

TEST REPORT IEC 60598-2-4 Luminaires

Luminaires, Part 2: Particular requirements Section 4: Portable general purpose luminaires

Report Number.....: STUESO240300078LM

Date of issue.....: Mar. 29, 2024

Total number of pages: 60

Name of Testing Laboratory Standard Technology Union Co., Ltd

Guangzhou Economic & Technological Development Zone,

Guangzhou, Guangdong, China

Applicant's name: UV Lash Glue Cosmetics Ltd

Address Suite 06, 60 Churchill Square Kings Hill West Malling Me19 4YU

United Kingdom

Test specification:

Standard IEC 60598-2-4:2017 for use in conjunction with IEC 60598-1:2020

Test procedure: CE/LVD/UKCA

Non-standard test method: N/A

TRF template used.....: IECEE OD-2020-F1:2020, Ed.1.3

Test Report Form No.: IEC60598_2_41

Test Report Form(s) Originator: UL (US)

Master TRF: Dated 2021-06-10

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| Test item description:: | UV Eyelash Extension Lamp |
|-------------------------|---|
| Trade Mark(s): | |
| Manufacturer: | UV Lash Glue Cosmetics Ltd |
| Address: | Suite 06, 60 Churchill Square Kings Hill West Malling Me19 4YU United Kingdom |
| Model/Type reference:: | R007, R008, R009, R010, R011, R012, R013, R014, R015, R016. |
| Ratings:: | 5V===, LED, 5W, Class III, IP20; |
| | AC/DC adaptor Input: 100-240V~, 50/60Hz, 0,6A; Output: 5V===, 1,0A, 5W. |
| | (See general product information) |



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| Responsible Testing Laboratory (as applicable), testing procedure and testing location(s): | | | | |
|--|--|-------------------------|--|--|
| | Standard Technology U | nion Co., Ltd | | |
| Testing location/ address: | No.203, Building B, Jingye Sanjie, Yushu Industrial Park, Guangzhou Economic & Technological Development Zone, Guangzhou, Guangdong, China | | | |
| Tested by (name, function, signature): | Juener Li | Tiener Li 2shown xoe | | |
| Approved by (name, function, signature): | Johnson Xie | 20horon xxe | | |
| Testing procedure: CTF Stage 1: | | MATS 301. | | |
| | | - DANAGA | | |
| Testing location/ address: | | | | |
| Tested by (name, function, signature): | | | | |
| Approved by (name, function, signature): | | | | |
| ☐ Testing procedure: CTF Stage 2: | | | | |
| Testing location/ address: | 9 | | | |
| Tested by (name + signature): | | | | |
| Witnessed by (name, function, signature) .: | | | | |
| Approved by (name, function, signature): | | | | |
| Testing procedure: CTF Stage 3: | | | | |
| Testing procedure: CTF Stage 4: | | | | |
| | | | | |
| Testing location/ address | | - | | |
| Tested by (name, function, signature): | | | | |
| Witnessed by (name, function, signature) .: | | | | |
| Approved by (name, function, signature): | | | | |
| Supervised by (name, function, signature) : | | | | |
| | | | | |



List of Attachments (including a total number of pages in each attachment):

Attachment 1: European Group Differences and National Differences

Attachment 2: Additional test of IEC 62031:2018 and EN IEC 62031:2020.

Attachment 3: Product photo

Summary of testing:

The full test model is FL007.

Tests performed (name of test and test clause):

4.6 (3) - Marking

4.7 (4) - Construction

4.8 (11) - Creepage Distances And Clearances

4.11 (5) - External And Internal Wiring

4.12 (8) - Protection Against Electric Shock

4.13 (12) – Endurance Test And Thermal Test

4.14 (9) - Resistance To Dust And Moisture

4.15 (10) – Insulation Resistance And Electric Strength

4.16 (13) - Resistance To Heat, Fire And Tracking

This product is not for lighting use, it is used to solidify the eyelashes, the person needs to cover their eyes when using, the light shines on the eyelashes for 2 to 3 seconds, This standard is selected for testing according to the client's request, and the Client requires clause4.24 not to be tested.

