of connection causes no breakdown		N/A
25.3	Appliance intended to be permanently connected to fixed wiring provided with one of the following means for connection to the supply mains:		N/A
	- a set of terminals allowing the connection of a flexible cord		N/A
	- a fitted supply cord		N/A
	- a set of supply leads accommodated in a suitable compartment		N/A
	- a set of terminals for the connection of cables of fixed wiring, cross-sectional areas specified in 26.6, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A
	- a set of terminals and cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate types of cable or conduit, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A
	For a fixed appliance constructed so that parts can be removed to facilitate easy installation, this requirement is met if it is possible to connect the fixed wiring without difficulty after a part of the appliance has been fixed to its support		N/A
25.4	Cable and conduit entries, rated current of appliance not exceeding 16 A, dimension according to table 10 (mm)..... :		N/A
	Introduction of conduit or cable does not reduce clearances or creepage distances below values specified in clause 29		N/A
25.5	Method for assembling the supply cord to the appliance:		N/A
	- type X attachment		N/A
	- type Y attachment		N/A
	- Type Z attachment is allowed for appliances intended for household use only. (IEC 60335-2-8)		N/A
	Type X attachments are not allowed on appliances with an IP classification exceeding IPX4. (IEC 60335-2-8)		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	For multi-phase appliances supplied with a supply cord and that are intended to be permanently connected to fixed wiring, the supply cord is assembled to the appliance by type Y attachment		N/A
25.6	Plugs fitted with only one flexible cord		N/A
25.7	Supply cords, other than for class III appliances, being one of the following types:		N/A
	- rubber sheathed (at least 60245 IEC 53)		N/A
	- polychloroprene sheathed (at least 60245 IEC 57)		N/A
	- polyvinyl chloride sheathed. Not used if they are likely to touch metal parts having a temperature rise exceeding 75 K during the test of clause 11		N/A
	• light polyvinyl chloride sheathed cord (60227 IEC 52), for appliances not exceeding 3 kg		N/A
	• ordinary polyvinyl chloride sheathed cord (60227 IEC 53), for other appliances		N/A
	- heat resistant polyvinyl chloride sheathed. Not used for type X attachment other than specially prepared cords		N/A
	• heat-resistant light polyvinyl chloride sheathed cord (60227 IEC 56), for appliances not exceeding 3 kg		N/A
	• heat-resistant polyvinyl chloride sheathed cord (60227 IEC 57), for other appliances		N/A
	- halogen-free, low smoke, thermoplastic insulated and sheathed		N/A
	• light duty halogen-free low smoke flexible cable (62821 IEC 101) for circular cable and (62821 IEC 101f) for flat cable		N/A
	• Ordinary duty halogen-free low smoke flexible cable (62821 IEC 102) for circular cable and (62821 IEC 102f(for flat cable		N/A
	Supply cords for class III appliances adequately insulated		N/A
	Test with 500 V for 2 min for supply cords of class III appliances that contain live parts		N/A
	Flat twin tinsel cord is allowed for appliances intended for household use only as long as they are fitted with a non-rewirable plug. (IEC 60335-2-8)		N/A
	Rubber insulated supply cords of animal shearers shall be polychloroprene sheathed and not be lighter than ordinary polychloroprene sheathed flexible cord (code designation 60245 IEC 57). (IEC 60335-2-8)		N/A
	This requirement is not applicable to the supply cord on the battery charging unit for shavers for household use only. (IEC 60335-2-8)		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	Supply cords shall have a length of at least 1,7 m. (IEC 60335-2-8)		N/A
	This requirement is not applicable to supply cords on battery charging units (IEC 60335-2-8)		N/A
25.8	Nominal cross-sectional area of supply cords not less than table 11; rated current (A); cross-sectional area (mm^2) ..... :		N/A
25.9	Supply cords not in contact with sharp points or edges		N/A
25.10	Supply cord of class I appliances have a green/yellow core for earthing		N/A
	In multi-phase appliances, the colour of the neutral conductor of the supply cord is blue.		N/A
	Where additional neutral conductors are provided in the supply cord:		N/A
	– other colours may be used for these additional neutral conductors;		N/A
	– all of the neutral conductors and line conductors are identified by marking using the alpha numeric notation specified in IEC 60445		N/A
	– the supply cord is fitted to the appliance		N/A
25.11	Conductors of supply cords not consolidated by soldering where they are subject to contact pressure, unless		N/A
	the contact pressure is provided by spring terminals		N/A
25.12	Insulation of the supply cord not damaged when moulding the cord to part of the enclosure		N/A
25.13	Inlet openings so constructed as to prevent damage to the supply cord		N/A
	If it is not evident that the supply cord can be introduced without risk of damage, a non-detachable lining or bushing complying with 29.3 for supplementary insulation provided		N/A
	If unsheathed supply cord, a similar additional bushing or lining is required, unless the appliance is		N/A
	class 0, or		N/A
	a class III appliance not containing live parts		N/A
25.14	Supply cords moved while in operation adequately protected against excessive flexing		N/A
	Flexing test, as described:		N/A
	- applied force (N) ..... :		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	- number of flexings .... :		N/A
	The test does not result in:		N/A
	- short-circuit between the conductors, such that the current exceeds a value of twice the rated current		N/A
	- breakage of more than 10% of the strands of any conductor		N/A
	- separation of the conductor from its terminal		N/A
	- loosening of any cord guard		
	- damage to the cord or the cord guard		N/A
	- broken strands piercing the insulation and becoming accessible		N/A
	The number of flexings for type Z attachment is 100 000 and for other attachments 50 000. (IEC 60335-2-8)		N/A
25.15	For appliances with supply cord and appliances to be permanently connected to fixed wiring by a flexible cord, conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorage		N/A
	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged		N/A
	Pull and torque test of supply cord:		N/A
	- fixed appliances: pull 100 N; torque (not on automatic cord reel) (Nm) ..... :		N/A
	- other appliances: values shown in table 12: mass (kg); pull (N); torque (not on automatic cord reel) (Nm) ..... :		N/A
	Pull and torque test of supply cord, values shown in table 12: mass (kg); pull (N); torque (not on automatic cord reel) (Nm) ..... :		N/A
	Cord not damaged and max. 2 mm displacement of the cord		N/A
25.16	Cord anchorages for type X attachments constructed and located so that:		N/A
	- replacement of the cord is easily possible		N/A
	- it is clear how the relief from strain and the prevention of twisting are obtained		N/A
	- they are suitable for different types of supply cord		N/A
	- cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	they are separated from accessible metal parts by supplementary insulation		N/A
	- the cord is not clamped by a metal screw which bears directly on the cord		N/A
	- at least one part of the cord anchorage securely fixed to the appliance, unless		N/A
	it is part of a specially prepared cord		N/A
	- screws which have to be operated when replacing the cord do not fix any other component, unless		N/A
	the appliance becomes inoperative or incomplete or the parts cannot be removed without a tool		N/A
	- if labyrinths can be bypassed the test of 25.15 is nevertheless withstood		N/A
	- for class 0, 0I and I appliances they are of insulating material or are provided with an insulating lining, unless		N/A
	failure of the insulation of the cord does not make accessible metal parts live		N/A
	- for class II appliances they are of insulating material, or		N/A
	if of metal, they are insulated from accessible metal parts by supplementary insulation		N/A
	After the test of 25.15, under the conditions specified, the conductors have not moved by more than 1 mm in the terminals		N/A
25.17	Adequate cord anchorages for type Y and Z attachment, test with the cord supplied with the appliance		N/A
25.18	Cord anchorages only accessible with the aid of a tool, or		N/A
	Constructed so that the cord can only be fitted with the aid of a tool		N/A
25.19	Type X attachment, glands not used as cord anchorage in portable appliances		N/A
	Tying the cord into a knot or tying the cord with string not used		N/A
25.20	The conductors of the supply cord for type Y and Z attachment insulated from accessible metal parts		N/A
25.21	Space for supply cord for type X attachment or for connection of fixed wiring constructed:		N/A
	- to permit checking of conductors with respect to correct positioning and connection before fitting any cover		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	- so there is no risk of damage to the conductors or their insulation when fitting the cover		N/A
	- for portable appliances, so that the uninsulated end of a conductor, if it becomes free from the terminal, prevented from contact with accessible metal parts		N/A
	2 N test to the conductor for portable appliances; no contact with accessible metal parts		N/A
25.22	Appliance inlets:		N/A
	- live parts not accessible during insertion or removal		N/A
	Requirement not applicable to appliance inlets complying with IEC 60320-1		N/A
	- connector can be inserted without difficulty		N/A
	- the appliance is not supported by the connector		N/A
	- not for cold conditions if temp. rise of external metal parts exceeds 75 K during clause 11, unless		N/A
	the supply cord is unlikely to touch such metal parts		N/A
25.23	Interconnection cords comply with the requirements for the supply cord, except that:		N/A
	- the cross-sectional area of the conductors is determined on the basis of the maximum current during clause 11		N/A
	- the thickness of the insulation may be reduced		N/A
	- for class I or class II appliance with class III construction, the cross sectional areas of the conductors need not comply with 25.8 if specified conditions are met		N/A
	If necessary, electric strength test of 16.3		N/A
25.24	Interconnection cords not detachable without the aid of a tool if compliance with this standard is impaired when they are disconnected		N/A
	Interconnection cords of washable shavers shall be detachable. (IEC 60335-2-8)		N/A
	Wet shavers shall not have an interconnection cord unless they cannot be operated when connected to the supply mains. (IEC 60335-2-8)		N/A
25.25	Dimensions of pins that are inserted into socket-outlets compatible with the dimensions of the relevant socket-outlet.		N/A
	Dimensions of pins and engagement face in accordance with the dimensions of the relevant plug in IEC/TR 60083		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
26	**TERMINALS FOR EXTERNAL CONDUCTORS**		N/A
26.1	Appliances provided with terminals or equally effective devices for connection of external conductors		N/A
	Terminals only accessible after removal of a non-detachable cover, except		N/A
	for class III appliances that do not contain live parts		N/A
	Earthing terminals may be accessible if a tool is required to make the connections and means are provided to clamp the wire independently from its connection		N/A
26.2	Appliances with type X attachment and appliances for the connection of cables of fixed wiring provided with terminals in which connections are made by means of screws, nuts or similar devices, unless		N/A
	the connections are soldered		N/A
	Screws and nuts not used to fix any other component, except		N/A
	internal conductors, if so arranged that they are unlikely to be displaced when fitting the supply conductors		N/A
	If soldered connections used, the conductor so positioned or fixed that reliance is not placed on soldering alone, unless		N/A
	barriers provided so that neither clearances nor creepage distances between live parts and other metal parts reduced below the values for supplementary insulation if the conductor becomes free at the soldered joint		N/A
26.3	Terminals for type X attachment and for connection of cables of fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure but without damaging the conductor		N/A
	Terminals fixed so that when the clamping means is tightened or loosened:		N/A
	- the terminal does not become loose		N/A
	- internal wiring is not subjected to stress		N/A
	- neither clearances nor creepage distances are reduced below the values in clause 29		N/A
	Compliance checked by inspection and by the test of subclause 9.6 of IEC 60999-1, the torque applied being equal to two-thirds of the torque specified (Nm) ..... :		N/A
	No deep or sharp indentations of the conductors		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
26.4	Terminals for type X attachment, except those having a specially prepared cord and those for the connection of cables of fixed wiring, no special preparation of conductors such as by soldering, use of cable lugs, eyelets or similar, and		N/A
	so constructed or placed that conductors prevented from slipping out when clamping screws or nuts are tightened		N/A
26.5	Terminals for type X attachment so located or shielded that if a wire of a stranded conductor escapes, no risk of accidental connection to other parts that result in a hazard		N/A
	Stranded conductor test, 8 mm insulation removed		N/A
	No contact between live parts and accessible metal parts and,		N/A
	for class II constructions, between live parts and metal parts separated from accessible metal parts by supplementary insulation only		N/A
26.6	Terminals for type X attachment and for connection of cables of fixed wiring suitable for connection of conductors with cross-sectional area according to table 13; rated current (A); nominal cross-sectional area (mm^2) ..... :		N/A
	If a specially prepared cord is used, terminals need only be suitable for that cord		N/A
26.7	Terminals for type X attachment, except in class III appliances not containing live parts, accessible after removal of a cover or part of the enclosure		N/A
26.8	Terminals for the connection of fixed wiring, including the earthing terminal, located close to each other		N/A
26.9	Terminals of the pillar type constructed and located as specified		N/A
26.10	Terminals with screw clamping and screwless terminals not used for flat twin tinsel cords, unless		N/A
	conductors ends fitted with means suitable for screw terminals		N/A
	Pull test of 5 N to the connection		N/A
26.11	For type Y and Z attachment, soldered, welded, crimped or similar connections may be used		N/A
	For Class II appliances, the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	If soldering, welding or crimping alone used, barriers provided so that clearances and creepage distances between live parts and other metal parts are not reduced below the values for supplementary insulation if the conductor becomes free		N/A
27	**PROVISION FOR EARTHING**		N/A
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		N/A
	Earthing terminals and earthing contacts not connected to the neutral terminal		N/A
	Class 0, II and III appliances have no provision for protective earthing		N/A
	Class II appliances and class III appliances can incorporate an earth for functional purposes		N/A
	Safety extra-low voltage circuits not earthed, unless		N/A
	protective extra-low voltage circuits		N/A
27.2	Clamping means of earthing terminals adequately secured against accidental loosening		N/A
	Terminals 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, and		N/A
	- conductors cannot be loosened without the aid of a tool		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
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		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
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		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	Parts providing earthing continuity, other than parts of a metal frame or enclosure, have adequate resistance to corrosion		N/A
	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		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
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
27.5	Low resistance of connection between earthing terminal and earthed metal parts		N/A
	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
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
	Resistance not exceeding 0,1 Ω at the specified low-resistance test (Ω) ..... :		N/A
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
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
28	**SCREWS AND CONNECTIONS**		**P**
28.1	Fixings, electrical connections and connections providing earthing continuity withstand mechanical stresses	Only for fixing	P
	Screws not of soft metal liable to creep, such as zinc or aluminium		P
	Diameter of screws of insulating material min. 3 mm		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	Screws of insulating material not used for any electrical connections or connections providing earthing continuity		N/A
	Screws used for electrical connections or connections providing earthing continuity screwed into metal		N/A
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation		N/A
	For type X attachment, screws to be removed for replacement of supply cord or for user maintenance, not of insulating material if their replacement by a metal screw impairs basic insulation		N/A
	For screws and nuts; torque-test as specified in table 14 ..... :	(see appended table)	P
28.2	Electrical connections and connections providing earthing continuity constructed so that contact pressure is not transmitted through non-ceramic insulating material liable to shrink or distort, unless		P
	there is resiliency in the metallic parts to compensate for shrinkage or distortion of the insulating material		N/A
	This requirement does not apply to electrical connections in circuits of appliances for which:		N/A
	• 30.2.2 is applicable and that carry a current not exceeding 0,5 A		N/A
	• 30.2.3 is applicable and that carry a current not exceeding 0,2 A		N/A
28.3	Space-threaded (sheet metal) screws only used for electrical connections if they clamp the parts together		N/A
	Thread-cutting (self-tapping) screws and thread rolling screws only used for electrical connections if they generate a full form standard machine screw thread		N/A
	Thread-cutting (self-tapping) screws not used if they are likely to be operated by the user or installer		N/A
	Thread-cutting, thread rolling and space threaded screws may be used in connections providing earthing continuity provided it is not necessary to disturb the connection:		N/A
	- in normal use,		N/A
	- during user maintenance,		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	- when replacing a supply cord having a type X attachment, or		N/A
	- during installation		N/A
	At least two screws being used for each connection providing earthing continuity, unless		N/A
	the screw forms a thread having a length of at least half the diameter of the screw		N/A
28.4	Screws and nuts that make mechanical connection secured against loosening if they also make electrical connections or connections providing earthing continuity		N/A
	This requirement does not apply to screws in the earthing circuit if at least two screws are used, or		N/A
	if an alternative earthing circuit is provided		N/A
	Rivets for electrical connections or connections providing earthing continuity secured against loosening if the connections are subjected to torsion		N/A
29	**CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION**		**P**
	Clearances, creepage distances and solid insulation withstand electrical stress		P
	For coatings used on printed circuits boards to protect the microenvironment (Type 1) or to provide basic insulation (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		P
	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		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	For appliances intended for use at altitudes exceeding 2 000 m, the clearances in Table 16 is increased according to the relevant multiplier values in Table A.2 of IEC 60664-1		N/A
	Impulse voltage test is not applicable:		N/A
	- when the microenvironment is pollution degree 3, or		N/A
	- for basic insulation of class 0 and class 01 appliances, or		N/A
	- to appliances intended for use at altitudes exceeding 2 000 m		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		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 ..... :	(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

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
	the distances can be affected by wear, distortion, movement of the parts or during assembly		N/A
	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		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:		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 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

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	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		P
	- precautions taken to protect the insulation; pollution degree 1		N/A
	- insulation subjected to conductive pollution; pollution degree 3		N/A
	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
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 ..... :		P
	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 ..... :		P
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 ..... :		P
29.2.4	Creepage distances of functional insulation not less than specified in table 18 ..... :	(see appended table)	P

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
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 18..... :		P
	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
	- by measurement, in accordance with 29.3.1, or		P
	- by an electric strength test in accordance with 29.3.2, or		N/A
	- for insulation, other than single layer internal wiring insulation, 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
	- by an assessment of the thermal quality of the material according to 29.3.3 combined with an electric strength test in accordance with 23.5, for each single layer internal wiring insulation touching each other, 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 have a thickness of at least 1 mm		P
	Reinforced insulation have a thickness of at least 2 mm		P
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation		P
	Supplementary insulation consist of at least 2 layers		N/A
	Reinforced insulation consist of at least 3 layers		P
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

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	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
30	**RESISTANCE TO HEAT AND FIRE**		**P**
30.1	External parts of non-metallic material,		P
	parts supporting live parts, and		P
	parts of thermoplastic material providing supplementary or reinforced insulation		P
	sufficiently resistant to heat		P
	Ball-pressure test according to IEC 60695-10-2		P
	External parts tested at 40 °C plus the maximum temperature rise determined during the test of clause 11, or at 75 °C, whichever is the higher; temperature (°C) ..... :	(see appended table 30.1)	P
	Parts supporting live parts tested at 40°C plus the maximum temperature rise determined during the test of clause 11, or at 125 °C, whichever is the higher; temperature (°C) ..... :	(see appended table 30.1)	N/A
	Parts of thermoplastic material providing supplementary or reinforced insulation tested at 25 °C plus the maximum temperature rise determined during clause 19, if higher; temperature (°C) ..... :	(see appended table 30.1)	N/A
30.2	Parts of non-metallic material resistant to ignition and spread of fire		P
	This requirement does not apply to:		N/A
	parts having a mass not exceeding 0,5 g, provided the cumulative effect is unlikely to propagate flames that originate inside the appliance by propagating flames from one part to another, or		N/A
	decorative trims, knobs and other parts unlikely to be ignited or to propagate flames that originate inside the appliance		N/A
	Compliance checked by the test of 30.2.1, and in addition:		P
	- for attended appliances, 30.2.2 applies		P
	- for unattended appliances, 30.2.3 applies		N/A
	For appliances for remote operation, 30.2.3 applies		N/A
	For base material of printed circuit boards, 30.2.4 applies		P

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
30.2.1	Parts of non-metallic material subjected to the glow-wire test of IEC 60695-2-11 at 550°C	(see appended table 30.2)	P
	However, test not carried out if the material is classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 550 °C, or		N/A
	the material is classified at least HB40 according to IEC 60695-11-10		N/A
	Parts for which the glow-wire test cannot be carried out need to meet the requirements in ISO 9772 for material classified HBF		N/A
30.2.2	Appliances operated while attended, parts of non-metallic material supporting current-carrying connections, and		P
	parts of non-metallic material within a distance of 3mm of such connections,		P
	subjected to the glow-wire test of IEC 60695-2-11 with appropriate severity level:	(see appended table 30.2)	P
	- 750 °C, for connections carrying a current exceeding 0,5 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	The glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least:		N/A
	- 750 °C, for connections carrying a current exceeding 0,5 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	The glow-wire test is also not carried out on small parts. These parts are to:		N/A
	- comprise material having a glow-wire flammability index of at least 750 °C, or 650 °C as appropriate, or		N/A
	- comply with the needle-flame test of Annex E, or	(see appended table 30.2/30.4)	N/A
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10..... :		N/A
	Glow-wire test not applicable to conditions as specified..... :		N/A
30.2.3	Not applicable. (IEC 60335-2-8)		N/A
30.2.3.1	Parts of non-metallic material supporting connections carrying a current exceeding 0,2 A during normal operation, and		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	parts of non-metallic material, other than small parts, within a distance of 3 mm,		N/A
	subjected to the glow-wire test of IEC 60695-2-11 with a test severity of 850 °C	(see appended table 30.2)	N/A
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	The glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 850 °C		N/A
30.2.3.2	Parts of non-metallic material supporting connections, and		N/A
	parts of non-metallic material within a distance of 3mm,		N/A
	subjected to the glow-wire test of IEC 60695-2-11 with appropriate severity level:	(see appended table 30.2)	N/A
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	However, the glow-wire test of 750 °C or 650 °C as appropriate, is not carried out on parts of material fulfilling both or either of the following classifications:		N/A
	- a glow-wire ignition temperature according to IEC 60695-2-13 of at least:		N/A
	• 775 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	• 675 °C, for other connections		N/A
	- a glow-wire flammability index according to IEC 60695-2-12 of at least:		N/A
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	The glow-wire test is also not carried out on small parts. These parts are to:		N/A
	- comprise material having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- comprise material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- comply with the needle-flame test of Annex E, or		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
	The consequential needle-flame test of Annex E applied to non-metallic parts that encroach within the vertical cylinder placed above the centre of the connection zone and on top of the non-metallic parts supporting current-carrying connections, and parts of non-metallic material within a distance of 3 mm of such connections if these parts are those:		N/A
	- parts that withstood the glow-wire test of IEC 60695-2-11 of 750 °C or 650 °C as appropriate, but produce a flame that persist longer than 2 s, or		N/A
	- parts that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- small parts, that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- small parts for which the needle-flame test of Annex E was applied, or		N/A
	- small parts for which a material classification of V-0 or V-1 was applied		N/A
	However, the consequential needle-flame test is not carried out on non-metallic parts, including small parts, within the cylinder that are:		N/A
	- parts having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- parts comprising material classified as V-0 or V-1 according to IEC 60695-11-10, or		N/A
	- parts shielded by a flame barrier that meets the needle-flame test of Annex E or that comprises material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
30.2.4	Base material of printed circuit boards subjected to the needle-flame test of Annex E	(see appended table 30.2/30.4)	P
	Test not applicable to conditions as specified ..... :		P
31	**RESISTANCE TO RUSTING**		**P**
	Relevant ferrous parts adequately protected against rusting		P
	Tests specified in part 2 when necessary		P
32	**RADIATION, TOXICITY AND SIMILAR HAZARDS**		**P**
	Appliance does not emit harmful radiation or present a toxic or similar hazard due to their operation in normal use		P
	Compliance is checked by the limits or tests specified in part 2, if relevant		P