Testing location:

Standard Technology Union Co., Ltd No.203, Building B, Jingye Sanjie, Yushu Industrial Park, Guangzhou Economic & Technological Development Zone, Guangzhou, Guangdong, China

Summary of compliance with National Differences (List of countries addressed): List of countries addressed

- CENELEC member countries

 The product fulfils the requirements of EN 60598-2-4:2018 and EN IEC 60598-1:2021+AMD11:2022;

| Use of uncertainty of measurement for decisions on conformity (decision rule) : |
|---|
| oximes No decision rule is specified by the IEC standard, when comparing the measurement result with the |
| applicable limit according to the specification in that standard. The decisions on conformity are made |
| without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as |
| "accuracy method") |
| Other: (to be specified, for example when required by the standard or client, or if national accreditation requirements apply) |
| Information on uncertainty of measurement: |
| The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE. |
| IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer. |
| Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing. |



Copy of marking plate:

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.

UV LED Floor Lamp for Lash Extension

Item No.: R007

Input Voltage:DC 5V 1A Wave Length:395-400nm

Rated Power: Max.5W Lifespan:10,000 hours

CEFE KHS (II) MADE IN CHINA

UV Lash Glue Cosmetics Itd

Warnning:

- 1. This product is limited to eyelash UV glue curing use, do not use for other purposes. 2. When using this product light, please ensure that the eyes of the irradiated person have been covered.
- Under any circumstances, Please do not look at the luminous body of the product with your eyes.
- Please strictly control the irradiation time, so as not to cause damage to the skin of the illuminated part.

Warnning:

- 1. This product is limited to eyelash UV glue curing use, do not use for other purposes. 2. When using this product light, please ensure that the eyes of the irradiated person have been covered.
- Under any circumstances, Please do not look at the luminous body of the product with your eyes.
- 4. Please strictly control the irradiation time, so as not to cause damage to the skin of the illuminated part.

Note:

The above marking is the minimum requirement by the safety standard. For the final production, the additional markings which do not give rise to misunderstanding may be added.

The other models are identical to above this model except for the model name.





| Test item particulars: | | | | |
|---|----------------------|--------------------------|-----------------|--|
| Classification of installation and use: | Class III and | indoor use | | |
| Supply Connection: | AC/DC Adapt | er | | |
| | | | | |
| Possible test case verdicts: | | | | |
| test case does not apply to the test object: N/A | | | | |
| - test object does meet the requirement: | P (Pass) | | | |
| - test object does not meet the requirement: | F (Fail) | | | |
| Testing: | | | | |
| Date of receipt of test item: | Mar. 15, 2024 | Į. | | |
| Date (s) of performance of tests: | Mar. 15, 2024 | to Mar. 29, 2024 | | |
| | | | | |
| General remarks: | | | | |
| "(See Enclosure #)" refers to additional information as "(See appended table)" refers to a table appended to t | • | report. | | |
| Throughout this report a ⊠ comma / ☐ point is u | sed as the de | cimal separator. | | |
| Clause numbers between brackets refer to clauses i | n IEC 60598- | 1 | | |
| Manufacturer's Declaration per sub-clause 4.2.5 of | IECEE 02: | | | |
| The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided | ☐ Yes ⊠ Not appli | cable | | |
| When differences exist; they shall be identified in t | he General pr | oduct information sec | etion. | |
| Name and address of factory (ies) | Same as mar | nufacturer | | |
| General product information and other remarks: | | | | |
| UV Eyelash Extension Lamp for indoor use only, 5Vvia AC/DC Adapter. | , LED, 5W, C | lass III, IP20, connecte | d to the supply | |
| This report cover the following models: | | | | |
| Model No. | | Ratings | | |
| R007, R008, R009, R010, R011, R012, R013, R014, | R015, R016. | 5V===, LED, 5W | | |
| 11 | | | | |



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|----------------------------|--|--|---------|
| | IEC 60598-2-4 | | |
| Clause | Requirement + Test | Result - Remark | Verdict |
| 4.4.(0) | OFNEDAL TEST DESCRIPTION | | |
| 4.4 (0) | GENERAL TEST REQUIREMENTS | | Р |
| 4.4 (0.3) | More sections applicable: | Yes ☐ No ☒ Section/s: | _ |
| 4.4 (0.5) | Components | Section/s. | |
| 4.4 (0.3) 4.4 (0.7) | · · | tandarda | |
| | Information for luminaire design in light sources s | 1 | _ |
| 4.4 (0.7.2) | Light source safety standard: | IEC 62031 | _ |
| | Luminaire design in the light source safety standard | | Р |
| | | | |
| 4.5 (2) | CLASSIFICATION OF LUMINAIRES | T | Р |
| 4.5 (2.2) | Type of protection: | Class III | Р |
| | | (Class III luminaries with class II AC/DC Adapter) | |
| 4.5 (2.3) | Degree of protection: | IP 20 | _ |
| 4.5 (2.4) | Luminaire suitable for direct mounting on normally flammable surfaces: | Yes ⊠ No □ | |
| 4.5 (2.5) | Luminaire for normal use: | Yes ⊠ No □ | _ |
| | Luminaire for rough service: | Yes ☐ No ☒ | |
| 4.5.1 (-) | Ordinary luminaire classified "for indoor use only" : | Yes ⊠ No □ | |
| | Luminaires other than ordinary classified "for indoor use only": | Yes □ No ⊠ | _ |
| | Luminaires other than ordinary classified for "outdoor use" and "for indoor use": | Yes □ No ⊠ | _ |
| 4.5.2 (-) | Portable luminaire for outdoor use classified IPX4 or higher | | N/A |
| 4.5.3 (-) | Luminaires designed for standing on a floor or table classified as suitable for direct mounting on normally flammable surfaces | | Р |
| | | | |
| 4.6 (3) | MARKING | | Р |
| 4.6 (3.2) | Mandatory markings | | Р |
| | Position of the marking | | Р |
| | Format of symbols/text | | Р |
| 4.6 (3.3) | Additional information | | Р |
| | Language of instructions | English | Р |
| 4.6 (3.3.1) | Combination luminaires | | N/A |



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| | IEC 60598-2-4 | | 1 |
|--------------|---|---------------------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 4.6 (3.3.2) | Nominal frequency in Hz | | N/A |
| 4.6 (3.3.3) | Operating temperature | | N/A |
| 4.6 (3.3.5) | Wiring diagram | | N/A |
| 4.6 (3.3.6) | Special conditions | | N/A |
| 4.6 (3.3.7) | Metal halide lamp luminaire – warning | | N/A |
| 4.6 (3.3.8) | Limitation for semi-luminaires | | N/A |
| 4.6 (3.3.9) | Power factor and supply current | | N/A |
| 4.6 (3.3.10) | Suitability for use indoors | | Р |
| 4.6 (3.3.11) | Luminaires with remote control | | N/A |
| 4.6 (3.3.12) | Clip-mounted luminaire – warning | | N/A |
| 4.6 (3.3.13) | Specifications of protective shields | | N/A |
| 4.6 (3.3.14) | Symbol for nature of supply | == | Р |
| 4.6 (3.3.15) | Rated current of socket outlet | | N/A |
| 4.6 (3.3.16) | Rough service luminaire | | N/A |
| 4.6 (3.3.17) | Mounting instruction for type Y, type Z and some type X attachments | Type Y | Р |
| 4.6 (3.3.18) | Non-ordinary luminaires with PVC cable | | N/A |
| 4.6 (3.3.19) | Protective conductor current in instruction if applicable | | N/A |
| 4.6 (3.3.20) | Provided with information if not intended to be mounted within arm's reach | | N/A |
| 4.6 (3.3.21) | Non replaceable and non-user replaceable light sources information provided | Non replaceable | Р |
| 4.6 (3.3.22) | Controllable luminaires, classification of insulation provided | | N/A |
| 4.6 (3.3.23) | Luminaires without controlgear provided with necessary information for selection of appropriate component | | N/A |
| 4.6 (3.3.24) | If not supplied with terminal block, information on the packaging | | N/A |
| 4.6 (3.3.25) | Luminaires employing light sources emitting UV on mains wiring, information provided | | N/A |
| 4.6 (3.3.26) | Wall mounted luminaire using external flexible cable or cord longer than 0.3 m, information provided | | N/A |
| 4.6 (3.4) | Test with water | Rubbing with water for 15s | Р |
| | Test with hexane | Rubbing with petroleum spirit for 15s | Р |