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
A	**ANNEX A (INFORMATIVE) ROUTINE TESTS**		N/A
	Description of routine tests to be carried out by the manufacturer		N/A
B	**ANNEX B (NORMATIVE) APPLIANCES POWERED BY RECHARGEABLE BATTERIES THAT ARE RECHARGED IN THE APPLIANCE**		N/A
	The following modifications to this standard are applicable for appliances powered by batteries that are recharged in the appliance		N/A
	Three forms of construction covered:		N/A
	a) Appliance supplied directly from the supply mains or a renewable energy source, the battery charging circuitry and other supply unit circuitry incorporated within the appliance		N/A
	b) The part of the appliance incorporating the battery is supplied from the supply mains or a renewable energy source, via a detachable supply unit. The battery charging circuitry is incorporated within the part of the appliance containing the battery		N/A
	c) The part of the appliance incorporating the battery is supplied from the supply mains or a renewable energy source, via a detachable supply unit. The battery charging circuitry is incorporated within the detachable supply unit		N/A
3.1.9	Appliance operated under the following conditions:		N/A
	- the appliance, supplied by its fully charged battery, operated as specified in relevant part 2		N/A
	- the battery is charged, the battery being initially discharged to such an extent that the appliance cannot operate		N/A
	-if possible, the appliance is supplied from the supply mains through its battery charger, the battery being initially discharged to such an extent that the appliance cannot operate. The appliance is operated as specified in relevant part 2		N/A
	- if the appliance incorporates inductive coupling between two parts that are detachable from each other, the appliance is supplied from the supply mains with the detachable part removed		N/A
3.6.2	Part to be removed in order to discard the battery is not considered to be detachable		N/A
5.B.101	Appliances supplied from the supply mains tested as specified for motor-operated appliances		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
7.1	Battery compartment for batteries intended to be replaced by the user, marked with battery voltage (V) and polarity of the terminals..... .....:		N/A
	The positive terminal indicated by symbol IEC 60417-5005 and the negative terminal by symbol IEC 60417-5006		N/A
	Appliances intending to be supplied from a detachable supply unit marked with symbol IEC 60417-6181 and its type reference along with symbol ISO 7000-0790 (2004-01), or		N/A
	use only with <model designation> supply unit ... .:		N/A
7.6	Additional symbols		N/A
7.12	The instructions give information regarding charging		N/A
	Instructions for appliances incorporating batteries intended to be replaced by the user include required information		N/A
	Instructions for appliances containing non user-replaceable batteries state the substance of the following:		N/A
	This appliance contains batteries that are only replaceable by skilled persons		N/A
	Instructions for appliances containing non-replaceable batteries shall state the substance of the following:		N/A
	This appliance contains batteries that are non-replaceable		N/A
	For appliances intending to be supplied from a detachable supply unit for the purposes of recharging the battery, the type reference of the detachable supply unit is stated along with the following:		N/A
	WARNING: For the purposes of recharging the battery, only use the detachable supply unit provided with this appliance		N/A
	If the symbol for detachable supply unit is used, its meaning is explained		N/A
7.15	Markings placed on the part of the appliance connected to the supply mains		N/A
	The type reference of the detachable supply unit is placed in close proximity to the symbol		N/A
8.2	Appliances having batteries that according to the instruction may be replaced by the user need only have basic insulation between live parts and the inner surface of the battery compartment		N/A
	If the appliance can be operated without batteries, double or reinforced insulation required		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
11.7	The battery is charged for the period stated in the instructions or 24 h ..... :		N/A
11.8	Temperature rise of the battery surface does not exceed the limit in the battery manufacturer's specification; measured (K); limit (K)..... :		N/A
	If no limit specified, the temperature rise does not exceed 20 K; measured (K) ..... :		N/A
19.1	Appliances subjected to tests of 19.B.101, 19.B.102 and 19.B.103		N/A
19.10	Not applicable		N/A
19.B.101	Appliances supplied at rated voltage for 168 h, the battery being continually charged		N/A
19.B.102	For appliances having batteries that can be removed without the aid of a tool, short-circuit of the terminals of the battery, the battery being fully charged,		N/A
19.B.103	Appliances having batteries replaceable by the user supplied at rated voltage under normal operation with the battery removed or in any position allowed by the construction		N/A
19.13	The battery does not rupture or ignite		N/A
21.B.101	Appliances having pins for insertion into socket-outlets have adequate mechanical strength		N/A
	Part of the appliance incorporating the pins subjected to the free fall test, procedure 2, of IEC 60068-2-31, the number of falls being:		N/A
	- 100, if the mass of the part does not exceed 250 g (g)..... :		N/A
	- 50, if the mass of the part exceeds 250 g ..... :		N/A
	After the test, the requirements of 8.1, 15.1.1, 16.3 and clause 29 are met		N/A
22.3	Appliances having pins for insertion into socket-outlets tested as fully assembled as possible		N/A
25.13	An additional lining or bushing not required for interconnection cords in class III appliances or class III constructions operating at safety extra-low voltage not containing live parts		N/A
30.2	For parts of the appliance connected to the supply mains during the charging period, 30.2.3 applies		N/A
	For other parts, 30.2.2 applies		N/A
C	**ANNEX C (NORMATIVE) AGEING TEST ON MOTORS**		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	Tests, as described, carried out when doubt with regard to the temperature classification of the insulation of a motor winding		N/A
	Test conditions as specified		N/A
	The value of p in Table C.1 is (IEC 60335-2-8) – 500 for appliances intended for household use only; – 2 000 for other appliances.		N/A
D	**ANNEX D (NORMATIVE) THERMAL MOTOR PROTECTORS**		N/A
	Applicable to appliances having motors that incorporate thermal motor protectors necessary for compliance with the standard		N/A
	Test conditions as specified		N/A
E	**ANNEX E (NORMATIVE) NEEDLE-FLAME TEST**		**P**
	Needle-flame test carried out in accordance with IEC 60695-11-5, with the following modifications:		P
7	Severities		P
	The duration of application of the test flame is 30 s ± 1 s		P
9	Test procedure		P
9.1	The specimen so arranged that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1		P
9.2	The first paragraph does not apply		P
	If possible, the flame is applied at least 10 mm from a corner		P
9.3	The test is carried out on one specimen		P
	If the specimen does not withstand the test, the test may be repeated on two additional specimens, both withstanding the test		N/A
11	Evaluation of test results		P
	The duration of burning not exceeding 30 s		N/A
	However, for printed circuit boards, the duration of burning not exceeding 15 s		P
F	**ANNEX F (NORMATIVE) CAPACITORS**		N/A
	Capacitors likely to be permanently subjected to the supply voltage, and used for radio interference suppression or voltage dividing, comply with the following clauses of IEC 60384-14, with the following modifications:		N/A
1.5	Terms and definitions		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.3	Class X capacitors tested according to subclass X2		N/A
1.5.4	This subclause is applicable		N/A
1.6	Marking		N/A
	Items a) and b) are applicable		N/A
3.4	Approval testing		N/A
3.4.3.2	Table 3 is applicable as described		N/A
4.1	Visual examination and check of dimensions		N/A
	This subclause is applicable		N/A
4.2	Electrical tests		N/A
4.2.1	This subclause is applicable		N/A
4.2.5	This subclause is applicable		N/A
4.2.5.2	Only table 11 is applicable		N/A
	Values for test A apply		N/A
	However, for capacitors in heating appliances the values for test B or C apply		N/A
4.12	Damp heat, steady state		N/A
	This subclause is applicable		N/A
	Only insulation resistance and voltage proof are checked		N/A
4.13	Impulse voltage		N/A
	This subclause is applicable		N/A
4.14	Endurance		N/A
	Subclauses 4.14.1, 4.14.3, 4.14.4 and 4.14.7 are applicable		N/A
4.14.7	Only insulation resistance and voltage proof are checked		N/A
	No visible damage		N/A
4.17	Passive flammability test		N/A
	This subclause is applicable		N/A
4.18	Active flammability test		N/A
	This subclause is applicable		N/A
G	**ANNEX G (NORMATIVE)** **SAFETY ISOLATING TRANSFORMERS**		N/A
	The following modifications to this standard are applicable for safety isolating transformers:		N/A
7	Marking and instructions		N/A
7.1	Transformers for specific use marked with:		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	-name, trademark or identification mark of the manufacturer or responsible vendor..... :		N/A
	-model or type reference ..... :		N/A
17	Overload protection of transformers and associated circuits		N/A
	Fail-safe transformers comply with subclause 15.5 of IEC 61558-1		N/A
22	Construction		N/A
	Subclauses 19.1 and 19.1.2 of IEC 61558-2-6 are applicable		N/A
29	Clearances, creepage distances and solid insulation		N/A
29.1, 29.2, 29.3	The distances specified in items 2a, 2c and 3 in table 13 of IEC 61558-1 apply		N/A
	For insulated winding wires complying with subclause 19.12.3 of IEC 61558-1 there are no requirements for clearances or creepage distances		N/A
	For windings providing reinforced insulation, the distance specified in item 2c of table 13 of IEC 61558-1 is not assessed		N/A
	For safety isolating transformers subjected to periodic voltages with a frequency exceeding 30 kHz, the clearances, creepage distances and solid insulation values specified in IEC 60664-4 are applicable, if greater than the values specified in items 2a, 2c and 3 in table 13 of IEC 61558-1		N/A
H	**ANNEX H (NORMATIVE) SWITCHES**		N/A
	Switches comply with the following clauses of IEC 61058-1, as modified below:		N/A
	The tests of IEC 61058-1 carried out under the conditions occurring in the appliance		N/A
	Before being tested, switches are operated 20 times without load		N/A
8	Marking and documentation		N/A
	Switches are not required to be marked		N/A
	However, a switch that can be tested separately from the appliance marked with the manufacturer's name or trade mark and the type reference		N/A
13	Mechanism		N/A
	The tests may be carried out on a separate sample		N/A
15	Insulation resistance and dielectric strength		N/A
15.1	Not applicable		N/A
15.2	Not applicable		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
15.3	Applicable for full disconnection and micro-disconnection		N/A
17	Endurance		N/A
	Compliance is checked on three separate appliances or switches		N/A
	For 17.2.4.4, the number of cycles declared according to 7.1.4 is 10 000, unless		N/A
	otherwise specified in 24.1.3 of the relevant part 2 of IEC 60335..... :		N/A
	Switches for operation under no load and which can be operated only by a tool, and		N/A
	switches operated by hand that are interlocked so that they cannot be operated under load,		N/A
	are not subjected to the tests		N/A
	However, switches without this interlock are subjected to the test of 17.2.4.4 for 100 cycles of operation		N/A
	Subclauses 17.2.2 and 17.2.5.2 not applicable		N/A
	The ambient temperature during the test is that occurring in the appliance during the test of Clause 11 in IEC 60335-1		N/A
	The temperature rise of the terminals not more than 30 K above the temperature rise measured in clause 11 of IEC 60335-1 (K) ..... :		N/A
20	Clearances, creepage distances, solid insulation and coatings of rigid printed board assemblies		N/A
	Clause 20 is applicable to clearances across full disconnection and micro-disconnection		N/A
	It is also applicable to creepage distances for functional insulation, across full disconnection and micro-disconnection, as stated in Table 24		N/A
I	**ANNEX I (NORMATIVE) MOTORS HAVING BASIC INSULATION THAT IS INADEQUATE FOR THE RATED VOLTAGE OF THE APPLIANCE**		N/A
	The following modifications to this standard are applicable for motors having basic insulation that is inadequate for the rated voltage of the appliance:		N/A
8	Protection against access to live parts		N/A
8.1	Metal parts of the motor are considered to be bare live parts		N/A
11	Heating		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
11.3	The temperature rise of the body of the motor is determined instead of the temperature rise of the windings		N/A
11.8	The temperature rise of the body of the motor, where in contact with insulating material, not exceeding values in table 3 for the relevant insulating material		N/A
16	Leakage current and electric strength		N/A
16.3	Insulation between live parts of the motor and its other metal parts is not subjected to the test		N/A
19	Abnormal operation		N/A
19.1	The tests of 19.7 to 19.9 are not carried out		N/A
19.I.101	Appliance operated at rated voltage with each of the following fault conditions:		N/A
	- short circuit of the terminals of the motor, including any capacitor incorporated in the motor circuit		N/A
	- short circuit of each diode of the rectifier		N/A
	- open circuit of the supply to the motor		N/A
	- open circuit of any parallel resistor, the motor being in operation		N/A
	Only one fault simulated at a time, the tests carried out consecutively		N/A
22	Construction		N/A
22.I.101	For class I appliances incorporating a motor supplied by a rectifier circuit, the d.c. circuit being insulated from accessible parts of the appliance by double or reinforced insulation		N/A
	Compliance checked by the tests specified for double and reinforced insulation		N/A
J	**ANNEX J (NORMATIVE) COATED PRINTED CIRCUIT BOARDS**		N/A
	Testing of protective coatings of printed circuit boards carried out in accordance with IEC 60664-3 with the following modifications:		N/A
5.7	Conditioning of the test specimens		N/A
	When production samples are used, three samples of the printed circuit board are tested		N/A
5.7.1	Cold		N/A
	The test is carried out at -25 °C		N/A
5.7.3	Rapid change of temperature		N/A
	Severity 1 is specified		N/A
5.9	Additional tests		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	This subclause is not applicable		N/A
K	**ANNEX K (NORMATIVE) OVERVOLTAGE CATEGORIES**		P
	The information on overvoltage categories is extracted from IEC 60664-1		P
	Overvoltage category is a numeral defining a transient overvoltage condition		P
	Equipment of overvoltage category IV is for use at the origin of the installation		N/A
	Equipment of overvoltage category III is equipment in fixed installations and for cases where the reliability and the availability of the equipment is subject to special requirements		N/A
	Equipment of overvoltage category II is energy consuming equipment to be supplied from the fixed installation		P
	If such equipment is subjected to special requirements with regard to reliability and availability, overvoltage category III applies		N/A
	Equipment of overvoltage category I is equipment for connection to circuits in which measures are taken to limit transient overvoltages to an appropriate low level		N/A
L	**ANNEX L (INFORMATIVE) GUIDANCE FOR THE MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES**		**P**
	Information for the determination of clearances and creepage distances		P
M	**ANNEX M (NORMATIVE) POLLUTION DEGREE**		**P**
	The information on pollution degrees is extracted from IEC 60664-1		P
	Pollution		P
	The microenvironment determines the effect of pollution on the insulation, taking into account the macroenvironment		P
	Means may be provided to reduce pollution at the insulation by effective enclosures or similar		P
	Minimum clearances specified where pollution may be present in the microenvironment		P
	Degrees of pollution in the microenvironment		P
	For evaluating creepage distances, the following degrees of pollution in the microenvironment are established:		P

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	- pollution degree 1: no pollution or only dry, non-conductive pollution occurs. The pollution has no influence		N/A
	- pollution degree 2: only non-conductive pollution occurs, except that occasionally a temporary conductivity caused by condensation is to be expected		P
	- pollution degree 3: conductive pollution occurs or dry non-conductive pollution occurs that becomes conductive due to condensation that is to be expected		N/A
	- pollution degree 4: the pollution generates persistent conductivity caused by conductive dust or by rain or snow		N/A
N	**ANNEX N (NORMATIVE) PROOF TRACKING TEST**		N/A
	The proof tracking test is carried out in accordance with IEC 60112 with the following modifications:		N/A
7	Test apparatus		N/A
7.3	Test solutions		N/A
	Test solution A is used		N/A
10	Determination of proof tracking index (PTI)		N/A
10.1	Procedure		N/A
	The proof voltage is 100V, 175V, 400V or 600V.. :		N/A
	The test is carried out on five specimens		N/A
	In case of doubt, additional test with proof voltage reduced by 25V, the number of drops increased to 100		N/A
10.2	Report		N/A
	The report states if the PTI value was based on a test using 100 drops with a test voltage of (PTI-25) V		N/A
O	**ANNEX O (INFORMATIVE) SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30**		**P**
	Description of tests for determination of resistance to heat and fire		P
P	**ANNEX P (INFORMATIVE) GUIDANCE FOR THE APPLICATION OF THIS STANDARD TO APPLIANCES USED IN TROPICAL CLIMATES**		N/A
	Modifications applicable for class 0 and 01 appliances having a rated voltage exceeding 150V, intended to be used in countries having a tropical climate and that are marked with symbol IEC 60417-6332		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	Modifications may also be applied to class 1 appliances having a rated voltage exceeding 150V, intended to be used in countries having a tropical climate and that are marked with symbol IEC 60417-6332, if liable to be connected to a supply mains that excludes the protective earthing conductor		N/A
5.7	The ambient temperature for the tests of clauses 11 and 13 is 40 +3/0 °C		N/A
7.1	The appliance marked with the symbol IEC 60417-6332		N/A
7.12	The instructions state that the appliance is to be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30 mA		N/A
	The instructions state that the appliance is considered to be suitable for use in countries having a tropical climate, but may also be used in other countries		N/A
	If symbol IEC 60417-6332 is used, its meaning is explained		N/A
11.8	The values of Table 3 are reduced by 15 K		N/A
13.2	The leakage current for class I appliances not exceeding 0,5 mA		N/A
15.3	The value of t is 37 °C		N/A
16.2	The leakage current for class I appliances not exceeding 0,5 mA (mA):		N/A
19.13	The leakage current test of 16.2 is applied in addition to the electric strength test of 16.3		N/A
Q	**ANNEX Q (INFORMATIVE)** **SEQUENCE OF TESTS FOR THE EVALUATION OF ELECTRONIC CIRCUITS**		**P**
	Description of tests for appliances incorporating electronic circuits		P
R	**ANNEX R (NORMATIVE)** **SOFTWARE EVALUATION**		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 validated in accordance with the requirements of this annex		N/A
R.1	Programmable electronic circuits using software		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 constructed so that the software does not impair compliance with the requirements of this standard		N/A
R.2	Requirements for the architecture		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 use measures to control and avoid software-related faults/errors in safety-related data and safety-related segments of the software		N/A
R.2.1.1	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.2 have one of the following structures:		N/A
	- single channel with periodic self-test and monitoring		N/A
	- dual channel (homogenous) with comparison		N/A
	- dual channel (diverse) with comparison		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 have one of the following structures:		N/A
	- single channel with functional test		N/A
	- single channel with periodic self-test		N/A
	- dual channel without comparison		N/A
R.2.2	Measures to control faults/errors		N/A
R.2.2.1	When redundant memory with comparison is provided on two areas of the same component, the data in one area is stored in a different format from that in the other area		N/A
R.2.2.2	Programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.2 and that use dual channel structures with comparison, have additional fault/error detection means for any fault/errors not detected by the comparison		N/A
R.2.2.3	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, means are provided for the recognition and control of errors in transmissions to external safety-related data paths		N/A
R.2.2.4	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the programmable electronic circuits incorporate measures to address the fault/errors in safety-related segments and data indicated in table R.1 and R.2 as appropriate		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
R.2.2.5	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, detection of a fault/error occur before compliance with clause 19 is impaired		N/A
R.2.2.6	The software is referenced to relevant parts of the operating sequence and the associated hardware functions		N/A
R.2.2.7	Labels used for memory locations are unique		N/A
R.2.2.8	The software is protected from user alteration of safety-related segments and data		N/A
R.2.2.9	Software and safety-related hardware under its control is initialized and terminates before compliance with clause 19 is impaired		N/A
R.3	Measures to avoid errors		N/A
R.3.1	General		N/A
	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the following measures to avoid systematic fault in the software are applied		N/A
	Software that incorporates measures used to control the fault/error conditions specified in table R.2 is inherently acceptable for software required to control the fault/error conditions specified in table R.1		N/A
R.3.2	Specification		N/A
R.3.2.1	Software safety requirements:	Software Id:	N/A
	The specification of the software safety requirements includes the descriptions listed		N/A
R.3.2.2	Software architecture		N/A
R.3.2.2.1	The specification of the software architecture includes the aspects listed - techniques and measures to control software faults/errors (refer to R.2.2); - interactions between hardware and software; - partitioning into modules and their allocation to the specified safety functions; - hierarchy and call structure of the modules (control flow); - interrupt handling; - data flow and restrictions on data access; - architecture and storage of data; - time-based dependencies of sequences and data	Document ref. No:	N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
R.3.2.2.2	The architecture specification is validated against the specification of the software safety requirements by static analysis		N/A
R.3.2.3	Module design and coding		N/A
R.3.2.3.1	Based on the architecture design, software is suitably refined into modules		N/A
	Software module design and coding is implemented in a way that is traceable to the software architecture and requirements		N/A
R.3.2.3.2	Software code is structured		N/A
R.3.2.3.3	Coded software is validated against the module specification by static analysis		N/A
	The module specification is validated against the architecture specification by static analysis		N/A
R.3.3.3	Software validation		N/A
	The software is validated with reference to the requirements of the software safety requirements specification		N/A
	Compliance is checked by simulation of:		N/A
	- input signals present during normal operation		N/A
	- anticipated occurrences		N/A
	- undesired conditions requiring system action		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict

TABLE R.1 [e] – GENERAL FAULT/ERROR CONDITIONS						
Component [a]	Fault/error	Acceptable measures [b, c]	Definitions	Document reference for applied measure	Document reference for applied test	Ver-dict
1 CPU 1.1 Registers	Stuck at	Functional test, or periodic self-test using either: - static memory test, or - word protection with single bit redundancy	H.2.16.5 H.2.16.6 H.2.19.6 H.2.19.8.2			N/A
1.2 VOID						N/A
1.3 Programme counter	Stuck at	Functional test, or Periodic self-test, or Independent time-slot monitoring, or Logical monitoring of the programme sequence	H.2.16.5 H.2.16.6 H.2.18.10.4 H.2.18.10.2			N/A
2 Interrupt handling and execution	No interrupt or too frequent interrupt	Functional test, or time-slot monitoring	H.2.16.5 H.2.18.10.4			N/A
3 Clock	Wrong frequency (for quartz synchronized clock: harmonics/ sub-harmonics only)	Frequency monitoring, or time slot monitoring	H.2.18.10.1 H.2.18.10.4			N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict

4. Memory 4.1 Invariable memory	All single bit faults	Periodic modified checksum, or multiple checksum, or word protection with single bit redundancy	H.2.19.3.1 H.2.19.3.2 H.2.19.8.2			N/A
4.2 Variable memory	DC fault	Periodic static memory test, or word protection with single bit redundancy	H.2.19.6 H.2.19.8.2			N/A
4.3 Addressing (relevant to variable and invariable memory)	Stuck at	Word protection with single bit redundancy including the address	H.2.19.8.2			N/A
5 Internal data path	Stuck at	Word protection with single bit redundancy	H.2.19.8.2			N/A
5.1 VOID						N/A
5.2 Addressing	Wrong address	Word protection with single bit redundancy including the address	H.2.19.8.2			N/A
6 External communication	Hamming distance 3	Word protection with multi-bit redundancy, or CRC – single work, or Transfer redundancy, or Protocol test	H.2.19.8.1 H.2.19.4.1 H.2.18.2.2 H.2.18.14			N/A
6.1 VOID						N/A
6.2 VOID						N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016						
Clause	Requirement + Test			Result - Remark		Verdict
6.3 Timing	Wrong point in time Wrong sequence	Time-slot monitoring, or scheduled transmission Time-slot and logical monitoring, or comparison of redundant communication channels by either: - reciprocal comparison - independent hardware comparator Logical monitoring, or time-slot monitoring, or Scheduled transmission	H.2.18.10.4 H.2.18.18 H.2.18.10.3 H.2.18.15 H.2.18.3 H.2.18.10.2 H.2.18.10.4 H.2.18.18			N/A
7 Input/output periphery	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13			N/A
7.1 VOID						N/A
7.2 Analog I/O 7.2.1 A/D and D/A-converter	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13			N/A
7.2.2 Analog multiplexer	Wrong addressing	Plausibility check	H.2.18.13			N/A
8 VOID						N/A
9 Custom chips [d] e.g. ASIC, GAL, gate array	Any output outside the static and dynamic functional specification	Periodic self-test	H.2.16.6			N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict

NOTE A Stuck-at fault model denotes a fault model representing an open circuit or a non-varying signal level. A DC fault model denotes a stuck-at fault model incorporating short circuit between signal lines.

a) For fault/error assessment, some components are divided into their sub-functions.
b) For each sub-function in the table, the Table R.2 measure will cover the software fault/error.
c) Where more than one measure is given for a sub-function, these are alternatives.
d) To be divided as necessary by the manufacturer into sub-functions.
e) Table R.1 is applied according to the requirements of R.1 to R.2.2.9 inclusive.

S	**ANNEX S (NORMATIVE) BATTERY OPERATED APPLIANCES POWERED BY BATTERIES THAT ARE NON-RECHARGEABLE OR NOT RECHARGED IN THE APPLIANCE**		N/A
	The following modifications to this standard are applicable for battery-operated appliances where the batteries are either non-rechargeable (primary batteries), or		N/A
	rechargeable batteries (secondary batteries) that are not recharged in the appliance		N/A
5.8.1	If the supply terminals for the connection of the battery have no indication of polarity, the more unfavourable polarity is applied		N/A
5.S.101	Appliances intended for use with a battery box are tested with the battery box supplied with the appliance or with the battery box recommended in the instructions		N/A
5.S.102	Appliances are tested as motor-operated appliances.		N/A
7.1	Appliances marked with the battery voltage (V) and the polarity of the terminals, unless ....:		N/A
	the polarity is irrelevant		N/A
	Appliances also marked with:		N/A
	– name, trade mark or identification mark of the manufacturer or responsible vendor ....:		N/A
	– model or type reference ....:		N/A
	– IP number according to degree of protection against ingress of water, other than IPX0... .....:		N/A
	– type reference of battery or batteries..... .....:		N/A
	If relevant, the positive terminal is indicated by the symbol IEC 60417-5005 and the negative terminal by the symbol IEC 60417-5006		N/A
	If appliances use more than one battery, they are marked to indicate correct polarity connection of the batteries		N/A
7.6	Additional symbols		N/A
7.12	The instructions contain the following, as applicable:		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
	– the types of batteries that may be used... .....:		N/A
	– how to remove and insert the batteries		N/A
	– non-rechargeable batteries are not to be recharged		N/A
	– rechargeable batteries are to be removed from the appliance before being charged		N/A
	– different types of batteries or new and used batteries are not to be mixed		N/A
	– batteries are to be inserted with the correct polarity		N/A
	– exhausted batteries are to be removed from the appliance and safely disposed of		N/A
	– if the appliance is to be stored unused for a long period, the batteries are removed		N/A
	– the supply terminals are not to be short-circuited		N/A
11.5	Appliances are supplied with the most unfavourable supply voltage between		N/A
	– 0,55 and 1,0 times the battery voltage, if the appliance can be used with non-rechargeable batteries		N/A
	– 0,75 and 1,0 times battery voltage, if the appliance is designed for use with rechargeable batteries only		N/A
	The values specified in Table S.101 for the internal resistance per cell of the battery is taken into account		N/A
19.1	The tests are carried out with the battery fully charged unless otherwise specified		N/A
19.13	The battery does not rupture or ignite		N/A
19.S.101	Appliances are supplied with the voltage specified in 11.5. The supply terminals having an indication of polarity are connected to the opposite polarity, unless		N/A
	such a connection is unlikely to occur due to the construction of the appliance		N/A
19.S.102	For appliances with provision for multiple batteries, one or more of the batteries are reversed and the appliance is operated, if reversal of batteries is allowed by the construction		N/A
25.5	The flexible leads or flexible cord used to connect an external battery or battery box in is connected to the appliance by a type X attachment		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict
25.13	This requirement is not applicable to the flexible leads or flexible cord connecting external batteries or a battery box with an appliance		N/A
25.S.101	Appliances have suitable means for connection of the battery. If the type of battery is marked on the appliance, the means of connection is suitable for this type of battery		N/A
26.5	Terminal devices in an appliance for the connection of the flexible leads or flexible cord connecting an external battery or battery box are so located or shielded that there is no risk of accidental connection between supply terminals		N/A
30.2.3.2	There is no battery in the area of the vertical cylinder used for the consequential needle flame test, unless		N/A
	the battery is shielded by a barrier that meets the needle flame test of Annex E, or		N/A
	that comprises material classified as V-0 or V-1 according to IEC 60695-11-10		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict

T	**ANNEX T (NORMATIVE)** **UV-C RADIATION EFFECT ON NON-METALLIC MATERIALS**		N/A
	Requirements for non-metallic materials subject to direct or reflected UV-C radiation exposure and whose mechanical and electrical properties are relied upon for compliance with the		N/A
	Does not apply to glass, ceramic and similar materials		N/A
	Tested as specified in ISO 4892-1 and ISO 4892-2, with the following modifications:		N/A
	Modifications to ISO 4892-1:		N/A
5.1.6	The UV-C emitter is a low pressure mercury lamp with a quartz envelope having a continuous spectral irradiance of 10 W/m2 at 254 nm		N/A
	Subclause 5.1.6.1 and Table 1 are not applicable		N/A
5.2.4	The black-panel temperature shall be 63 °C +/- 3 °C		N/A
5.3.1	Humidification of the chamber air is specified in part 2 when necessary		N/A
9	This clause is not applicable		N/A
	Modifications to ISO 4892-2:		N/A
7.1	At least three test specimens are tested		N/A
	Ten samples of internal wiring is tested		N/A
7.2	The specimens are attached to the specimen holders such that they are not subject to any stress		N/A
7.3	Apparatus prepared as specified		N/A
	The test specimens and, if used, the irradiance-measuring instrument are exposed for 1 000 h		N/A
7.4	If used, a radiometer is mounted and calibrated such that it measures the irradiance at the exposed surface of the test specimen		N/A
7.5	Material properties and test methods for parts providing mechanical support or impact resistance as specified in Table T.1		N/A
	Material properties and test method for electrical insulation of internal wiring as specified in Table T.2		N/A
8	This clause is not applicable		N/A

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict

10.1	**TABLE: Power input deviation**				N/A
Input deviation of/at:	**P rated (W)**	**P measured (W)**	**Δ P**	**Required Δ P**	**Remark**
Supplementary information:					

10.2	**TABLE: Current deviation**				P
Current deviation of/at:	**I rated (A)**	**I measured (A)**	**Δ I**	**Required Δ I**	**Remark**
MANGROOMER - ULTIMATE PRO Self-Haircut Kit： B0745SC21L					
5V dc	1.0A	0.52A	-48.0%	+15%	/
Class 2 power supply: BRP005-050100CU					
100V,50Hz	0.2A	0.027A	-86.5%	+15%	/
100V,60Hz	0.2A	0.027A	-86.5%	+15%	/
240V,50Hz	0.2A	0.016A	-92.0%	+15%	/
240V,60Hz	0.2A	0.016A	-92.0%	+15%	/
Supplementary information:					

11.8	**TABLE: Heating test**		
	Test voltage (V) ..... :	254,4V	—
	Ambient (°C) ..... :	25.0	—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
Class 2 power supply	15.2	60
DC inlet	5.3	Ref.
Contrl PCB	8.4	Ref.
Battery	4.3	25
DC motor	24.6	65
Handles	2.2	60
On-off switch	2.2	60
Blades	4.5	40
Enclosure of SHAVER	2.2	60
Test corner	0.7	60
Supplementary information: 254,4V @ Class 2 power supply: BRP005-050100CU		

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict

11.8	**TABLE: Heating test, resistance method**		
	Test voltage (V) ..... :	94,0	—
	Ambient, t1 (°C) ..... :	25,0	—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
Class 2 power supply	15.7	60
DC inlet	5.5	Ref.
Contrl PCB	8.7	Ref.
Battery	4.3	25
DC motor	24.5	65
Handles	2.3	60
On-off switch	2.4	60
Blades	4.4	40
Enclosure of SHAVER	2.2	60
Test corner	0.5	60
Supplementary information: 94.0V @ Class 2 power supply: BRP005-050100CU		

13.2	**TABLE: Leakage current**		P
	Heating appliances: 1.15 x rated input (W).. :	--	—
	Motor-operated and combined appliances: 1.06 x rated voltage (V) ..... :	254,4	—

Leakage current between:	**I (mA)**	**Max. allowed I (mA)**
L/N of class 2 power supply to enclosure of SHAVER	Max. 0,005	0,35 peak
Supplementary information:		

13.3	**TABLE: Dielectric strength**	
Test voltage applied between:	**Test potential applied (V)**	**Breakdown / flashover (Yes/No)**
L/N of class 2 power supply to enclosure of SHAVER	3000	No
Supplementary information:		

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict

14	TABLE: Transient overvoltages					N/A
Clearance between:		**Cl (mm)**	**Required Cl (mm)**	**Rated impulse voltage (V)**	**Impulse test voltage (V)**	**Flashover (Yes/No)**
Supplementary information:						

16.2	TABLE: Leakage current		
	Single phase appliances: 1.06 x rated voltage (V) ..... :	254,4	—
	Three phase appliances 1.06 x rated voltage divided by √3 (V) ..... :	--	—

Leakage current between:	**I (mA)**	**Max. allowed I (mA)**
L/N of class 2 power supply to enclosure of SHAVER	Max. 0,005	0,25 peak
Supplementary information:		

16.3	TABLE: Dielectric strength	
Test voltage applied between:	**Test potential applied (V)**	**Breakdown / flashover (Yes/No)**
L/N of class 2 power supply to enclosure of SHAVER	3000	**No**
Supplementary information:		

17	TABLE: Overload protection		N/A
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**	
Supplementary information:			

17	TABLE: Overload protection, resistance method					N/A
	Test voltage (V) .....:					—
	Ambient, t1 (°C) .....:					—
	Ambient, t2 (°C) .....:					—
Temperature of winding:		**R1 (Ω)**	**R2 (Ω)**	**Δ T (K)**	**T (°C)**	**Max. T (°C)**

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:					

19	Abnormal operation conditions						P
Operational characteristics			**YES/NO**	**Operational conditions**			
Are there electronic circuits to control the appliance operation?			YES				
Are there "off" or "stand-by" position?			YES				
The unintended operation of the appliance results in dangerous malfunction?			YES				
Sub-clause	**Operating conditions description**	**Test results description**	**PEC description**	**EMP 19.11.4**	**Software type required**	**19.11.3 PEC**	**Final result**
19.2				N.A			N/A
19.3							N/A
19.4							N/A
19.5							N/A
19.6				N.A			N/A
19.7							N/A
19.8							N/A
19.9							N/A
19.10							N/A
19.11.2	PASS						P
19.11.4.8							N/A
19.10X							N/A
Supplementary information:							

19.7	TABLE: Abnormal operation, locked rotor/moving parts					P
	Test voltage (V) ..... :		240			—
	Ambient, t1 (°C) ..... :		25.5			—
	Ambient, t2 (°C) ..... :		25.5			—
Temperature of winding:	**R1 (Ω)**	**R2 (Ω)**	**Δ T (K)**	**T (°C)**	**Max. T (°C)**	

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Clause	Requirement + Test	Result - Remark	Verdict

Winding of Motor	--	--	9.5	35.0	165
Supplementary information:					

19.9	TABLE: Abnormal operation, running overload				P
	Test voltage (V) ..... :		240		—
	Ambient, t1 (°C) ..... :		25.4		—
	Ambient, t2 (°C) ..... :				—
Temperature of winding:	**R1 (Ω)**	**R2 (Ω)**	**Δ T (K)**	**T (°C)**	**Max. T (°C)**
Winding of Motor	--	--	34.5	59.4	165
Supplementary information:					

19.13	TABLE: Abnormal operation, temperature rises	P
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
Motor	4.4	150
Test corner	1.8	150
Supplementary information:		

21.1	TABLE: Impact resistance		**P**
Impacts per surface	**Surface tested**	**Impact energy (Nm)**	**Comments**
3	Enclosure	0,5	Pass
Supplementary information:			

24.1	TABLE: Critical components information				P
Object / part No.	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
Class 2 power supply	HangZhou Borui Electronic Technology Co., Ltd.	BRP005-050100CU	Input :100-240V~,60/50HZ,0.2A, IP20; Output: DC 5V,1.0A	UL 1310 CSA C22.2#223	Intertek: 171100345SHA-001

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Clause	Requirement + Test	Result - Remark	Verdict

Battery	JIANGSU CEL BATTERY CO LTD	AA600	600mAH,1.2A	UL2054	UL MH46026
PCB	QUZHOU CHUANTE ELECTRONIC TECHNOLOGY CO LTD	HD	V-0,130℃	ANSI/UL 796	UL E252748
Alternative	GUANGDE OUKEDA ELECTRONIC CO LTD	HD-2	V-0,130℃	ANSI/UL 796	UL E311152
Supplementary information: [1]) Provided evidence ensures the agreed level of compliance. See OD-2039.					

28.1	**TABLE: Threaded part torque test**		P
Threaded part identification:	**Diameter of thread (mm)**	**Column number (I, II, or III)**	**Applied torque (Nm)**
Screw for fixed enclosure	2,99	II	0,5
Supplementary information:			

29.1	**TABLE: Clearances**					**P**
	Overvoltage category ....:					**—**
		Type of insulation:				
Rated impulse voltage (V):	**Min. cl (mm)**	**Basic (mm)**	**Supplementary (mm)**	**Reinforced (mm)**	**Functional (mm)**	**Verdict / Remark**
330	0,2* / 0,5 / 0,8**					
500	0,2* / 0,5 / 0,8**					
800	0,2* / 0,5 / 0,8**					
1 500	0,5 / 0,8** / 1,0***					
2 500	1,5 / 2,0***				4.3	P
4 000	3,0 / 3,5***			7.1		P
6 000	5,5 / 6,0***					
8 000	8,0 / 8,5***					
10 000	11,0 / 11,5***					

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict

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

BRP005-050100CU
R: Primary trace to secondary trace under CY1: Cr.=Cl.=7.7mm;
R: Primary circuit to secondary circuit: Cr.=Cl.=7.1mm;
F: L to N: Cr.=Cl.=4.3mm

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		—	—	
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9	—		—	
≤50	0,36	1,2	1,7	2,4	3,0	3,4	3,8	—	—		
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4		—	—	
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4	—		—	
125	0,56	1,5	2,1	3,0	3,8	4,2	4,8	—	—		
250	0,56	1,25	1,8	**2,5**	3,2	3,6	4,0	X	—	—	P
250	0,56	1,25	1,8	**2,5**	3,2	3,6	4,0	—	X	—	P
250	1,12	2,5	3,6	**5,0**	6,4	7,2	8,0	—	—	X	P
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3		—	—	
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3	—		—	
400	2,0	4,0	5,6	8,0	10,0	11,2	12,6	—	—		
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0		—	—	
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0	—		—	
500	2,6	5,0	7,2	10,0	12,6	14,2	16,0	—	—		
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0		—	—	
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	—		—	
>630 and ≤800	3,6	6,4	9,0	12,6	16,0	18,0	20,0	—	—		

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict

>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5		—	—	
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	—		—	
>800 and ≤1000	4,8	8,0	11,2	16,0	20,0	22,0	25,0	—	—		
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0		—	—	
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	—		—	
>1000 and ≤1250	6,4	10,0	14,2	20,0	25,0	28,0	32,0	—	—		
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0		—	—	
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	—		—	
>1250 and ≤1600	8,4	12,6	18,0	25,0	32,0	36,0	40,0	—	—		
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0		—	—	
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	—		—	
>1600 and ≤2000	11,2	16,0	22,0	32,0	40,0	44,0	50,0	—	—		
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0		—	—	
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	—		—	
>2000 and ≤2500	15,0	20,0	28,0	40,0	50,0	56,0	64,0	—	—		
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0		—	—	
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	—		—	
>2500 and ≤3200	20,0	25,0	36,0	50,0	64,0	72,0	80,0	—	—		
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0		—	—	
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	—		—	
>3200 and ≤4000	25,0	32,0	44,0	64,0	80,0	90,0	100,0	—	—		
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0		—	—	
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	—		—	
>4000 and ≤5000	32,0	40,0	56,0	80,0	100,0	112,0	126,0	—	—		
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0		—	—	
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	—		—	
>5000 and ≤6300	40,0	50,0	72,0	100,0	126,0	142,0	160,0	—	—		
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0		—	—	
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	—		—	
>6300 and ≤8000	50,0	64,0	90,0	126,0	160,0	180,0	200,0	—	—		
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0		—	—	
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	—		—	
>8000 and ≤10000	64,0	80,0	112,0	160,0	200,0	220,0	250,0	—	—		

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict

>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0		—	—	
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	—		—	
>10000 and ≤12500	80,0	100,0	142,0	200,0	250,0	280,0	320,0	—	—		
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											

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**
≤10	0,08	0,4	0,4	0,4	1,0	1,0	1,0	
50	0,16	0,56	0,8	1,1	1,4	1,6	1,8	
125	0,25	0,71	1,0	1,4	1,8	2,0	2,2	
250	0,42	1,0	1,4	**2,0**	2,5	2,8	3,2	P
400	0,75	1,6	2,2	3,2	4,0	4,5	5,0	
500	1,0	2,0	2,8	4,0	5,0	5,6	6,3	
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict

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

30.1	TABLE: Ball Pressure Test of Thermoplastics		P
Allowed impression diameter (mm) .....:			—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)
Plastic of enclosure	--	75	1.2
Supplementary information:			

30.2	TABLE: Resistance to heat and fire - Glow wire tests							
Object/ Part No./ Material	Manufacturer / trademark	Glow wire test (GWT); (°C)						Verdict
		550	650		750		850	
			te	ti	te	ti		
Plastic of enclosure		X						P
DC inlet		X						P
PCB		X						P
Object/ Part No./ Material	Manufacturer / trademark	Glow-wire flammability index (GWFI), °C				GW ignition temp. (GWIT), °C		Verdict
		550	650	750	850	675	775	
The test specimen passed the glow wire test (GWT) with no ignition [(t_e – t_i) ≤ 2s] (Yes/No):								N/A
If no, then surrounding parts passed the needle-flame test of annex E (Yes/No) ..... :								N/A
The test specimen passed the test by virtue of most of the flaming material being withdrawn with the glow-wire (Yes/No)?.....:								NO
Ignition of the specified layer placed underneath the test specimen (Yes/No) .....:								NO
Supplementary information: - 550 °C GWT not relevant (or applicable) to parts of material classified at least HB40 or if relevant HBF - The GWIT pre-selection option, the 850 °C GWFI pre-selection option, and the 850 °C GWT are not relevant (or applicable) for attended appliances								

30.2/30.4	TABLE: Needle- flame test (NFT)	

IEC 60335-2-8:2012, A1:2015 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2011, AMD1:2013, COR1:2014, AMD2:2016			
Clause	Requirement + Test	Result - Remark	Verdict

Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict
PCB	-	-	NO	0	P
Supplementary information: - NFT not relevant (or applicable) for Parts of material classified as V-0 or V-1 - NFT not relevant (or applicable) for Base material of PCBs classified as V-0 or if relevant VTM-0					

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60335-1

National Differences included in the UL adoption of the corresponding IEC standard

Safety of household and similar electrical appliances

Part 2: Particular requirements for battery chargers

Differences according to	**:**	UL 60335-1 Ed.6: October 31, 2016
Attachment Form No.	**:**	-
Attachment Originator	**:**	-
Master Attachment	**:**	2020-09

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Preface			
	This document provides a single listing of the technical National Differences included in the UL adoption of the corresponding IEC standard.		--
	D1 - These are deviations which are based on basic safety principles and requirements, elimination of which would compromise safety for U.S. consumers and users of products.		--
	D2 - These are deviations based on safety practices. These are deviations for IEC requirements that may be acceptable, but adopting the IEC requirements would require considerable retesting or redesign on the manufacturer's part.		--
	DC - These are deviations based on the component standards and will not be deleted until a particular component standard is harmonized with the IEC component standard.		--
	DE - These are deviations based on editorial comments or corrections.		--
	DR - These are deviations based on the national regulatory requirements.		--
	Each national difference contains a description of what the national difference entails. Typically one of the following words is used to explain how the text of the national difference is to be applied to the base IEC text:		--
	Addition / Add - An addition entails adding a complete new numbered clause, subclause, table, figure, or annex. Addition is not meant to include adding select words to the base IEC text.		--
	Deletion / Delete - A deletion entails complete deletion of an entire numbered clause, subclause, table,figure, or annex without any replacement text.		--

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	Modification / Modify - A modification is an altering of the existing base IEC text such as the addition, replacement or deletion of certain words or the replacement of an entire clause, subclause, table, figure, or annex of the base IEC text.		--
National Differences			
1.	**Scope**		P
1DV.1	DR Modification to add after the first paragraph:		P
	This standard covers the above-noted products that are intended to be installed or used in accordance with:		P
	– CSA C22.1, Canadian Electrical Code (CEC) Part I,		P
	– NFPA 70, National Electrical Code (NEC), in the United States		P
1DV.2	DE Modification to add the following note:		N/A
	NOTE 5 This Part 1 may be employed for investigation of components and sub-assemblies for the purpose of their pre-selection for use in appliances. If the component or sub-assembly used complies with this standard, the tests for the component or sub-assembly specified in the particular appliance standard in some cases will not need to be made in the particular appliance or assembly. Additional testing on a component or subassembly may be required. For example, if a control system is associated with the particular appliance control system, additional tests could potentially be necessary on the final appliance.		N/A
2.	**Normative references**		P
2DV.1	DR Modification to add the following to Clause 2 (Canada only):		N/A
	CAN/CSA-C22.2 No. 0, General Requirements – Canadian Electrical Code, Part II.		N/A
2DV.2	DC Modification to add the following:		P
	IEC component standard requirements are replaced by the relevant requirements of Canada and United States component standards, as cited in Annex DVA.		P
3	**Terms and definitions**		P
3.3.7DV	D2 Modification to add the following after the last sentence of the definition:		N/A
	CLASS 0 appliances shall not exceed 150 V (rms) to ground.		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
3.4.1DV	DR Modification to replace the definition with the following:		P
	EXTRA-LOW VOLTAGE: voltage that does not exceed 30 V rms or 42,4 V peak ac or dc.		P
3.4.2DV	DR Modification to replace the first paragraph with the following:		P
	SAFETY EXTRA-LOW VOLTAGE: voltage not exceeding 30 V rms or 42,4 V peak or 30 V dc between conductors and between conductors and earth. Where wet contact with the appliance is likely to occur, SAFETY EXTRA-LOW VOLTAGE is 15 V rms or 21,2 V peak or 15 V dc.		P
	NOTE Appliances where wet contact is assumed to occur such as a wet shaver are specified in the part 2 standard.		P
3.6.3DV	D2 Modification to replace the first sentence with the following:		P
	ACCESSIBLE PART : part or surface that can be touched by means of either test probe B of IEC 61032 or, when required in clause 8, 20.2 or the applicable part 2, Figure 13DV and if the part or surface is metal, any conductive part connected to it		P
3.6.4DV	DE Modification to add the following note:		P
	NOTE 3 A LIMITED POWER SOURCE is not considered to be LIVE PARTS.	UL1310 class 2 power supply used.	P
3.10DV	D2 Addition:		P
	LIMITED POWER SOURCE: a power source whose output voltage is SELV and the maximum output current and other parameters are limited in accordance with Table 3DV.1 **Table 3DV.1 - Limits for inherently LIMITED POWER SOURCES** Output voltage[1] (U_{OC}): V a.c. / V d.c.; Output current[2] (I_{SC}): A; Apparent power[3] (S): VA ≤ 20 / ≤ 20 / ≤ 8,0 / ≤ 5 × U_{OC} 20 < U_{OC} ≤ 30 / 20 < U_{OC} ≤ 30 / ≤ 8,0 / ≤ 100 – / 30 < U_{OC} ≤ 42,4 / ≤ 150 /U_{OC} / ≤ 100 [1] U_{OC}: Output voltage measured with all load circuits disconnected. Voltages are for substantially sinusoidal a.c. and ripple free d.c. For non-sinusoidal a.c. and d.c. with ripple greater than 10% of the peak, the peak voltage shall not exceed 42,4 V. [2] I_{SC}: Maximum output current with any non-capacitive load, including a short circuit measured 5 s after application of the load if the limited power circuit is protected by an ELECTRONIC CIRCUIT or a PTC and 60 s if protected by an impedance. [3] S (VA): Maximum output VA with any load. Initial transients lasting less than 5 s are permitted to exceed the limit if the limited power circuit is protected by an ELECTRONIC CIRCUIT or a PTC and 60 s if protected by an impedance.	Approved power supply.	P
3.11DV	D2 Addition:		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	PROTECTIVE EARTHING CONDUCTOR: a conductor connecting the main protective earthing terminal or lead in the equipment to the building earth, or in the power SUPPLY CORD, connecting a main protective earthing terminal in the equipment to an earth point in the building installation		N/A
3.12DV	D2 Addition:		N/A
	PROTECTIVE BONDING CONDUCTOR: a conductor in the equipment, or a combination of conductive parts in the equipment, connecting a main protective earthing terminal to a part of the equipment that is required to be earthed		N/A
4	**General requirement**		P
4DV.1	DE Modification of the first paragraph:		P
	Replace [2] cause no danger to persons or surroundings.[2] with [2] reduce the risk of fire, electric shock, and/or injury to persons.[2]		P
4DV.2	DR Modification to add the following to Clause 4 (Canada only):		N/A
	CAN/CSA-C22.2 No. 0 shall form a part of, and be read in conjunction with, this standard as far as the requirements apply, except that, where this standard contains requirements that are at variance with those of CAN/CSA-C22.2 No. 0, the requirements of this standard shall take precedence.		N/A
5	**General conditions for the tests**		P
5.2DV	DE Modification to replace last sentence of first paragraph to the following:		P
	The test of 22.3 and 22.55DV is carried out on a new appliance.		P
6	**Classification**		P
6.1DV	DR Modification to add the following:		N/A
	CLASS 0I appliances are not allowed.		N/A
7	**Marking and instructions**		P
7.1DV.1	D2 Modification to add a paragraph after the seventh dashed item of Clause 7.1:		P
	Ingress protection markings in addition to the IP ratings are acceptable. If marked, the appliance shall also comply with the referenced standards of Annex DVA (Boxes, Conduit and Fittings). Additional markings, where used, shall be as specified in the applicable Part 2.		P
7.1DV.2	DR Modification to add the following after the compliance statement of Clause 7.1:		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	If the temperature rise of the insulation of the fixed wiring supplying an appliance for permanent connection to the supply mains exceeds the temperature rise specified in Table 3 during the test of Clause 11, the equipment shall be marked with the substance of the following:		N/A
	Use supply wires suitable for ____ °C		N/A
	NOTE 5 The temperature specified in the marking will be 75°C or 90°C except where another rating is permitted by national electrical installation code wiring rules.		N/A
	NOTE 6 Additional information (e.g. AWG size) may be provided as part of the marking where appropriate to facilitate installation in accordance with the national electrical installation code wiring rules.		N/A
	Compliance is checked by inspection and during the test of Clause 11		N/A
7.1DV.3	DR Modification to add the following (Canada Only):		P
	In Canada, warnings shall be written in English and French.		P
7.8DV	DR Modification to revise first dashed item as follows:		N/A
	– terminals used for type X attachment, intended exclusively for the neutral conductor shall be indicated by the letter N;		N/A
7.12.3DV	DR Deletion:		N/A
	Delete Clause 7.12.3.		N/A
7.13DV	DR Modification to add the following (Canada Only):		P
	In Canada the French translation of the warning of Clause 7.2 is as follows:		P
	Avertissement: Avant d'accéder aux bornes de raccordement, tous les circuits d'alimentation doivent être déconnectés.		P
7.17DV	DR Addition:		N/A
	Appliances requiring the usage of time delay overcurrent PROTECTIVE DEVICES in accordance with 9DV.2 shall be so marked to indicate the use of time delay fuses only.		N/A
7.18DV	DR Addition:		P
	Appliances equipped with output terminals supplied from a LIMITED POWER SOURCE and intended for connection to a fixed wiring method shall be marked to indicate Class 2 wiring.		P
8	**Protection against access to live parts**		P
8.1.1DV.1	D2 Modification to replace the second paragraph with the following:		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	Lamps located behind a DETACHABLE COVER are not removed, provided that a screwshell type lampholder, if any, is connected to a circuit with a potential less than 150 V-to-ground and the screwshell is connected to the grounded (neutral) conductor, and the appliance can be isolated from the supply mains by means of a plug or an all-pole switch. However, during insertion or removal of lamps that are located behind a detachable cover, protection against contact with LIVE PARTS of the lamp cap shall be ensured.		N/A
8.1.1DV.2	D1 Modification to add the following after the third paragraph:		P
	In addition, the articulated probe of Figure 13DV shall be applied as described for test probe B (IEC 61032) when the product is:		P
	a) A hand-held product, or a hand-held part of a product; or		P
	b) Accessible to children while the product is operating.		P
8.1.4DV	D2 Modification to replace second bullet in first paragraph to read as follows:		P
	• for d.c., the voltage does not exceed 30 V;		P
9	**Starting of motor-operated appliances**		P
9DV	DR Addition of 9DV.1 – 9DV.4:		P
	9DV.1 An appliance shall start and operate on a circuit protected by a non-time delay fuse having a current rating corresponding to the supply mains to which the appliance would normally be connected.		P
	9DV.2 The use of time delay fuses is acceptable for STATIONARY APPLIANCES marked as indicated in Clause 7.17DV.		N/A
	9DV.3 Compliance is checked by the test specified in 9DV.4		P
	9DV.4 The appliance shall be capable of starting 3 times at the conditions of Clause 11 at the RATED VOLTAGE. The appliance shall start under conditions representing the beginning of NORMAL OPERATION and the beginning of the normal operating cycle. The performance is unacceptable if the fuse opens or an overload protector provided as part of the appliance operates.		P
11	**Heating**		P
11.1DV	DC Modification to add to the compliance statement:		P
	In addition, the polymeric materials that enclose or support LIVE PARTS shall not exceed their relative thermal index determined in accordance with the standards in Annex DVA.		P
	Table 3DV DC Modification to revise Table 3:		P

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict

	Revise Table 3 as follows:		P
	a) Change temperature rise for ²Points where the insulation of the wires can come into contact with parts of the terminal block or compartment for fixed wiring, for a STATIONARY APPLIANCE not provided with a SUPPLY CORD² from 50 K to 35 K.		N/A
	b) Change temperature rise for ²Material used as insulation, other than that specified for wires and windingse: impregnated or varnished textile, paper or press-board² from 70 K to 65 K.		N/A
	c) Replace the requirement for ²– silicone rubber² with the following: – silicone rubber: 145 – RTV silicone rubber: 105		N/A
	d) Change temperature rise for ²– polytetrafluoroethylene² from 265 K to 180 K.		N/A
	e) Add a reference to footnote o to ² Parts in contact with oil having a flash-point of t °C² and add the following footnote:		N/A
	“o The maximum temperature rise of parts in contact with oil should be considered in the applicable part 2.²		N/A
	f) Add following to Table 3 preceding the Notes section. *Surface where adhesive is used to secure NON-DETACHABLE PARTS* used to protect against access to LIVE PARTS, moisture or contact with moving parts.: 45		P
	g) Replace footnote c with the following: “c This limit may be exceeded if the marking specified in 7.1DV.1 is supplied.”		N/A
	h) Delete footnote f. (US only)		N/A
13	**Leakage current and electric strength at operating temperature**		P
13.1DV	D1 Modification to add the following note:		P
	NOTE At operating temperature includes warm-up and cool-down periods.		P
13.2DV.1	D1 Modification to replace all dashed items of the sixth paragraph with the following dashed items:		P
	– for CLASS II APPLIANCES and for parts of CLASS II CONSTRUCTION: 0,35 mA peak		P
	– for CLASS 0 and CLASS III APPLIANCES: 0,7 mA peak		N/A
	– for PORTABLE CLASS I APPLIANCES: 0,5 mA		N/A
	– for all cord connected STATIONARY CLASS I APPLIANCES: 0,75mA		N/A
	– for other CLASS I MOTOR-OPERATED APPLIANCES: 3,5mA		

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict

	– for other CLASS I HEATING APPLIANCES	0,75 mA or 0,75 mA per kW RATED POWER INPUT of the appliance with a maximum of 5 mA, whichever is higher		N/A
13.2DV.2	D2 Modification to add the following 9th paragraph:			N/A
	For a CLASS 0 or CLASS I cord connected appliance employing a sheathed type heating element, the leakage current may exceed 0,7 mA peak or 0,75 mA, as applicable, but shall not exceed 2,5 mA during a period of 5 minutes beginning when the 0,7 mA peak or 0,75 mA value was exceeded. At the end of the 5 minute period, the leakage current shall not exceed 0,7 mA peak or 0,75 mA, as applicable.			N/A
13.2DV.3	D1 Modification to add the following 10th paragraph:			N/A
	For HEATING APPLIANCES incorporating a user adjustable heater control, the control shall be additionally adjusted, if necessary, so that it interrupts operation while the final measurements are taken.			N/A
13.3DV.1	D1 Modification to add the following Clause:			N/A
	For the test of 13.3, varistors connected from live to accessible metal parts of CLASS I appliances may be disconnected.			N/A
	Table 4DV D1 Modification to revise Table 4:			N/A
	Revise Table 4 as follows:			P
	a) Replace footnote a with the following: “a Appliances rated more than 250 V are tested at 2 U + 1000 V.”			P
	b) Add superscript [2] c[2] after [2] BASIC INSULATION[2] and add footnote c: “c For wet and moist applications, special test voltages could be considered in the applicable part 2.”			P
16	**Leakage current and electric strength**			P
16.2DV.1	D1 Modification to replace all dashed items of the fourth paragraph with the following dashed items:			P
	– for CLASS II APPLIANCES and for parts of CLASS II CONSTRUCTION	0,25 mA		P
	– for CLASS 0, CLASS 0I and CLASS III APPLIANCES	0,5 mA		N/A
	– for PORTABLE CLASS I APPLIANCES	0,5 mA		N/A
	– for all cord connected STATIONARY CLASS I APPLIANCES	0,75mA		N/A
	– for other CLASS I MOTOR-OPERATED APPLIANCES	3,5mA		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict

	– for other CLASS I HEATING APPLIANCES	0,75 mA or 0,75 mA per kW RATED POWER INPUT of the appliance with a maximum of 5 mA, whichever is higher		N/A
16.2DV.2	D2 Modification to replace the fifth paragraph and dashed items starting with "The values specified above are doubled" with the following:			N/A
	Higher leakage current values, not exceeding 3,5 mA, may be allowed by applicable part 2 standards for cord connected, STATIONARY CLASS I APPLIANCES employing radio interference filters.			N/A
16.3DV.1	D1 Modification to add the following Clause:			P
	For the test of 16.3, varistors connected from live to accessible metal parts of CLASS I appliances may be disconnected.			N/A
	Table 7DV D1 Modification to revise Table 7:			N/A
	Revise Table 7 as follows:			P
	a) Replace footnote a with the following: "a Appliances rated more than 250 V are tested at 2 U + 1000 V."			P
	b) Add superscript [2]d[2] after [2]BASIC INSULATION[2] and add footnote d: "d For wet and moist applications, special test voltages could be considered in the applicable part 2."			P
19	Abnormal operation			P
19.11.2DV	D2 Modification to add the following note:			N/A
	NOTE 3 For the test of 19.11.2(d), the terminals of a varistor complying with the relevant standard for surge suppressors are not short circuited.			N/A
19.11.4DV	D2 Modification to replace the text of the third paragraph with the following:			N/A
	The tests are carried out with surge PROTECTIVE DEVICES disconnected, unless they incorporate spark gaps or are varistors complying with the relevant standard for surge suppressors.			N/A
19.12DV	DC Modification to add the following to note 3:			N/A
	See Annex DVA (Fuses – Branch Circuit and Supplementary) for additional performance requirements applicable to those fuses. This applies only to fuses provided as an integral part of the appliance.			N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
20	**Stability and mechanical hazards**		P
20.2DV	D1 Modification to add the following after the fourth paragraph:		P
	The articulated probe of Figure 13DV shall be applied with a force not exceeding 1 N when the product is:		P
	a) A hand-held product, or a hand-held part of a product; or		P
	b) Accessible to children while the product is operating.		P
	Through openings, the test probe is applied to any depth that the probe will permit and is rotated or angled before, during and after insertion to any position.		P
21	**Mechanical strength**		P
21.1DV	D2 Modification to replace the first, second and third paragraphs of 21.1 with 21.1DV.1 – 21.1DV.4:		P
	21.1DV.1 Appliances shall have adequate mechanical strength and be constructed to withstand thermal conditioning and such rough handling that may be expected in normal use.		P
	21.1DV.2 Compliance is checked by applying blows to the appliance in accordance with test Ehb of IEC 60068-2-75, the spring hammer test or the ball impact test.		P
	21.1DV.3 For both, the spring hammer test and ball impact test, the appliance is rigidly supported, and three blows having impact energy of 2,0 J are applied to every point of the enclosure that is likely to be weak.		P
	21.1DV.4 For the ball impact test, force is applied by a solid, smooth, steel sphere 50 ± 1 mm in diameter, weighing approximately 0,53 kg.		P
	a) For top surfaces, the steel sphere shall be allowed to fall freely from rest through the distance required to cause it to strike the enclosure when the sphere has the specified energy.		P
	b) For surfaces other than the top, the steel sphere shall be suspended by a fine wire and allowed to fall as a pendulum through the distance required to cause it to strike the surface with the specified impact, and the enclosure shall be so placed that the surface to be tested is vertical and in the same vertical plane as the point of support of the pendulum.		P
22	**Construction**		P
22.2DV	D2 Modification to add the following:		N/A
	Disconnection of the neutral is not required for all single-phase STATIONARY APPLIANCES.		N/A
22.3DV	DC Modification to replace the 2nd and 3rd paragraph, and the Note, with the following:		P

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	Compliance is checked in accordance with the tipping moment requirements of Annex DVC.		P
22.11DV	DC Modification to add the following (US only):		N/A
	Adhesives securing NON-DETACHABLE PARTS shall additionally have adequate bonding properties. Compliance is checked by the application of the Structural Adhesive standard of Annex DVA.		N/A
22.12DV	D1 Modification to add the following sentence to the note:		P
	Friction fits are not considered reliable with respect to protection against a hazard.		P
22.33DV	D2 Modification to replace first sentence with the following:		N/A
	Conductive liquids that are or could possibly become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts shall not be in direct contact with LIVE PARTS.		N/A
22.35DV	D2 Modification to add the following note:		N/A
	NOTE Accessible metal parts separated from LIVE PARTS by earthed metal parts are not regarded as likely to become live in the event of an insulation fault.		N/A
22.39DV	D2 Modification to add the following:		N/A
	The screwshell of a mains-connected Edison-base lampholder shall be reliably connected to the identified (neutral) conductor.		N/A
22.40DV	D2 Modification to add the following:		N/A
	A cord-connected product with a motor having a rated output of more rated than 249 W (1/3 hp) shall be provided with a manually operated motor-control switch.		N/A
22.42DV	D2 Replace the first paragraph with the following:		P
	PROTECTIVE IMPEDANCE shall consist of at least two separate components, except that a single Y1 capacitor or a single resistor may be used. If any one of the components is short-circuited or open-circuited, the values specified in 8.1.4 shall not be exceeded; however, capacitors and resistors that individually comply with the requirements specified below need not be short-circuited.		P
	NOTE In all cases, the CLEARANCE and CREEPAGE DISTANCE requirements of Clause 29 still apply. This includes CREEPAGE DISTANCE over the external surface of a single capacitor or resistor used as a PROTECTIVE IMPEDANCE.		P
22.52DV	D1 Modification to replace 22.52 with 22.52DV.1 – 22.52DV.2:		P

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	22.52DV.1 Socket-outlets on appliances accessible to the user shall be in accordance with the socket-outlet standards of Annex DVA.		P
	NOTE The acceptability of such socket-outlets, their protection from overload, spillage, mechanical abuse or other conditions of use is addressed in the applicable part 2 standards.		P
22.52DV.2	Compliance is checked by inspection		P
22.55DV	D1 Addition (Canada only):		N/A
	22.55DV.1Adhesives required for compliance with Clause 4 of this standard shall be durable.		N/A
	22.55DV.2 Compliance is checked by the test of Annex DVD. NOTE Label adhesives are not subjected to this test. Labels are covered by the requirements specified in Annex DVA.		N/A
22.56DV	D1 Addition (Canada only):		N/A
	Unless connected in series with gas discharge tubes, varistors shall not be connected between LIVE PARTS and accessible metal parts of appliances that have 1-15P, 5-15P, 1-20P, or 5-20P plug configurations. This does not apply to permanently connected appliances or appliances with other plug configurations		N/A
24	**Components**		P
24.1DV	DC Modification to replace 24.1 with 24.1DV.1 – 24.1DV.11:		P
	24.1DV.1 Components shall comply with the safety requirements specified in the relevant standards of Annex DVA as far as they reasonably apply.		P
	24.1DV.2 Compliance with the standard for the relevant component does not necessarily ensure compliance with the requirements of this standard.		P
	24.1DV.3 Motors are not required to comply with the standards specified in Annex DVA. They may be tested as part of the appliance according to this standard.		P
	24.1DV.4 Unless otherwise specified, the requirements of Clause 29 of this standard apply between LIVE PARTS of components and ACCESSIBLE PARTS of the appliance. Unless otherwise specified, components may comply with the requirements for CLEARANCES and CREEPAGE DISTANCES for FUNCTIONAL INSULATION as specified in the relevant component standard.		P

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	24.1DV.5 Unless otherwise specified, 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
	24.1DV.6 Components that have not been previously tested and shown to comply with the standard for the relevant component shall be tested according to the requirements of 30.2 of this standard.		P
	24.1DV.7 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		P
	a) the severity specified in the component standard is not less than the severity specified in 30.2 of this standard; and b) unless the pre-selection alternatives in 30.2 are used, the test report for the component states the values of te and ti, as required by IEC 60695-2-11.		P
	24.1DV.8 If the two conditions specified in 24.1DV.7 are not satisfied, the component shall be tested as part of the appliance.		P
	24.1DV.9 Unless components have been previously tested and found to comply with the relevant standard of Annex DVA for the number of cycles specified, they shall be tested in accordance with 24.1.1 to 24.1.9. 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.		P
	24.1DV.10 Components that have not been separately tested and found to comply with the relevant standard of Annex DVA, and components that are not marked or not used in accordance with their marking, shall be tested in accordance with the conditions occurring in the appliance, the number of samples being that required by the relevant standard.		P
	24.1DV.11 When a standard does not exist for a component or where one exists but is not specified in Annex DVA, the appliance standard requirements apply and there are no additional tests specified.		P
24.1.2DV	DC Modification to add the following:		P
	A transformer relied upon to create a LIMITED POWER SOURCE shall meet the requirements of Annex DVA.		P

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
24.1.4DV	DC Modification to replace the second paragraph and all of the dashed items with the following:		P
	The number of cycles of operation declared for 6.10 and 6.11 of IEC 60730-1 shall not be less than 2000 for automatic self-resetting thermal motor protectors on motors rated greater than 1 Hp, 300 for all other automatic self-resetting thermal motor protectors, and 6000 for all other automatic controls.		P
24.1.5DV	DC Deletion:		N/A
	Delete Clause 24.1.5		N/A
24.1.6DV	DC Deletion:		N/A
	Delete Clause 24.1.6		N/A
24.1.7DV	DC Modification to replace 24.1.7 with the following:		N/A
	If the REMOTE OPERATION of the appliance is via a telecommunication network, the relevant standard for the telecommunications network interface circuitry in the appliance is as specified in Annex DVA.		N/A
24.1.8DV	DC Modification to replace 24.1.8 with the following:		N/A
	THERMAL LINKS that do not comply with the applicable standard of Annex DVA are considered to be an INTENTIONALLY WEAK PART for the purposes of Clause 19.		N/A
24.2DV	DC Modification to add a Note after the first dashed item:		N/A
	NOTE GFCI PROTECTIVE DEVICES are not considered switches or automatic controls. When used in a flexible cord, these are called portable GFCI's.		N/A
24.3DV	DC Modification to replace Note 1 with the following:		N/A
	NOTE 1 Full disconnection is contact separation of a pole to ensure the equivalent of BASIC INSULATION, in accordance with the switch standards of Annex DVA, between the supply mains and those parts that are intended to be disconnected.		N/A
24.4DV	DC Modification to replace 24.4 with the following:		P
	Plugs and socket-outlets and those for EXTRA-LOW VOLTAGE circuits used as terminal devices for heating elements shall not be interchangeable with general use plugs and socket-outlets or with connectors and appliance inlets complying with the standard sheets of IEC 60320-1.		P
	NOTE 1 General use refers to plug and socket-outlet configurations permitted under national wiring rules.		P

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE 2 Reference to IEC 60320-1 is for connector and appliance inlet configuration comparison purposes only.		N/A
24.7DV	DR Deletion		N/A
	Delete Clause 24.7.		N/A
24.8DV	DC Modification to replace the first dashed item with the following :		N/A
	– the capacitors are of class of safety protection S2 or S3 according to IEC 60252-1 or are of class of safety protection according to relevant standards of Annex DVA;		N/A
25	**Supply connection and external flexible cords**		P
25.1DV.1	DR Modification to add 25.1DV.1.1– 25.1DV.1.2:		N/A
	25.1DV.1.1 The SUPPLY CORD of appliances incorporating a screwshell type lampholder, general use socket outlet, or single-pole switch used as the 22.2 disconnect device shall be fitted with a polarized attachment plug.		N/A
	25.1DV.1.2 The SUPPLY CORD of appliances with a polarized attachment plug shall have its identified neutral conductor connected to the grounded (neutral) contact of the plug.		N/A
25.1DV.2	DR Modification to add the following note:		N/A
	NOTE A grounding-type attachment plug fulfils the requirement for a polarized attachment plug.		N/A
25.2DV	D1 Modification to add the following:		N/A
	Multiple supply mains connections may be permitted only as specified in part 2 standards.		N/A
25.3DV	D2 Modification to replace the third dashed item with the following:		N/A
	– A set of SUPPLY LEADS accommodated in a suitable compartment. Leads shall be:		N/A
	• a minimum 152 mm long;		N/A
	• no more than two standard AWG wire sizes smaller than the intended supply conductor; and		N/A
	• completely insulated if not every installation would require use of the lead.		N/A
25.7DV	DC Modification to replace 25.7 with 25.7DV.1 – 25.7DV.6:		N/A
	25.7DV.1 SUPPLY CORDS for appliances other than CLASS III APPLIANCES shall be one of the following types:		N/A
	a) flexible cords and cable of the types indicated in the standards of Annex DVA; or		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	b) cord sets and power SUPPLY CORDS of the types indicated in the standards of Annex DVA.		N/A
	25.7DV.2 Unless otherwise specified in a part 2 standard, a heater cord is required where the temperature measured during the test of Clause 11 exceeds 121 °C on any surface that the cord is likely to touch when the appliance is used as intended.		N/A
	25.7DV.3 SUPPLY CORDS for CLASS III APPLIANCES shall be adequately insulated.		N/A
	25.7DV.4 Compliance is checked by inspection, by measurement, and for CLASS III APPLIANCES that contain LIVE PARTS, by the test of 25.7DV.5.		N/A
	25.7DV.5 A voltage of 500 V shall be applied for 2 min between the conductor and metal foil wrapped around the insulation, the insulation being at the temperature measured during the test of Clause 11. There shall be no breakdown during this test.		N/A
	25.7DV.6 An appliance having an appliance inlet for connection to the mains shall be provided with a detachable power SUPPLY CORD (cord set).		N/A
25.8DV	DR Modification to replace 25.8, including Table 11, with 25.8DV.1 – 25.8DV.2:		N/A
	25.8DV.1 Ampacities of SUPPLY CORDS and attachment plugs shall not be less than the current rating of the appliance and shall be suitable for the application in accordance with national electrical installation requirements.		N/A
	25.8DV.2 Compliance is checked by inspection		N/A
25.10DV	DR Modification to replace 25.10 with 25.10DV.1 – 25.10DV.3:		N/A
	25.10DV.1 The earthing conductor of the SUPPLY CORD of CLASS I APPLIANCES shall have green/yellow or solid green insulation and be connected to the earthing terminal of the appliance, and for appliances not intended for permanent connection to the fixed wiring, to the earthing contact of the plug.		N/A
	25.10DV.2 The colour of the neutral conductor of the SUPPLY CORD, if any, shall be identified according to the national electrical codes.		N/A
	25.10DV.3 Compliance is checked by inspection.		N/A
25.22DV	DC Modification to replace the first dashed item with the following:		N/A
	– be located or enclosed so that LIVE PARTS are not accessible during insertion or removal of the connector. This requirement is not applicable to appliance inlets complying with the appliance inlet standards listed in Annex DVA.		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
25.25DV	DC Modification to replace 25.25 with 25.25DV.1 – 25.25DV.2:		P
	25.25DV.1 The dimensions of pins of appliances that are inserted into socket-outlets shall be compatible with the dimensions of the relevant socket-outlet. Dimensions of the pins and engagement face are to be in accordance with the dimensions of the relevant plug / socket outlet standards of Annex DVA.		P
	25.25DV.2 Compliance is checked by measurement		P
26	**Terminals for external conductors**		N/A
26.5DV	DR Modification to replace the third paragraph of 26.5 with the following:		N/A
	A 8 mm length of insulation is removed from the end of a flexible conductor complying with 25.8DV. One wire of the stranded conductor is left free and the other wires are fully inserted and clamped in the terminal. The free wire is bent, without tearing the insulation back, in every possible direction but without making sharp bends around barriers.		N/A
26.6DV	DR Modification:		N/A
	Replace the wording ²shown in Table 13² in the first paragraph by ²in accordance with the national electrical codes².		N/A
	Table 13DV DR Deletion:		N/A
	Delete Table 13.		N/A
27	**Provision for earthing**		N/A
27.2DV	D1 Modification to add 27.2DV.1 – 27.2DV.2:		N/A
	27.2DV.1 If a fastener is intended to be used to secure a bonding conductor, it shall only be used for that purpose unless it is clear that it is unlikely to be removed or replaced during servicing.		N/A
	27.2DV.2 A single binding post may be used to secure both bonding conductors and the earthing conductor, providing that the nut securing the earthing conductor is not relied on to secure the bonding conductors. NOTE For the purpose of this requirement, the minimum rating of the branch circuit is 20 A.		N/A
27.5DV.1	D1 Modification to replace the 5th and 6th paragraph with 27.5DV.1.1 – 27.5DV.1.4 and Table 27DV.1:		N/A
	27.5DV.1.1 A current derived from a source having a no-load voltage not exceeding 12 V (a.c. or d.c.) and equal at least 2,0 times the rating of the earthed branch circuit, shall be passed between the earthing terminal or earthing contact and each of the ACCESSIBLE METAL PARTS in turn.		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	27.5DV.1.2 The voltage drop between the earthing terminal of the appliance or the earthing contact of the appliance inlet and the ACCESSIBLE METAL PART shall be measured and shall not exceed 4 volts.		N/A
	27.5DV.1.3 The resistance of the PROTECTIVE EARTHING CONDUCTOR is not included in the measurement. However, if the PROTECTIVE EARTHING CONDUCTOR is supplied with the equipment, it may be included in the test circuit, but the measurement of the voltage drop shall be made only from the main protective earthing terminal to the part required to be earthed.		N/A
	27.5DV.1.4 The resistance calculated from the current of this voltage drop shall not exceed 0,1 ohm. The test duration is specified in Table 27DV.1.		N/A
	Table 27DV.1 – Earthing resistance test duration Over-current protection of branch circuit required for equipment (A) / Time (min) 0 – 30 / 2 31 – 60 / 4 61 – 100 / 6 101 – 200 / 8 201 and over / 10		N/A
27.5DV.2	D1 Modification:		N/A
	Delete the Note at the end of 27.5.		N/A
27.6DV	D2 Modification to replace 27.6 with 27.6DV.1 – 27.6DV.2:		N/A
	27.6DV.1 The printed conductors of printed circuit boards shall not be used to provide earthing continuity in HAND-HELD APPLIANCES. They may be used to provide earthing continuity in other appliances provided that they comply with 27.5 and 27.7DV.1.4 to 27.7DV.1.7.		N/A
	27.6DV.2 Compliance is checked by inspection and by the relevant tests.		N/A
27.7DV	D1 Addition of 27.7DV.1 – 27.7DV.1.8:		N/A
	27.7DV.1 Size of protective conductors		N/A
	27.7DV.1.1 PROTECTIVE EARTHING CONDUCTORS shall at least be of the same size as supply conductors and shall comply with the minimum conductor sizes of column A of Table 27DV.2.		N/A
	27.7DV.1.2 Compliance is checked by inspection and measurement.		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict

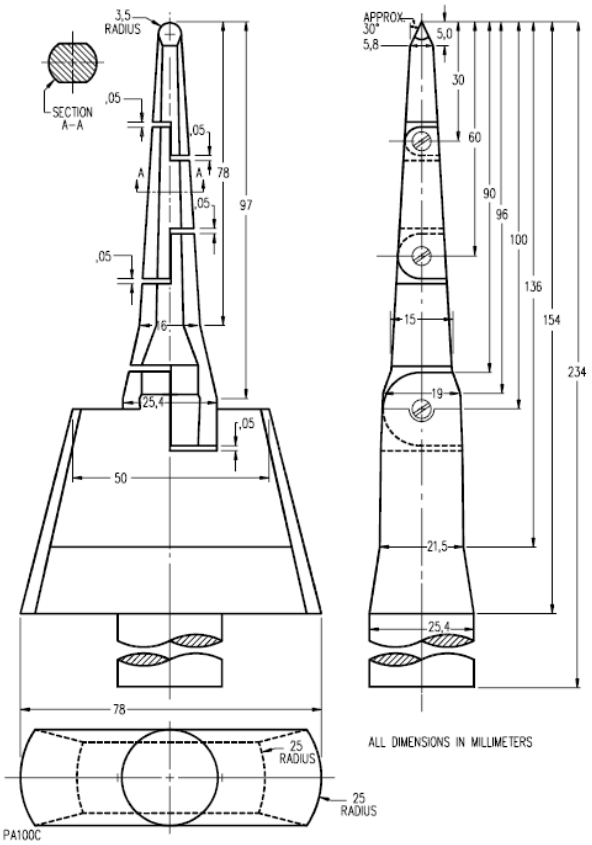
	Table 27DV.2 – Minimum size of protective conductors <table><tr><th rowspan="2">RATED CURRENT of the equipment under consideration Amperes</th><th colspan="2">Minimum conductor sizes AWG (mm²)</th></tr><tr><th>A PROTECTIVE EARTHING CONDUCTOR AWG (mm²)</th><th>B PROTECTIVE BONDING CONDUCTOR AWG (mm²)</th></tr><tr><td>Up to and including 10</td><td>18 (0,82)</td><td>20 (0,52)</td></tr><tr><td>Over 10 up to and including 13</td><td>16 (1,31)</td><td>18 (0,82)</td></tr><tr><td>Over 13 up to and including 18</td><td>14 (2,08)</td><td>16 (1,31)</td></tr><tr><td>Over 18 up to and including 25</td><td>12 (3,31)</td><td>14 (2,08)</td></tr><tr><td>Over 25 up to and including 30</td><td>10 (5,26)</td><td>12 (3,31)</td></tr><tr><td>Over 30 up to and including 40</td><td>8 (8,36)</td><td>10 (5,26)</td></tr><tr><td>Over 40 up to and including 55</td><td>6 (13,29)</td><td>8 (8,36)</td></tr><tr><td>Over 55 up to and including 70</td><td>4 (21,14)</td><td>6 (13,29)</td></tr><tr><td>Over 70 up to and including 95</td><td>2 (33,61)</td><td>4 (21,14)</td></tr></table>		N/A
	27.7DV.1.3 PROTECTIVE BONDING CONDUCTORS shall comply with the following:		N/A
	a) Shall pass the resistance test of 27.5;and		N/A
	b) Shall be no smaller than the minimum conductor sizes in column B of Table 27DV.2; or for components only, be no smaller than the conductors that supply power to the component.		N/A
	27.7DV.1.4 If the PROTECTIVE BONDING CONDUCTOR is smaller than the conductor supplying power to the component, or smaller than the conductor size in column B of Table 27DV.2, or a printed conductor on a printed circuit board, the protective bonding path shall demonstrate the ability to withstand a limited short circuit.		N/A
	27.7DV.1.5 Compliance is determined by conducting the limited short circuit test specified in 27.7DV.1.6 and 27.7DV.1.7.		N/A
	27.7DV.1.6 The protective earthing path shall be connected to the supply circuit having a capacity in accordance with Table 27DV.3. The capacity shall be determined without the protective earthing path in the circuit. The supply voltage shall be the nominal voltage of the a.c. mains supply. The specified over-current PROTECTIVE DEVICE rated no less than specified in 27.7DV.1.8 shall be connected in series with the protective earthing path.		N/A
	27.7DV.1.7 During the test, the protective earthing path shall not open, and there shall be no damage to any insulation, the failure of which would result in contact between the earth path and a LIVE PART. The integrity of the insulation shall be checked by the electric strength test of 16.1 by applying the test between LIVE PART and earthed parts.		N/A
	27.7DV.1.8 The current rating of the overcurrent PROTECTIVE DEVICE shall be the smallest of the following:		N/A
	a) The current rating of the attachment plug but not less than 20 A;		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict

	b) The rating of an overcurrent PROTECTIVE DEVICE which is specified by the manufacturer for installation in the field to protect the equipment; or		N/A
	c) The rating of an overcurrent PROTECTIVE DEVICE in the equipment that protects the circuit or part required to be earthed.		N/A
	Table 27DV.3 – Short circuit capacity for the limited short circuit test Maximum rating of the appliance: Volt-A single-phase; Volt-A 3-phase; Volt-A direct current; Wattage (hp); Volts; Circuit capacity in A 0 – 1 176 / 0 – 832 / 0 – 648 / 373 max (0,5) / 0 – 250 / 200 0 – 1 176 / 0 – 832 / 0 – 648 / 373 max (0,5) / 251 – 480 / 1 000 1 177 – 1 920 / 833 – 1 496 / 649 – 1 140 / >373 (0,5) to 746 (1.0) / 0 – 480 / 1 000 1 921 – 4 080 / 1 497 – 3 990 / 1 141 – 3 000 / >746 (1.0) to 2 200 (3.0) / 0 – 250 / 2 000 4 081 – 9 600 / 3 991 – 9 145 / 3 001 – 6 960 / >2 200 (3.0) to 5 600 (7,5) / 0 – 250 / 3 500 9 601 or higher / 9 146 or higher / 6 961 or higher / >5 600 (7,5) / 0 – 250 / 5 000 1 921 or higher / 1 497 or higher / 1 141 or higher / >746 (1.0) / 251 – 480 / 5 000		N/A
28	**Screws and connections**		P
28.2DV	D1 Modification to replace 28.2 with 28.2DV.1 – 28.2DV.2:		P
28.2DV.1	Electrical connections and connections providing earthing continuity shall be constructed so that contact pressure is not transmitted through non-ceramic insulating material that is liable to shrink or to distort, unless there is sufficient resiliency in the metallic parts to compensate for any possible shrinkage or distortion of the insulating material. This requirement does not apply to electrical connections in circuits supplied by a LIMITED POWER SOURCE.		N/A
28.2DV.2	Compliance is checked by inspection.		N/A
28.5DV	D1 Addition of 28.5DV.1 – 28.5DV.4 and Table 28DV.1:		N/A
	28.5DV.1 Pillar, stud, or screw type protective earthing and protective bonding terminals shall comply with the minimum size requirements of Table 28DV.1.		N/A
	Table 28DV.1 – Sizes of terminals for PROTECTIVE EARTHING CONDUCTORS RATED CURRENT of Equipment A: Minimum Nominal Thread Diameter mm (Pillar Type or Stud; Screw Type) Up to and including 10: 3,0; 3,5 Over 10 up to and including 16: 3,5; 4,0 Over 16 up to and including 25: 4,0; 5,0 Over 25 up to and including 32: 4,0; 5,0 Over 32 up to and including 40: 5,0; 5,0 Over 40 up to and including 63: 6,0; 6,0		N/A
	28.5DV.2 Protective bonding terminals which do not comply with Table 28DV.1 are considered acceptable if they meet the requirements of 27.7DV.1.5.		N/A
	28.5DV.3 The main protective earthing terminal for permanently connected equipment shall be provided with factory installed studs, screws, or bolts, together with the necessary hardware, if requiring a PROTECTIVE EARTHING CONDUCTOR larger than 10 AWG.		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	28.5DV.4 Compliance is checked by inspection and measurement. Table 15DV D1 Modification to revise Table 15: Add a 4th row with the following values: “>300 and £480, – , 4 000, –” Table 16DV D1 Modification to revise Table 16:		N/A
	Revise Table 16 as follows:		N/A
	a) Replace the fourth line with the following: “1500, 1,2d, e”. b) Replace the sixth line with the following: “4 000, 3,5”. c) Add footnote e: “e The CLEARANCES at terminals for the connection of field wiring are increased to 6,4 mm for RATED IMPULSE VOLTAGE of 1 500 V and 9,5 mm for RATED IMPULSE VOLTAGES of 2 500 and 4 000 V.”		N/A
	Table 17DV D1 Modification to add superscript ²b² to title of Table 17 and add the following footnote:		N/A
	“b The CREEPAGE DISTANCES at terminals for the connection of field wiring are increased to 9,5 mm for WORKING VOLTAGES £ 250 volts, and 12,7 mm for voltages >250 and £ 600 volts.”		N/A
30	**Resistance to heat and fire**		P
30.1DV	D2 Modification to add 30.1DV.1 – 30.1DV.2:		P
	30.1DV.1 As an alternate, the minimum temperature for the ball pressure test for external parts may be 65°C + 2°C if the part complies with the Mould Stress Relief Test of IEC 60695-10-3.		P
	30.1DV.2 Electrical components complying with the standards of Annex DVA, if specified and used within their ratings, are considered to fulfil the requirements of 30.1.		P
30.2DV	D2 Modification to add the following note:		P
	NOTE 3 Additional flammability requirements (such as 5VA or 5VB rating per IEC 60695-11-20 for external enclosures of STATIONARY APPLIANCES) are specified in the part 2 standard.		P
30.2.2DV	D2 Modification to add the following to the end of 30.2.2:		P
	The glow-wire test is also not carried out on parts of material classified at least V-1 according to IEC 60695-11-10, or at least VTM-1 according to ISO 9773, provided that the test sample was no thicker than the relevant part of the appliance.		P
30.2.3.1DV	D2 Modification to replace the third paragraph with the following:		P

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	However, the glow-wire test of IEC 60695-2-11 with a test severity of 850 °C is not carried out on parts of material classified at least V-1 according to IEC 60695-11-10, or at least VTM-1 according to ISO 9773, or as having a glow-wire flammability index of at least 850 °C according to IEC 60695-2-12.		P
30.2.3.2DV.1	D2 Modification to replace the fourth paragraph with the following:		P
	However, the glow-wire test with a test severity of 750°C or 650°C, as appropriate, is not carried out on parts of material classified at least V-1 according to IEC 60695-11-10, or at least VTM-1 according to ISO 9773, or fulfilling both or either of the following classifications:		P
30.2.3.2DV.2	D2 Replace second dashed item of last paragraph with the following:		P
	– parts comprising material classified as V-0 or V-1 according to IEC 60695-11-10 or at least VTM-1 according to ISO 9773, provided that the test sample used for the classification was no thicker than the relevant part of the appliance; or		P
30.3DV	D2 Modification to add the following note to Clause 30:		P
	NOTE IEC and ISO references to flammability designations are equivalent to the same designations in CSA C22.2 No. 0.17 and UL 94.		P

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	Figure 13DV D1 Addition:  		P
A.1DV	D2 Modification to add the following to A.1:		N/A
	As an alternative to the test method specified, grounding continuity may be determined by any suitable indicating device, such as an ohmmeter, a battery and buzzer combination, or the like.		N/A
DDV.1	D2 Modification to replace the first paragraph with the following:		N/A
	This annex is applicable to appliances having motors that incorporate thermal motor protectors that are necessary for compliance with this standard and where compliance with the applicable thermal motor protection standard of Annex DVA has not been demonstrated.		N/A
DDV.2	D2 Modification to add the following note		N/A
	NOTE Limited short circuit withstand of thermal motor protectors is specified in the part 2 standard, if necessary.		N/A
Annex FDV	D2 Modification to first paragraph:		N/A
	Replace “IEC 60384-14” with “UL 60384-14 and CAN/CSA E60384-14”.		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict

Annex NDV	DC Modification to add the following note:		N/A
	NOTE The proof tracking test of IEC 60112 is equivalent to the comparative tracking index of the electrical insulation standards of Annex DVA.		N/A
ODV	DE Modification to add the following note:		N/A
	NOTE The Figures of this Annex do not include the national differences in Clause 30.		N/A
RDV	D2 Modification to add the following note after the first paragraph:		N/A
	NOTE All references to IEC 60730-1 are replaced by the Software standards of Annex DVA.		N/A
Annex DVA	DC Add Annex DVA as follows:		P
	DVA.1 DC Addition:		P
	DVA.1.1 The following are North American standards that replace referenced IEC standards where applicable and provide additional requirements. The applicable requirements of the subject standards (first column of Table DVA.1) apply as specified the appliance standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.		P

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict

Table DVA.1 – Component Standards Cross Reference

Clause	Component	IEC/ISO (includes only normative references)	North American Standards	
			Canada	United States
25.7	**Cord Sets and Power SUPPLY CORDS** *[In the international appliance standard, attachment plugs are not considered to be part of the appliance. They are part of the appliance in the binational standard.]*	N/A	C22.2 No. 21 – Cord Sets and Power-Supply Cords	UL 817 – Cord Sets and Power-Supply Cords
25.7	**Flexible Cords and Cable**	IEC 60245 series – Rubber insulated cables – Rated voltages up to and including 450/750V IEC 60227 series – Polyvinyl chloride insulated cables of rated voltages up to and including 450/750V N/A	C22.2 No. 49 – Flexible Cords and Cables C22.2 No. 96 – Portable Power Cables	UL 62 – Flexible Cords and Cables
24.1, 23.5	**Insulated Wire and Cables (excluding flexible cords and cables)** *[The international standard for appliances does not consider wire and cable to be components. The binational standard considers them to be components.]*	N/A	C22.2 No. 38 – Thermoset-Insulated Wires and Cables	UL 44 – Thermoset-Insulated Wires and Cables
			C22.2 No. 75 – Thermoplastic Insulated Wires and Cables	UL 83 – Thermoplastic-Insulated Wires and Cables
			CSA-C22.2 No. 210 – Appliance Wiring Material Products "CSA AWM wire"	UL 758 – Appliance Wiring Material
			CSA-C22.2 No. 127 – Equipment and Lead Wires "CSA wire types TEW, TEWN, REW (XLPVC), SEW-1, SEWF-1, SEW-2, SEWF-2, TR-64, TR-32, TTR, RR-64 (XLPVC), RR-32 (XLPVC), RR-64 (XLCPE), RR-32 (XLCPE)"	UL 758 – Appliance Wiring Material
24.1, 23.5	**Insulated Tubing and Tape** *[The international standard for appliances does not consider insulated tubing and tape to be components. The binational standard considers them to be components.]*	N/A	CAN/CSA-C22.2 No. 198.1 – Extruded Insulating Tubing	UL 224 – Extruded Insulating Tubing
			C22.2 No. 197 – PVC Insulating Tape	UL 510 – Polyvinyl Chloride, Polyethylene and Rubber Insulating Tape
24, 29, Annex J	**Printed-Circuit Boards** *[The international standard for appliances does not consider printed circuit boards or flexible printed cabling to be components. The United States and Canada considers them to be components.]*		No additional requirements	UL 796 – Printed Wiring Boards
				UL 746E – Polymeric Materials – Industrial Laminates, Filament Wound Tubing, Vulcanized Fibre, and Materials Used in Printed Wiring Boards
				UL746F – Polymeric Materials – Flexible Dielectric Film Materials For Use In Printed-Wiring Boards and Flexible Materials Interconnect Constructions
24, Annex N, 11.1	**Electrical Insulating Materials (includes Relative Thermal Index. Excludes insulation on wire and cables, including flexible cord and cable)** *[The international standard for appliances does not consider electrical insulating materials to be components. The binational standard considers them to be components.]*	IEC 60085 – Electrical insulation – Thermal evaluation and designation	For RTI CAN/CSA-C22.2 No. 0.17 – Evaluation of Properties of Polymeric Materials For all else – No additional requirements	UL 1446 – Systems of Insulating Materials – General (Insulation Class) UL 746A– Polymeric Materials – Short Term Property Evaluations (for CTI) UL 746B – Polymeric Materials – Long Term Property Evaluations (for RTI)
11.1, 22.11	**Enclosure Materials and Adhesives (includes Relative Thermal Index, mechanical strength, attachment of conductive coatings)** *[The international standard for appliances does not consider enclosure and structural adhesive materials to be components. The binational standard considers them to be components.] [see Insulating Materials for electrical insulation properties]*	N/A	For RTI CAN/CSA-C22.2 No. 0.17 – Evaluation of Properties of Polymeric Materials (Adhesives: Clause 22.55DV and Annex DVD) For all else – No additional requirements	UL 746A – Polymeric Materials - Short Term Property Evaluations (for CTI) UL 746B – Polymeric Materials - Long Term Property Evaluations (For RTI) UL 746C – Polymeric Materials - Use in Electrical Equipment Evaluations] (Adhesives: Section 39 and 69)
30.2DV	**Evaluation of large surface non-metallic surface areas (flame spread and smoke developed), the part 2 standard is applicable, when necessary.**		CAN/ULC C-S102	UL 723 – Surface Burning Characteristics of Building Materials

P

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict

	24.1, 25.3, 7.1 (IP mark-ings)	Boxes, Conduit and Fittings *[Applicable for field wiring methods. Where used, the devices fulfil enclosure material requirements.]*	IEC 60529 – Degrees of protection provided by enclosures (IP code)	For Cutout, Junction and Pull Boxes CSA C22.2 No. 40 For IP Markings: CAN/CSA-C22.2 No. 60529 – Degrees of protection provided by enclosures (IP Code) For Outdoor Ratings: CSA C22.2 No. 94.2 – Enclosures for Electrical Equipment, Environmental Considerations	UL 50 – Enclosures for Electrical Equipment UL 50E – Enclosures for Electrical Equipment, Environmental Considerations		P
			N/A	CAN/CSA-C22.2 No. 18.1 – Metallic Outlet Boxes CAN/CSA-C22.2 No. 18.3 – Conduit, Tubing, and Cable Fittings CAN/CSA-C22.2 No. 85 Rigid PVC Boxes and Fittings	UL 514A – Metallic Outlet Boxes UL 514B – Conduit, Tubing, and Cable Fittings UL 514C – Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers		
	24.1.4	Automatic Controls, Thermostats, Temperature Limiters, Thermal Cutouts and Software *[temperature sensing devices]*	IEC 60730-1 – Automatic Electrical Controls for Household and Similar Use - Part 1: General Requirements	CAN/CSA-E60730-1 – Automatic Electrical Controls for Household and Similar Use – Part 1: General Requirements C22.2 No. 24 – Temperature-Indicating and Regulating Equipment	UL 60730-1A – Automatic Electrical Controls for Household and Similar Use – Part 1: General Requirements UL 873 – Temperature-Indicating and Regulating Equipment		
			IEC 60730-2-9 – Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Temperature Sensing Devices	CAN/CSA-E60730-2-9 – Automatic Electrical Controls for Household and Similar Use – Part 2-9: Particular Requirements for Temperature Sensing Controls C22.2 No. 24 – Temperature-Indicating and Regulating Equipment	IEC 60730-2-9 – Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Temperature Sensing Devices UL 873 – Temperature-Indicating and Regulating Equipment UL 353 – Limit Controls		
	24.1.8	THERMAL LINKS	IEC 60691 – Thermal Links – Requirements and Application Guide	C22.2 No. 209 – Thermal Cut-Offs CAN/CSA E60691 – Thermal-Links – Requirements and Application Guide	UL 60691 – Thermal Links – Requirements and Application Guide		
	19.7, 19.8, 19.9, Annex D	Thermal Motor Protection *[Includes the motor protector and the combination of the motor and motor protector. Except where compliance with 19.7 – 19.9 and Annex D fulfils the referenced motor and thermal motor protection standards, the method of test and compliance criteria shall be that of those standards.]*	IEC 60730-2-2 – Automatic Electrical Controls for Household and Similar Use; Part 2: Particular Requirements for Thermal Motor Protectors	C22.2 No. 77 – Motors with Inherent Overheating Protection C22.2 No. 100 – Motors and Generators CAN/CSA-E730-2-2 – Automatic electrical controls for household and similar use – Part 2: Particular requirements for thermal motor protectors NOTE For external motor overload protection devices, the applicable standard is CSA C22.2 No. 14.	UL 873 – - Temperature-Indicating and Regulating Equipment UL 60730-2-2 – Automatic Electrical Controls for Household and Similar Use; Part 2: Particular Requirements for Thermal Motor Protectors UL 1004-1 – Rotating Electrical Machines – General Requirements UL 1004-2 – Impedance Protected Motors UL 1004-3 – Thermally Protected Motors UL 1004-7 – Electronically Protected Motors		
	24.1, 19.11.2 Note 1	Solid-State Fan Speed Controls	N/A	C22.2 No. 156 – Solid-State Speed Controls	UL 1917 – Solid-State Fan Speed Controls		
	24.1.3	Switches	IEC 61058-1 – Switches for Appliances – Part 1: General Requirements	CAN/CSA-C22.2 No. 61058-1 – Switches for Appliances - Part 1: General Requirements C22.2 No. 111 – General-Use Snap Switches C22.2 No. 55 – Special Use Switches	UL 61058-1 – Switches for Appliances – Part 1: General Requirements UL 20 – General-Use Snap Switches UL 1054 – Special-Use Switches		
			IEC 60730-2-7 – Automatic Electrical Controls for Household and Similar Use; Part 2: Particular Requirements for Timers and Time Switches	CAN/CSA-C22.2 No. 177 – Clock-Operated Switches CAN/CSA-E730-2-7 – Automatic Electrical Controls for Household and Similar Use - Part 2: Particular Requirements for Timers and Time Switches	UL 917 – Clock-Operated Switches UL 60730-2-7 – Automatic Electrical Controls for Household and Similar Use; Part 2: Particular Requirements for Timers and Time Switches		
	24.1.9	Relays, Contactors, Motor Starters not covered by IEC 60730-2-10		C22.2 No. 14 – Industrial Control Equipment CSA C22.2 No. 60947 Series – Low-Voltage Switchgear and Control gear	UL 508 – Industrial Control Equipment UL 60947 Series – Low-voltage switchgear and control gear		
	24.1	Motor Starting Relays	IEC 60730-2-10 – Automatic electrical controls for household and similar use – Part 2-10: Particular requirements for motor-starting relays	C22.2 No. 14 – Industrial Control Equipment	UL 508 – Industrial Control Equipment UL 60947 Series – Low-voltage switchgear and control gear		

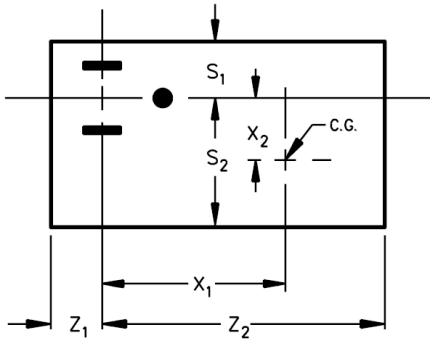
National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict

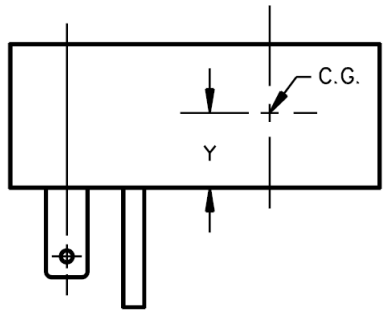
	24.1	Protective Devices (Arc Fault Circuit Interrupters, Ground-Fault Circuit Interrupters	N/A	CSA Technical Information Letter No. M-02A Interim Requirements for Arc-Fault Circuit Interrupters CAN/CSA C22.2 No. 144.1 – Ground Fault Circuit Interrupters	UL 1699 – Arc Fault Circuit Interrupters UL 943 – Ground-Fault Circuit Interrupters	P
	24.1, 19.1	Circuit Breakers, branch circuit and Supplementary type		C22.2 No. 5 – Molded Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures C22.2 No. 235 – Supplementary Protectors	UL 489 – Moulded-Case Circuit Breakers, Moulded-Case Switches and Circuit-Breaker Enclosures UL 1077 – Supplementary Protectors for Use in Electrical Equipment	
	24.1, 19.1	Fuses branch circuit and Supplementary type		CAN/CSA-C22.2 No. 248.1 – Low-Voltage Fuses – all parts as applicable	UL 248-1 – Low-Voltage Fuses – all parts as applicable	
	24.1, 19.12	Miniature fuse – link	IEC 60127 –	CAN/CSA-C22.2 No. 248.14 IEC 60127 fuses meeting the criteria of 19.12 provided that they also are subject to Routine Tests applicable to the relevant UL / CSA 248-14 standard are also acceptable		
	24	Fuseholders	IEC 60127-6 – Miniature fuses – Part 6: Fuse-holders for miniature cartridge fuse-links	C22.2 No. 39 – Fuseholder Assemblies or CAN/CSA-E60127-6 – Miniature fuses – Part 6: Fuse-holders for miniature cartridge fuse-links or CAN/CSA-C22.2 No. 4248.1 – (and all parts) Fuseholders – Part 1: General Requirements	UL 4248-1 – Fuseholders – (and all parts)	
	24.1.2, 17	Transformers	IEC 61558-1 – Safety of power transformers, power supply units and similar Part 1 General requirements and tests IEC 61558-2-6 – Part 2: Particular requirements for safety isolating transformers for general use	CSA C22.2 No. 66.1 – Low Voltage Transformers - Part 1: General Requirements or CAN/CSA-E61558-1 – Safety of power transformers, power supplies, reactors and similar products — Part 1: General requirements and tests or CAN/CSA-E61558-2-6 – Safety of power transformers, power supply units and similar – Part 2: Particular requirements for safety isolating transformers for general use	UL 5085-1 – Low Voltage Transformers - Part 1: General Requirements	
	24.1.2	SAFETY ISOLATING TRANSFORMERS (For appliances with accessible output terminals supplied solely by a transformer serving as a LIMITED POWER SOURCE as described in Clause 3.10DV.)	IEC 61558-2-6 – Safety Isolating Transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers	CSA 22.2 No. 66.3 – Low Voltage Transformers Part 3: Class 2 and Class 3 Transformers	UL 5085-3 – Low Voltage Transformers Part 3: Class 2 and Class 3 Transformers	
	24.1	Sheathed Heating Elements [The construction requirements of the international standard are sufficient unless otherwise specified in a part 2 standard. The referenced standard fulfils the requirements of the international standard.]	N/A	CSA C22.2 No. 72 – Heater elements	UL 1030 – Sheathed Heating Elements	
	24.1	Heater Elements [The construction requirements of the international standard are sufficient unless otherwise specified in a part 2 standard. The referenced standard fulfils the requirements of the international standard.]		CSA C22.2 No. 72 – Heater elements	N/A	
	24, Annex DVC	Direct Plug-in and External Power Supplies	N/A	CAN/CSA-C22.2 No. 223 – Power Supplies With Extra-Low-Voltage Class 2 Outputs Or CSA C22.2 No. 107.1 – General Use Power Supplies (no pins exposed)	UL 1310 – Class 2 Power Units UL 1012 – Power Units Other Than Class 2 (no pins exposed)	
	24	Battery Chargers	IEC 60335-2-29 – Particular requirements for battery chargers	CAN/CSA-C22.2 No. 107.2 – Battery Chargers or CAN/CSA-E60335-2-29 – Household and Similar Electric Appliances – Safety – Part 2-29: Particular requirements for battery chargers	UL 1310 – Class 2 Power Units UL 1012 – Power Units Other Than Class 2 (no pins exposed)	
	24.1	Batteries *[In the international appliance standard, batteries and battery packs are not evaluated as a component. Lithium chemistries are evaluated in the binational standard.]*	N/A	CAN/CSA-E-62133 Lithium: CAN/CSA-C22.2 No 0-10 (R2015) – General requirements; – Canadian Electrical Code, Part II, Clause 5.22	UL 1642 – Lithium Batteries UL 2575 – Lithium Ion Battery Systems for Use in Electric Power Tool and Motor Operated, Heating and Lighting Appliances	

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict

	24.1.1, 24.5, 24.8	Capacitors	IEC 60252-1 – AC motor capacitors – Part 1: General – Performance testing and rating – Safety requirements – Guide for installation and operation	N/A CSA C22.2 No. 190 – Capacitors for Power Factor Correction CSA Technical Information Letter No. D-26 – Component Capacitors: dry, metallized film element self-protecting type NOTE The above apply to specific types of self-protected capacitors and are not mandatory for other types.	UL 810 – Capacitors (Marked "protected" or "internally protected")		P
			IEC 60384-14 – Fixed Capacitors for Use in Electronic Equipment – Part 14: Sectional Specification: Fixed Capacitors for Electromagnetic Interference Suppression and Connection to the Supply Mains	CAN/CSA-E60384-14 – Fixed capacitors for use in electronic equipment – Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains	UL 60384-14 – Fixed Capacitors for Use in Electronic Equipment – Part 14: Sectional Specification: Fixed Capacitors for Electromagnetic Interference Suppression and Connection to the Supply Mains		
	24.1	EMI Filters	N/A	C22.2 No. 8 – Electromagnetic Interference (EMI) Filters	UL 1283 – Electromagnetic Interference Filters		
	24.1, 19.11.2 d)	Surge Suppressors *[The international standard for appliances considers varistor-type surge PROTECTIVE DEVICES to be ELECTRONIC COMPONENTS.]*	N/A	The appropriate part of the CSA C22.2 No. 269 series – Surge Protective Devices	UL 1449 – Surge Protective Devices		
	24.1	Optical Isolators	N/A	CSA Component Acceptance Notice No 5A. Component Acceptance Service for Optocouplers and Related Devices	UL 1577 – Optical Isolators *[NOTE Optical isolators that bridge REINFORCED or DOUBLE INSULATION are required to comply with* UL 1577*'s double protection requirements]*		
	24.1.6	Lampholders	IEC 60238 – Edison screw lampholders	C22.2 No. 43 – Lampholders	UL 496 – Lampholders UL 8754 – Holders, Bases, and Connectors for Solid-State (LED) Light Engines and Arrays		
	24.1	Electric Fans	IEC 60335-2-80	C22.2 No. 113 – Fans and Ventilators	UL 507 – Electric Fans		
	24.1.5, 24.4, 22.52	Attachment Plugs, Couplers, Connectors, and Socket Outlets *[In the international appliance standard, attachment plugs are not considered to be part of the appliance. They are part of the appliance in the binational standard.]*	IEC 60320 – Appliance couplers for household and similar general purposes – Part 1: General requirements	C22.2 No. 42 – General Use Receptacles, Attachment Plugs, and Similar Wiring Devices CAN/CSA-C22.2 No. 60320-1 – Appliance couplers for household and similar general purposes – Part 1: General requirements	UL 498 – Attachment Plugs and Receptacles UL 60320-1 – Appliance couplers for household and similar general purposes – Part 1: General requirements		
			IEC 60320-2-2 – Interconnection couplers for household and similar equipment IEC 60320-2-3 – Appliance couplers for household and similar general purposes –Appliance coupler with a degree of protection higher than IPX0	C22.2 No. 42 – General Use Receptacles, Attachment Plugs, and Similar Wiring Devices C22.2 No. 182.2 – Industrial Locking Type, Special Use Attachment Plugs, Receptacles, and Connectors C22.2 No. 182.3 – Special Use Attachment Plugs, Receptacles, and Connectors	UL 498 – Attachment Plugs and Receptacles		
			IEC 60309 (all parts) – Plugs, socket-outlets and couplers for industrial purposes	C22.2 No. 182.1 – Plugs, Receptacles, and Cable Connectors of the Pin and Sleeve Type	UL 1686 – Pin and Sleeve Configurations		
	24, 28	Electrical Connections (not including terminals for external conductors) *[The international standard for appliances does not consider the means for electrical connection to be components. The binational standard considers them to be components. The references to electrical connection standards in this Annex is a convenience in lieu of doing so in 28.5DV.]*		C22.2 No. 153 – Electrical quick-connect terminals C22.2 No. 153 – Electrical quick-connect terminals C22.2 No. 158 – Terminal Blocks	UL 310 – Electrical Quick-Connect Terminals UL 1059 – Terminal Blocks		
				C22.2 No. 65 – Wire Connectors	UL 486A-486B – Wire Connectors		
				C22.2 No. 188 – Splicing Wire Connectors	UL 486C – Splicing Wire Connectors		
				C22.2 No. 65 – Wire Connectors	UL 486E – Equipment Wiring Terminals for Use with Aluminum and/or Copper Conductors		
	24, 26	Terminals for External Conductors (Field Wiring Terminal Blocks) *[The international standard for appliances does not consider the means for electrical connection to be components. The binational standard considers them to be components.]*	N/A	C22.2 No. 158 – Terminal Blocks	UL 1059 – Terminal Blocks		
				N/A	UL 60947-7-1 – Low-Voltage Switchgear and Controlgear – Part 7-1: Ancillary Equipment – Terminal Blocks for Copper Conductors UL 60947-7-2 – Low-Voltage Switchgear and Controlgear – Part 7-2: Ancillary Equipment – Protective Conductor Terminal Blocks for Copper Conductors UL 60947-7-3 – Low-Voltage Switchgear and Controlgear – Part 7-3: Ancillary Equipment – Safety Requirements for Fuse Terminal Blocks		
				C22.2 No. 65 – Wire Connectors	UL 486A-486B – Wire Connectors		
					UL 486E – Equipment Wiring Terminals for Use with Aluminum and/or Copper Conductors		

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict

	24.1.7 Tele- communications Networks Interface Circuitry / IEC 62151 – Safety of Equipment Electrically Connected to a Telecommunication Network / CAN/CSA C22.2 No. 60950-1 – Information Technology Equipment Safety - Part 1: General Requirements; CAN/CSA-C22.2 No. 62368-1 – Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements / UL 60950-1 – Information Technology Equipment Safety – Part 1: General Requirements; UL 62368-1 – Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements 24.1 (7.14) Marking and Labeling *[The international standard for appliances does not consider the means for marking and labeling to be components. The binational standard considers them to be components.]* / N/A / Labels for household appliances intended for use indoors are required to comply with either the requirements of IEC 60335-1 clause 7.14 or Types A, B or C for indoor use in CSA C22.2 No. 0.15 – Adhesive Labels. Labels for commercial appliances intended for use indoors are required to comply with the requirements for Types A, B or C for indoor use in CSA C22.2 No. 0.15 – Adhesive Labels. Labels for appliances intended to be used outdoors are required to comply with the requirements for Types A, B or C for outdoor use in CSA C22.2 No. 0.15 – Adhesive Labels. / UL 969 – Marking and Labeling Systems		P
Annex DVB	D2 Reserved for future use		N/A
Annex DVC	DC Add Annex DVC as follows:		N/A
	DVC.1 Maximum tipping moment		N/A
	DVC.1.1 A device shall comply with the maximum tipping moment requirement specified in DVC.1.2, Table DVC.1, and Figure DVC.1.		N/A
	DVC.1.2 The limits specified in Table DVC.1 shall be determined as follows: a) A directly-mounted accessory shall be in place; and b) A removable part shall be in place		N/A
	Table DVC.1 – Maximum Tipping Moment (See Clauses DVC.1.1 and DVC.1.2.) Algebraic quantity: W / WY/Z / WY/S / WgX (WX) Maximum acceptable value: 0,79 kg (28 oz) / 1,36 kg (48 oz) / 1,36 kg (48 oz) / 0,56 N·m (80 oz-in) In this table the variables are defined as follows: W = the weight of the device in kg (oz) and is considered to be a force equal to the device mass of kg (oz) as measured on a scale or balance. Y = the distance, in meters (inches), illustrated in Figure DVC.1. Z = the shorter distance, in meters (inches), of Z_1 or Z_2, illustrated in Figure DVC.1. S = the shorter distance, in meters (inches), of S_1 or S_2, illustrated in Figure DVC.1. g = acceleration due to gravity, 9,806 meters/sec^2 X = the longer distance, in meters (inches), of X_1 or X_2, illustrated in Figure DVC.1.		N/A
	 FRONT VIEW		P

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	 SIDE VIEW C.G. = Center of Gravity		P
Annex DVD	D2 Add Annex DVD as follows (Canada only):		N/A
	DVD.1 A sample of the appliance or part shall be evaluated with the sample placed with the adhesive secured part(s) on the underside.		N/A
	DVD.2 Condition the sample in an oven at one of the following temperatures for the time durations specified: a) 100°C± 2°C for one week; b) 90°C± 2°C for three weeks; or c) 82°C± 2°C for eight weeks		N/A
	DVD.3 Upon completion of the temperature conditioning: a) Remove the sample from oven and leave it at any convenient temperature between 20°C and 30°C for 1 h. b) Place the sample in a freezer at -40°C± 2°C for 4h. c) Remove and allow the sample to come to any convenient temperature between 20°C and 30°C for 8 h. d) Place the sample in a cabinet at 91% to 95% relative humidity for 72 h. e) Remove the sample and leave it at any convenient temperature between 20°C and 30°C for 1 h. f) Place the sample in an oven at the temperature used for the temperature conditioning for 4h. g) Remove the sample and allow it to reach any convenient temperature between 20°C and 30°C for 8 hrs.		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict

	DVD.4 The sample shall then be immediately subjected to the following tests: a) For NON-DETACHABLE PARTS, the force and torque tests of 22.11 and the impact test of Clause 21. The NON-DETACHABLE PART shall not fall off or partly dislodge as a result of these tests. b) For other parts, a pull force of 2N without separating the adhesive bond.		N/A
	DVD.5 With the concurrence of the manufacturer, any of the above time durations may be increased as specified in DVD.2 or DVD.3.		N/A
	DVD.6 Additional testing might need to be conducted if the ENCLOSURE is exposed to oils and solvents during NORMAL OPERATION.		N/A

ATTACHMENT TO TEST REPORT IEC 60335-2-8

National Differences included in the UL adoption of the corresponding IEC standard

Safety of household and similar electrical appliances

Part 2: Particular requirements for battery chargers

Differences according to	**:**	UL 60335-2-8 Ed.6: Dated June 25, 2018
Attachment Form No.	**:**	-
Attachment Originator	**:**	-
Master Attachment	**:**	2020-09

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1	Scope		--
	1 DV.1 DR Modification of the second paragraph and Note 101 of the part 2 by replacement with the following:		--
	This International Standard deals with the safety of electric shavers, hair clippers, epilators and similar appliances intended for household and similar purposes, their RATED VOLTAGE being not more than 250 V and intended to be installed or used in accordance with NFPA 70, National Electrical Code (NEC).		--
	Hair clippers and shavers incorporating a suction feature to collect clippings or shavings during operation are also covered by this standard.		--
	1 DV.2 D2 Modification of Note 104 of the Part 2 by the addition of the following dashed items:		--

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	- lather makers (UL 499); - barber shop vacuum cleaners for use on persons (UL 1017) - manicure, pedicure, or personal grooming appliances used for similar purposes (UL 859). However, hair clipping and shaving appliances supplied with manicure, pedicure, or other similar attachments or accessories are investigated under these requirements and such additional requirements as are applicable to the appliance under consideration. - lasers and Intense light source hair removal devices (UL 60601).		--
3	Terms and definitions		--
3.1.9DV	D2 Modification to replace the second paragraph and Note 101 with the following:		--
	The appliance is held by appropriate means so as to have negligent effect on blade movement, temperature and load. It is held with it major axis and the major axis of the cutting head or other accessory positioned in a horizontal plane and operated without applying a load.		--
3.101 DV	D2 Modification to replace the definition for animal shearer with the following:		P
	ANIMAL SHEARER: appliance for commercial use for shearing the fleece of an animal such as a sheep, in which the distance between the stationary blade teeth is typically large enough to introduce a risk of personal injury.		P
3.103DV	D2 Modification to replace 3.103 with the following:		P
	WASHABLE APPLIANCE: appliance, the hand-held part of which can be cleaned under water		P
	NOTE: Where the term washable shaver Is used throughout the standard, this Is also applicable to other washable appliances.		P
3.104DV	D2 Modification to replace 3. 104 with the following:		N/A
	WET APPLIANCE: appliance, the hand-held part of which may be used in a bath or shower		N/A
	NOTE: Where the term wet shaver is used throughout the standard, this is also applicable to other wet appliances.		N/A
5	General conditions for the tests		P
5.8.2DV	D2 Modification to add the following:		P

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	During the required tests for a cLAss III APPLIANCE, each USB connection shall be connected to an independent 5,25 V dc, 8 A capacity DC source of supply unless otherwise indicated. If the appliance has a USB power delivery connection, the voltage shall instead be 21,5 V or 1,05 times the declared operating voltage if less than 20 V. When it is stated that the supply voltage is the RATED VOLTAGE multiplied by a factor, this is disregarded for a cLAss 111 APPLIANCE.		P
6	Classification		P
6.1 DV.1	D2 Replacement of the second paragraph of 6. 1 of the Part 2 with the following:		P
	WASHABLE SHAVERS and WET SHAVERS shall be CLASS,, CLASS II or CLASS Ill.		P
6.1 DV.2	D2 Modification to add the following:		N/A
	cLAss III APPLIANCES are allowed for appliances powered or charged via a USB connection.		N/A
7	Marking and instructions		P
7.1DV.101	DR Modification to add the following:		P
	A cLAss 0, cLAss, or CLASS II appliance shall be rated for use on a 120 V branch circuit. The RATED voLTAGE shall be 115, 120 or 125 V or the RATED voLTAGE RANGE shall include 120 V.		P
7.10DV	D2 Modification to add the following to 7.10 of the UL part 1:		P
	A manually operated motor-control switch for an appliance that indicates disconnection from the mains, as required by 22.40DV, shall have a plainly identified OFF POSITION.		P
7.12DV.1	D2 Modification to replace the first, second, third, and fourth paragraphs of 7. 12 of the Part 2 addition with the following:		P
	The instructions shall state whether the appliance is intended for household or commercial use.		P
	If the blade temperatures exceed the limit for handles held for short periods only in Table 3, the instructions for ANIMAL CLIPPERS for commercial use and ANIMAL SHEARERS shall include the substance of the following.		P
	WARNING: Cutting blades may become hot after prolonged use.		P
	If a symbol is used in place of required marking text, such as for the OFF Pos1r10N in 7.10DV, WET SHAVERS or WASHABLE SHAVERS in 7.1, its meaning shall be explained.		P
7.12DV.2	D2 Modification to replace the sixth paragraph of 7. 12 of the Part 1 with the following:		N/A
	The instructions for CLASS III APPLIANCES shall include the substance of the following and shall warn against using unapproved sources:		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	Use only with a USB Power Source on a certified product, such as on a computer, receptacle, lamp, class 2 power supply or automotive adaptor.		N/A
7.12DV.3	D2 Addition of 7.12DV.3.1 - 7.12DV.3.4 to the part 2:		P
	7.12DV.3.1 The instructions shall include the substance of the items in the following list, as applicable, and any other instructions that the manufacturer requires for the appliance. The statement "Read all instructions before using" shall precede the list of items following the word "DANGER." The items are not required to be numbered.		P
	IMPORT ANT SAFETY INSTRUCTIONS		P
	When using an electrical appliance, basic precautions are required to always be followed, including the following: Read all instructions before using (this appliance) DANGER - To reduce the risk of electric shock:		P
	1. Do not reach for an appliance that has fallen into water. Unplug immediately from receptacle. (This statement is not needed for a wet shaver, or other appliances intended for use in a bath or shower.) 2. Do not use while bathing or in a shower. (This statement is not needed for a wet shaver, or other appliances intended for use in a bath or shower.) 3. Do not place or store appliance where it is able to fall or be pulled into a tub or sink. Do not place in or drop into water or other liquid. (This statement is not needed for a wet shaver, or other appliances intended for use in a bath or shower.) 4. Except when charging, always unplug this appliance from the electrical outlet immediately after using. 5. Unplug this appliance before cleaning.		P
	WARNING - To reduce the risk of burns, fire, electric shock, or injury to persons:		P
	1. An appliance shall never be left unattended when plugged in. (This statement need not be included for a battery-operated appliance that must be recharged.) 2. This appliance is not intended for use 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 concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance. 3. Use this appliance only for its intended use as describe in this manual. Do not use attachments not specified by the manufacturer.		P

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	4. Never operate this appliance when it has a damaged cord or plug, when it is not working properly, after it has been dropped or damaged, or after it has been dropped into water. Return the appliance to a service center for examination and repair. 5. Keep the cord away from heated surfaces. 6. Keep the air openings free of lint, hair, and similar objects. 7. Never drop or insert any object into any opening. 8. Do not use outdoors or operate while aerosol (spray) products are being used. 9. Do not use this appliance with a damaged or broken comb, as it has the potential to result in facial injury. 10. Always attach plug to appliance first, then to outlet. To disconnect, turn all controls to off position (e.g. "O") then remove plug from outlet. SAVE THESE INSTRUCTIONS		P
7.12DV.3.2	As applicable, the following instructions shall be included in the list, following the word"WARNING," in addition to the instructions specified in 7.12DV.3.1:		P
	a)For a CLASS I APPLIANCE: Connect this appliance to a properly grounded outlet only. See Grounding Instructions b)For an ANIMAL CLIPPER or ANIMAL SHEARER: Do not charge, place or leave the appliance where it is expected to be: 1) Subject to damage by an animal, or 2) Exposed to weather. c)For a wall-hung appliance: Periodically inspect the wall unit for secure mounting. d)For a dual-voltage appliance: 1) Be sure dual-voltage selector is in the correct voltage position before operating. Before plugging in, read the information about dual voltage contained in the instruction section of this manual. 2)"This appliance was set at the factory to operate at—volts. Refer to Operating Instructions section of this manual for conversion to _ volt operation or the equivalent." The blanks are to be filled in with the applicable voltage information.		P
	e) For an appliance or DETACHABLE SUPPLY 1)UNIT with pins for insertion into the socket-outlet (See Figure B.25.7DV.1 appliance configurations Dor E):Plug charger directly into receptacle - do not use an extension cord. 2) Unplug charger before plugging or unplugging appliance.		P

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	f)For appliances provided with a liquid cleaning system: 1) Use only on a level surface. 2) Unplug this appliance before filling. Use only cleaning solution recommended by the manufacturer. Do not overfill (or specify filling instructions). 3) Use only liquid cleaning system provided or recommended by manufacturer. 4) Unless the cleaning solution is not considered to be flammable: "The cleaning solution is flammable. Avoid flame, hot surfaces or smoking during use. Keep out of reach of children. Store in a well-ventilated, cool area."		P
7.12DV.3.3	This instruction in 7.12DV.3.2(d) does not apply to an appliance that operates over a range of voltages and does not require adjustment by the user. For example, an appliance that uses a switch mode power supply intended for use over a range of voltages and does not require adjustment by the user.		P
7.12DV.3.4	The required important safety instructions, installation instructions, and user servicing instructions shall be provided in an instruction sheet, manual, booklet, or similar printed material, and shall be repeated in any electronic media instructions provided. All other instructions may be provided in electronic read-only media format only, such as CD-ROM. The printed instruction material shall contain detailed instructions of how to obtain a printed copy of the material contained in electronic format.		P
7.12.2DV	D2 Modification to add the following to 7.12.2 of the UL part 1:		N/A
	Cord-connected, cLAss I appliances shall be provided with the substance of the following Grounding Instructions.		N/A
	Grounding Instructions		N/A
	This appliance should be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This appliance is equipped with a cord having a grounding wire with an appropriate grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.		N/A
	DANGER - Improper use of the grounding plug can result in a risk of electric shock.		N/A
	If repair or replacement of the cord or plug is necessary, do not connect the grounding wire to either flat-blade terminal. The wire with insulation having an outer surface that is green with or without yellow stripes is the grounding wire.		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the appliance is properly grounded. Do not modify the plug provided; if it will not fit the outlet, have the proper outlet installed by a qualified electrician.		N/A
7.14DV	D2 Modification of 7.14 to add the following:		P
	The signal words Warning, Caution, and Danger shall be in uppercase letters having a height not less than:		P
	- 3,5 mm for appliances normally used on the floor; - 2,0 mm for portable appliances with a printable surface of less than 1 O cm and - 3,0 mm for other appliances.		P
	Uppercase letters of the text explaining the signal word shall be no smaller than 1,6 mm, with other letters according to the font size of the uppercase letter. Unless contrasting colors are used, molded in, engraved, or stamped markings shall be either raised above or have a depth below the surface of at least 0,25 mm.		P
7.101 DV	D2 Addition:		P
	Unless the cleaning solution is not considered to be flammable, the cleaning reservoir shall be marked with the following:		P
	The cleaning solution is flammable. Avoid flame, hot surfaces or smoking during use. Keep out of reach of children. Store in a well-ventilated, cool area.		P
11.3DV	D2 Modification to replace the fifth paragraph and the first line of the sixth paragraph of 11.3 of the Part 1 with the following:		P
	Temperature rises of windings are determined by thermocouples or the resistance method. At the beginning of the test, the windings are to be at room temperature.	Thermocouples	P
	When using the resistance method, the temperature rise of a winding is calculated from the following formula:		N/A
	$\Delta t = \frac{R_2 - R_1}{R_1}(k + t_1) - (t_2 - t_1)$		N/A
	where		N/A
	Δt is the temperature rise of the winding		N/A
	R1 is the resistance at the beginning of the test;		N/A
	R2 is the resistance at the end of the test;		N/A
	k is equal to		N/A
	• 225 for aluminium windings and copper/aluminium windings with an aluminium content ;85 %,		N/A
	• 229, 75 for copper/aluminium windings with an copper content > 15 % to < 85 %,		N/A

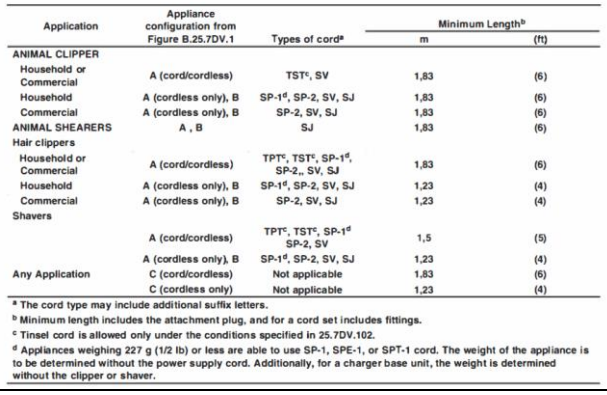
National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	234,5 for copper windings and copper/aluminium windings with an copper content; 85 %;		N/A
	t1 is the room temperature at the beginning of the test;		N/A
	t2 is the room temperature at the end of the test.		N/A
11.5DV	D2 Modification to replace 11.5 of the part 1:		P
	MOTOR-OPERATED APPLIANCES are operated under NORMAL OPERATION and supplied at 120 V, and for appliance with a RATED VOLTAGE other than 120 V, the test shall be repeated at the RATED VOLTAGE or at the most unfavourable voltage of the RATED VOLTAGE RANGE.		P
11.6DV	D2 Modification to replace 11.6 of the part 1:		N/A
	coMBINEo APPLIANCES are operated under NORMAL OPERATION and supplied at 120 V, and for appliance with a RATED voLTAGE other than 120 V, the test shall be repeated at the RATED VOLTAGE or at the most unfavorable voltage of the RATED VOLTAGE RANGE.		N/A
11. 7DV	D2 Modification to replace the second and third paragraphs of 11. 7 of the part 2 with the following:		P
	ANIMAL CLIPPERS for commercial use, ANIMAL SHEARERS, and other commercial appliances are operated for 5 min followed by a rest period of 5 min. This cycle of operation is repeated until steady conditions are established.		P
11.8DV.1	D2 Modification to replace the 1st sentence of 11.8 of the Part 2 addition with the following:		P
	The temperature rise of parts that are in contact with skin in normal use, or are held in the hand, shall not exceed the limits specified for handles which are continuously held in normal use. The temperature rise of parts that are in contact with hair in normal use, but only contact the skin for short periods, such as the blades of a hair clipper or trimmer, shall not exceed the limits specified in Table 11.8DV.		P
	Table 11.8DV Temperature rise limits for blades in contact with hair during normal use Surfaces of parts in contact with hair in normal use — Temperature rise, K – of bare metal — 40 – of coated metal — 44 – of porcelain or vitreous material — 50 – of plastic having a thickness exceeding 0,4 mm — 65 [a] The temperature limits are based on the limits in Table 3 of the Part 1 for handles held for short periods only for normal use, but are increased 5°C to accommodate for the reduction in blade temperatures when the appliance is moved during normal operation.		P
11.8DV.2	D2 Modification to add the following to 11.8:		P
	For appliances provided with a heated cleaning reservoir, surfaces in contact with the cleaning fluid shall not exceed 50°C unless the cleaning solution is suitable for use at higher temperatures or not considered to be flammable.		P
17DV	DC Modification to add the following Note to Clause 17 of the part 1		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
	NOTE 101 This test is not applicable for transformers or power supplies complying with the standards specified In Annex DVA or those supplied from a LIMITED POWER SOURCE.	LIMITED POWER SOURCE Used.	N/A
19.7DV	D2 Modification to add the following Notes to 19.7 of the part 2:		N/A
	NOTE 101 The movable portion of a vibrating armature is to be locked In the unenergized position.		N/A
	NOTE 102 This test is not applicable for products supplied from a LIMITED POWER SOURCE.	LIMITED POWER SOURCE Used.	N/A
21.1 DV.101	D2 Modification to add the following to 21. 1:		P
	The polymeric enclosure of a HAND-HELD APPLIANCES or a hand-held part of an appliance shall instead comply with the Drop Impact Test of UL 746C.		P
22.36DV	D2 Modification to replace the Part 2 addition with the following:		P
	For appliances having a RATED VOLTAGE exceeding 150 V, hand-held parts shall be cLAss 11 CONSTRUCTION or CLASS lll CONSTRUCTION.	CLASS lll CONSTRUCTION	P
22.40DV	D2 Modification to replace the first paragraph of 22.40 with the following:		N/A
	A manually operated motor-control switch shall be provided if operation of the appliance presents a risk of injury, such as for ANIMAL SHEARERS, or in a cord-connected appliance that employs a motor rated more than 1/3 hp (250 W output).		N/A
22.52DV	D2 Replace 22.52DV of the Part 1 with the following:		P
	Socket-outlets are not allowed on products covered under the scope of this standard.		P
22.54DV	D1 Modification to replace 22.54 of the Part 1 by the following:		N/A
	To reduce the risk of injury due to battery ingestion, the battery compartment of an appliance or any accessory, such as a wireless control, incorporating one or more coin cell batteries of lithium technologies shall comply with the Standard for Products Incorporating Button or Coin Cell Batteries of Lithium Technologies, UL 4200A, if the appliance or any accessory:		N/A
	a) Is intended for use with one or more single cell batteries having a diameter of 32 mm (1,25 in) or less where the cell diameter is greater than its height; and b) The appliance is intended for household use.		N/A
24.1 DV	DC Modification to add the following:		N/A
	Components complying with Annex OVA are considered to comply with 24.1DV.4 - 24.1 DV.8 of the Part 1.		N/A
24.1.3DV	D2 Modification to replace the first paragraph by the following:		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict

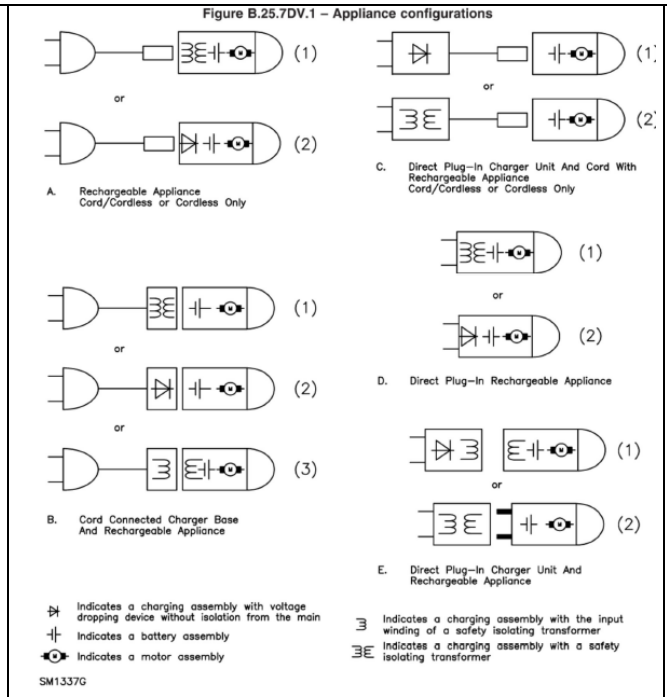
	For switches incorporated in ANIMAL cuPPERs for commercial use and hair clippers for hair dressers, the number of cycles of operation declared for Subclause 7.1.4 of IEC 61058-1 shall be at least 10 000. For switches incorporated in ANIMAL SHEARERS, the number of cycles of operation declared for Subclause 7.1.4 of IEC 61058-1 shall be at least 50 000.		N/A
25.1 DV.101	DR Modification to add the following to 25.1 of the Part 1:		N/A
	An appliance having an appliance inlet for connection to the supply mains shall be provided with a DETACHABLE CORD. An appliance that is required to employ a polarized attachment plug as specified in 25.1DV.1.1 and that is supplied with a DETACHABLE coRo shall also employ an appliance inlet of the polarized type.		N/A
25.1 DV.1.1	DR Modification to replace 25.1 DV.1.1 of the Part 1 with the following:		N/A
	The SUPPLY CORD of appliances incorporating a screwshell type lampholder or manually operated, mains connected, single-pole switch intended for appliance on-off operation shall be fitted with a polarized attachment plug. The switch shall be electrically connected to a terminal or lead intended for connection to an ungrounded conductor of the supply circuit.		N/A
25.5DV	D2 Modification to replace the second sentence of 25.5 of the Part 2 addition with the following:		N/A
	TYPE X ATTACHMENT is not allowed.		N/A
25. 7DV	D2 Modification of 25. 7 by replacement of both the Part 1 and the Part 2 with 25.IDV.101 - 25.IDV.102:		N/A
	25.7DV.101 The flexible cord shall be of a length and Type as specified in Table 25.7DV.1.1 or shall have properties such that it is at least equally as serviceable for the appliance. Table 25.7DV.1.1 D2 Addition to the part 2:		N/A
	Table 25.7DV.1.1 – Cords for mains connected appliances Minimum Length[b] Application | Types of cord[a] | m | (ft) ANIMAL CLIPPERS | TST[c], SV | 1,83 | (6) ANIMAL SHEARER | SJ | 1,83 | (6) Hair clippers | TPT[c], TST[c], SP-1[d], SV | 1,83 | (6) Shavers | TPT[c], TST[c], SP-1[d], SV | 1,5 | (5) [a] The cord type may include additional suffix letters. [b] Minimum length includes the attachment plug, and for a cord set includes fittings. [c] Tinsel cord is allowed only under the conditions specified in 25.7DV.102. [d] Appliances weighing 227 g (1/2 lb) or less are able to use SP-1, SPE-1, or SPT-1 cord. The weight of the appliance is to be determined without the power supply cord.		N/A
	25.7DV.102 When a tinsel cord is employed, the appliance and cord shall comply with the following conditions:		N/A
	a) The cord shall not be longer than 2,45 m (8 ft); b) The cord shall be attached to the appliance directly or by means of a plug other than a standard flatiron or appliance plug;		N/A

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict

	c) The appliance rating shall not be more than 50 W; d) The cord is attached to the hand-held portion of the appliance so as to necessitate use of an extremely flexible cord; and e) The cord is not used for protective earthing.		N/A
Annex B	Appliances powered by rechargeable batteries that are recharged in the appliance		N/A
	Annex BDV DE Modification of Annex B of the Part 1:		N/A
	Annex B of the Part 1 is applicable except as follows:		N/A
	24 Components		N/A
B.24.1.3DV	DC Modification to add the following to Annex B:		N/A
	For switches in BATTERY-OPERATED APPLIANCES, 24.1.3 is only applicable when the switch is controlling a part that is considered to present a risk of injury, such as for an animal shearer.		N/A
B.25.7DV	D2 Modification to add the following to Annex B:		N/A
	The flexible cord shall be of a length and Type as specified in Table B.25.7DV.1 or shall be of a type at least equally serviceable for the appliance.		N/A
	Table B.25.7DV.1 02 Modification to add the following Table to Annex B:		N/A
	Table B.25.7DV.1 - Cords for rechargeable appliances		
	Table B.25.7DV.1 – Cords for rechargeable appliances 		N/A
	Figure B.25.7DV.1 D2 Modification to add the following to Annex B:		N/A

Application	Appliance configuration from Figure B.25.7DV.1	Types of cord[a]	Minimum Length[b] m	(ft)
ANIMAL CLIPPER				
Household or Commercial	A (cord/cordless)	TST[c], SV	1,83	(6)
Household	A (cordless only), B	SP-1[d], SP-2, SV, SJ	1,83	(6)
Commercial	A (cordless only), B	SP-2, SV, SJ	1,83	(6)
ANIMAL SHEARERS	A , B	SJ	1,83	(6)
Hair clippers				
Household or Commercial	A (cord/cordless)	TPT[c], TST[c], SP-1[d], SP-2,, SV, SJ	1,83	(6)
Household	A (cordless only), B	SP-1[d], SP-2, SV, SJ	1,23	(4)
Commercial	A (cordless only), B	SP-2, SV, SJ	1,23	(4)
Shavers				
	A (cord/cordless)	TPT[c], TST[c], SP-1[d] SP-2, SV	1,5	(5)
	A (cordless only), B	SP-1[d], SP-2, SV, SJ	1,23	(4)
Any Application	C (cord/cordless)	Not applicable	1,83	(6)
	C (cordless only)	Not applicable	1,23	(4)

[a] The cord type may include additional suffix letters.
[b] Minimum length includes the attachment plug, and for a cord set includes fittings.
[c] Tinsel cord is allowed only under the conditions specified in 25.7DV.102.
[d] Appliances weighing 227 g (1/2 lb) or less are able to use SP-1, SPE-1, or SPT-1 cord. The weight of the appliance is to be determined without the power supply cord. Additionally, for a charger base unit, the weight is determined without the clipper or shaver.

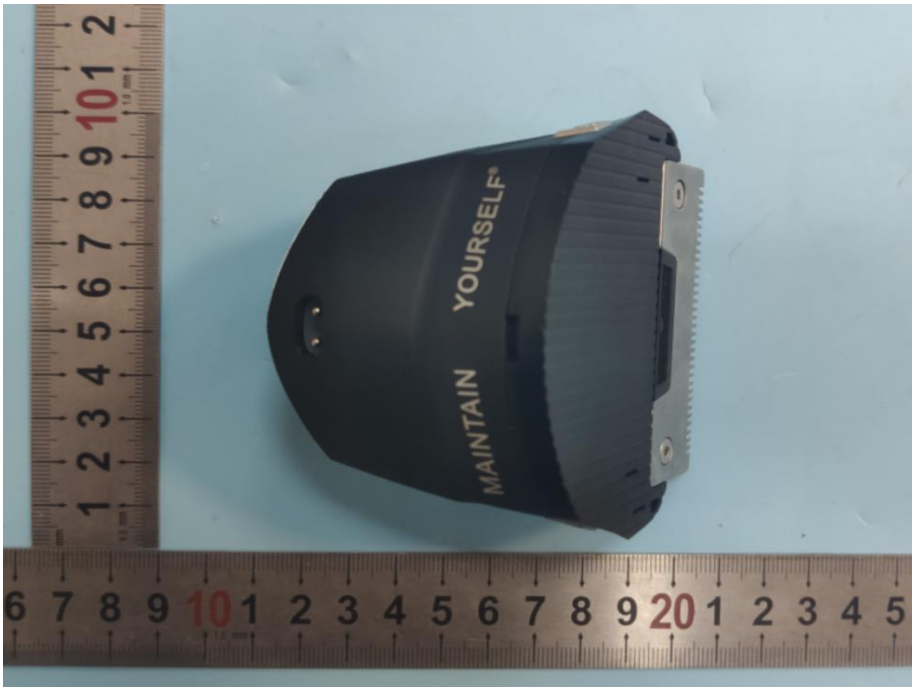
National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict
			N/A
Annex S	BATTERY·OPERATED APPLIANCES powered by batteries that are non-rechargeable or not recharged in the appliance		N/A
	Annex SDV DE Modification of Annex S of the Part 1:		N/A
	Annex S of the Part 1 is applicable except as follows:		N/A
S11.5DV	DE Modification to replace the first sentence of 11.5 of Annex S of the Part 1 with the following:		N/A
	Except for appliances intended for use with a BATTERY Box, BATTERY-OPERATED APPLIANCES are supplied at the terminals for the connection of the battery by means of an external power supply with the most unfavourable supply voltage between:		N/A
	- 0,55 and 1,0 times the battery voltage, if the appliance can be used with non-rechargeable batteries; - 0,75 and 1,0 times battery voltage, if the appliance is designed for use with rechargeable batteries only.		N/A
S25.5DV	D2 Delete 25.5 of Annex S of the Part 1.		P
Annex DVA	North American additional requirements		P
	Annex DVA.101 DC Modification of Annex OVA of the Part 1:		P
	Annex OVA of the Part 1 is applicable except as follows:		P
	Table DVA.1.101 Modification of Table DVA.1 of the Part 1 as follows:		P

National Differences included in the UL adoption of the corresponding IEC standard			
Clause	Requirement + Test	Result - Remark	Verdict

	24.1	Batteries [In the international appliance standard, batteries and battery packs are not evaluated as a component. Lithium chemistries are evaluated in the binational standard.]	N/A	CAN/CSA-E-62133 Lithium: CAN/CSA-C22.2 No 0-10 (R2015) – General requirements; – Canadian Electrical Code, Part II, Clause 5.22	UL 1642 – Lithium Batteries UL 2575 – Lithium Ion Battery Systems for Use in Electric Power Tool and Motor Operated, Heating and Lighting Appliances		P
			With the following:				
	24.1, Annex B and S	Batteries [In the international appliance standard, batteries and battery packs are not evaluated as a component. Lithium chemistries are evaluated in the binational standard.]	IEC 62133	CAN/CSA-E-62133 – Secondary Cells and Batteries Containing Alkaline or Other Non-Acid Electrolytes – Safety Requirements for Portable Sealed Secondary Cells, and for Batteries Made From Them, for Use in Portable Applications	UL 62133 – Secondary Cells and Batteries Containing Alkaline or Other Non-Acid Electrolytes – Safety Requirements for Portable Sealed Secondary Cells, and for Batteries Made From Them, for Use in Portable Applications		
	24.1, Annex DVC	Direct Plug-in and External Power Supplies	N/A	CAN/CSA-C22.2 No. 223 – Power Supplies With Extra-Low-Voltage Class 2 Outputs Or CSA C22.2 No. 107.1 – General Use Power Supplies (no pins exposed)	UL 1310 – Class 2 Power Units UL 1012 – Power Units Other Than Class 2 (no pins exposed)		P
			With the following:				
	24.1, Annex DVC	Direct Plug-in and External Power Supplies	N/A	CAN/CSA-C22.2 No. 223 – Power Supplies With Extra-Low-Voltage Class 2 Outputs	UL 1310 – Class 2 Power Units		
				CSA C22.2 No. 107.1 – General Use Power Supplies (no pins exposed)	UL 1012 – Power Units Other Than Class 2 (no pins exposed)		
			IEC 60950-1	CAN/CSA C22.2 No. 60950-1 – Information Technology Equipment – Safety – Part 1: General Requirements	UL 60950-1 – Information Technology Equipment – Safety – Part 1: General Requirements		
	19.7, 19.8, 19.9, Annex D	Thermal Motor Protection [Includes the motor protector and the combination of the motor and motor protector. Except where compliance with 19.7 - 19.9 and Annex D fulfils the referenced motor and thermal motor protection standards, the method of test and compliance criteria shall be that of those standards.]	IEC 60730-2-2 – Automatic Electrical Controls for Household and Similar Use; Part 2: Particular Requirements for Thermal Motor Protectors	C22.2 No. 77 – Motors with Inherent Overheating Protection C22.2 No. 100 – Motors and Generators CAN/CSA-E730-2-2 – Automatic electrical controls for household and similar use – Part 2: Particular requirements for thermal motor protectors NOTE For external motor overload protection devices, the applicable standard is CSA C22.2 No. 14.	UL 873 – Temperature-Indicating and Regulating Equipment UL 60730-2-2 – Automatic Electrical Controls for Household and Similar Use; Part 2: Particular Requirements for Thermal Motor Protectors UL 1004-1 – Rotating Electrical Machines - General Requirements UL 1004-2 – Impedance Protected Motors UL 1004-3 – Thermally Protected Motors UL 1004-7 – Electronically Protected Motors		P
	19.7, 19.8, 19.9, 24.1, Annex D	Motors and Motor Protection [Includes the motor protector and the combination of the motor and motor protector. A motor (construction only) not separately evaluated to UL 1004-1 may be evaluated to UL 60335-1 with the appliance. Motor overload protection complying with 19.7 – 19.9 and Annex D fulfils the referenced motor and thermal motor protection standards.]	N/A IEC 60730-2-2 – Automatic Electrical Controls for Household and Similar Use; Part 2: Particular Requirements for Thermal Motor Protectors N/A	C22.2 No. 77 – Motors with Inherent Overheating Protection C22.2 No. 100 – Motors and Generators CAN/CSA-E730-2-2 – Automatic electrical controls for household and similar use - Part 2: Particular requirements for thermal motor protectors NOTE For external motor overload protection devices, the applicable standard is CSA C22.2 No. 14.	UL 873 – Temperature-Indicating and Regulating Equipment UL 1004-1 – Rotating Electrical Machines – General Requirements UL 60730-2-2 – Automatic Electrical Controls for Household and Similar Use; Part 2: Particular Requirements for Thermal Motor Protectors UL 1004-2 – Impedance Protected Motors UL 1004-3 – Thermally Protected Motors UL 1004-7 – Electronically Protected Motors		P

Photo Documentation

Photo Documentation



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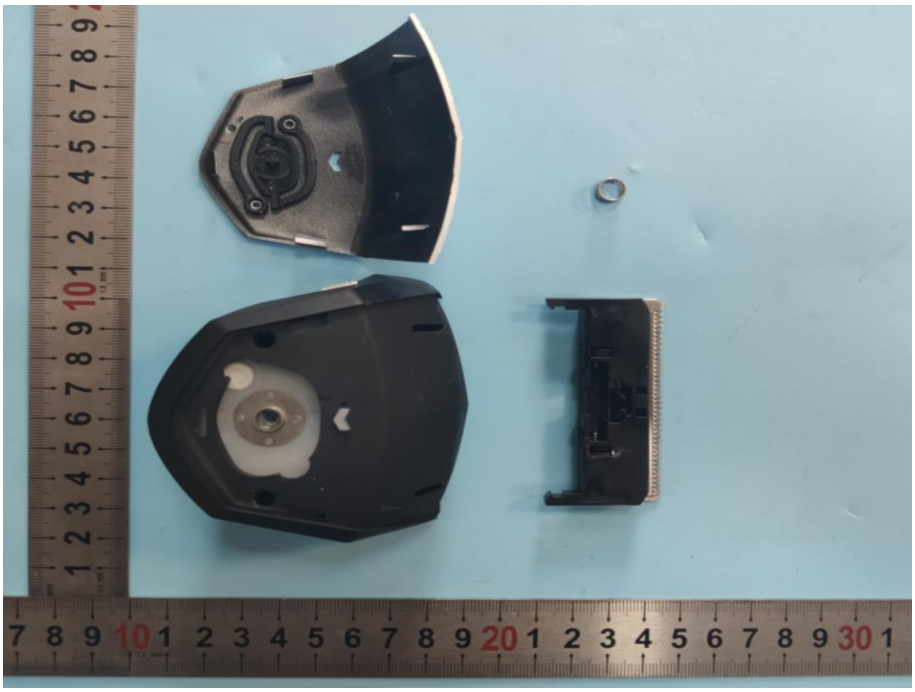

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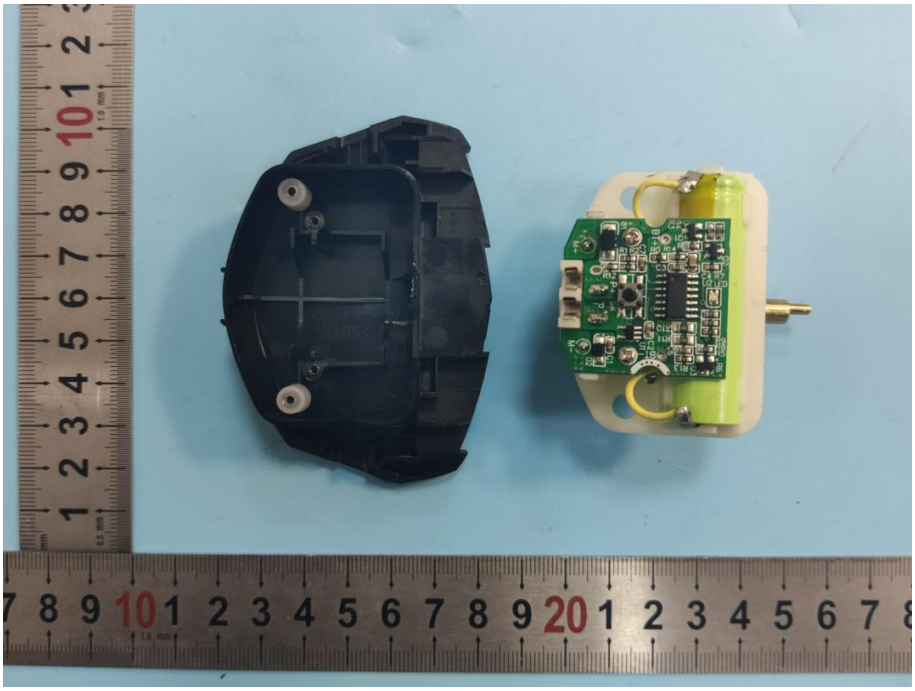

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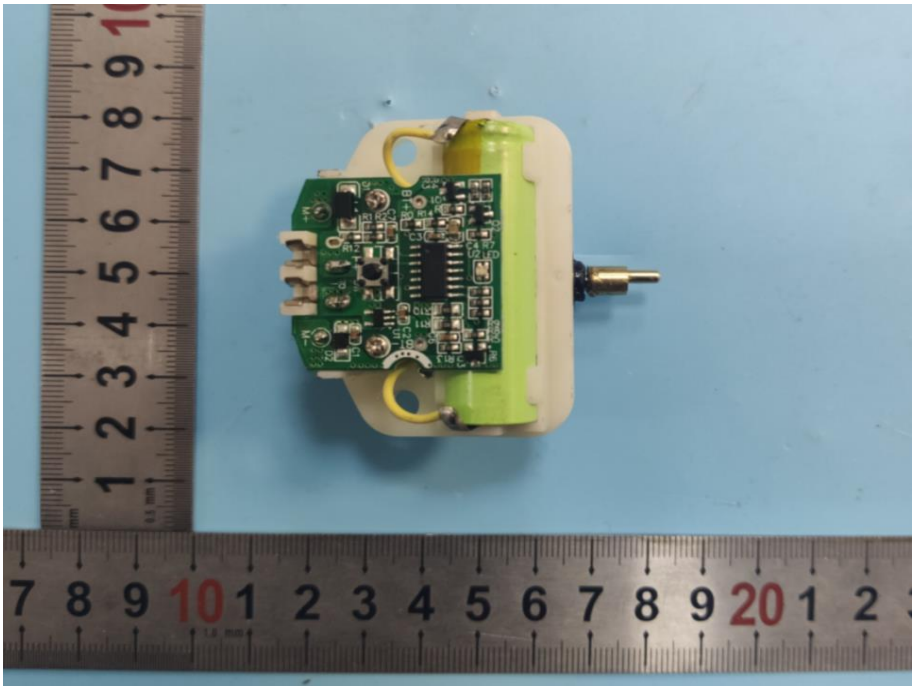

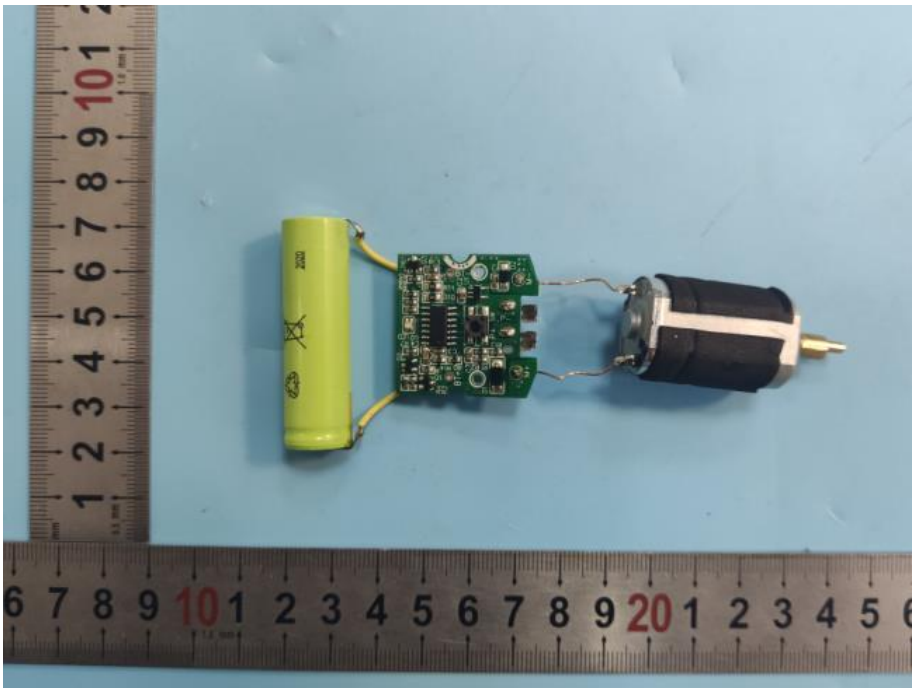

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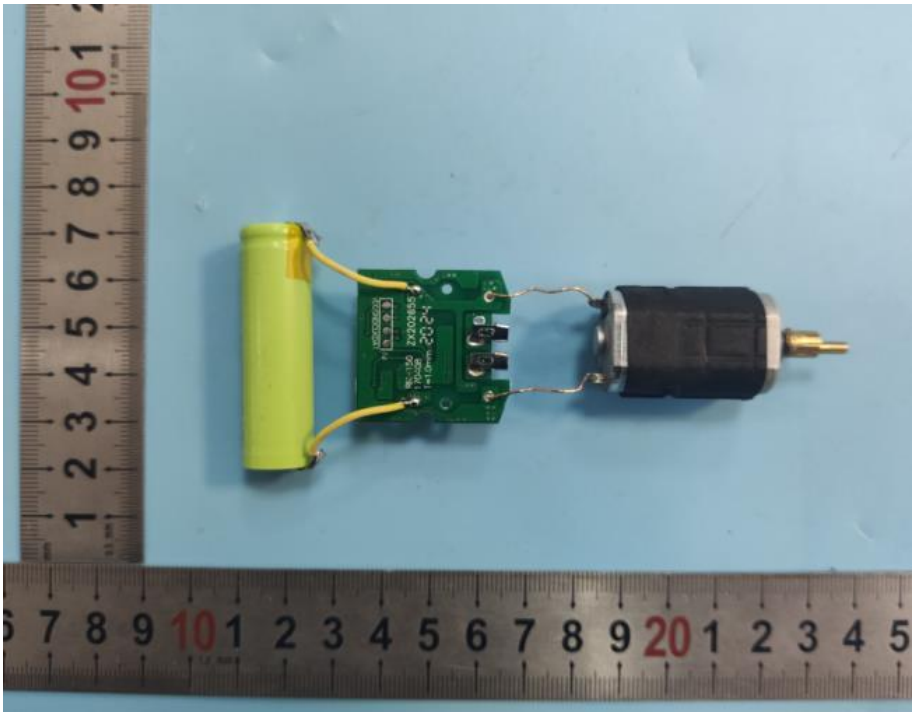

========== End of Report ==========