| | IEC 60598-2-4 | | | |
|-----------|--|-----------------|---------|--|
| Clause | Requirement + Test | Result - Remark | Verdict | |
| | | | | |
| | Legible after test | Still legible | Р | |
| | Label attached | No curling | Р | |
| 4.6.1 (-) | Luminaire not suitable for outdoor application | | N/A | |
| | Required symbol | | N/A | |
| | Information in the instructions | | N/A | |
| 4.6.2 (-) | Outdoor use, socket outlet incorporated in the luminaire | | N/A | |
| | Maximum power rating marked | | N/A | |
| | Position of the marking | | N/A | |

| 4.7 (4) | CONSTRUCTION | Р |
|--------------|--|--------------|
| 4.7 (4.2) | Components replaceable without difficulty | Р |
| 4.7 (4.3) | Wireways smooth and free from sharp edges | Р |
| 4.7 (4.4) | Lampholders | N/A |
| 4.7 (4.4.1) | Integral lampholder | N/A |
| 4.7 (4.4.2) | Wiring connection | N/A |
| 4.7 (4.4.3) | Lampholder for end-to-end mounting | N/A |
| 4.7 (4.4.4) | Positioning | N/A |
| | - pressure test (N): | _ |
| | After test the lampholder comply with relevant standard sheets and show no damage | N/A |
| | After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation | N/A |
| | - bending test (N) | _ |
| | After test the lampholder has not moved from its position and show no permanent deformation | N/A |
| 4.7 (4.4.5) | Peak pulse voltage | N/A |
| 4.7 (4.4.6) | Centre contact | N/A |
| 4.7 (4.4.7) | Parts in rough service luminaires resistant to tracking | N/A |
| 4.7 (4.4.8) | Lamp connectors | N/A |
| 4.7 (4.4.9) | Caps and bases correctly used | N/A |
| 4.7 (4.4.10) | Light source for lampholder or connection according IEC 60061 not connected another way | N/A |
| 4.7 (4.5) | Starter holders | N/A |



| | IEC 60598-2-4 | | |
|---------------|---|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Starter holder in luminaires other than class II | | N/A |
| | Starter holder class II construction | | N/A |
| 4.7 (4.6) | Terminal blocks | | N/A |
| | Tails | | N/A |
| | Unsecured blocks | | N/A |
| 4.7 (4.7) | Terminals and supply connections | 1 | Р |
| 4.7 (4.7.1) | Contact to metal parts | | Р |
| 4.7 (4.7.2) | Test 8 mm live conductor | | N/A |
| | Test 8 mm earth conductor | | N/A |
| 4.7 (4.7.3) | Terminals for supply conductors | | Р |
| 4.7 (4.7.3.1) | Welded method and material | | N/A |
| | - stranded or solid conductor | | N/A |
| | - spot welding | | N/A |
| | - welding between wires | | N/A |
| | - Type Z attachment | | N/A |
| | - mechanical test according to 15.6.2 | | N/A |
| | - electrical test according to 15.6.3 | | N/A |
| | - heat test according to 15.6.3.2.3 and 15.6.3.2.4 | | N/A |
| 4.7 (4.7.4) | Terminals other than supply connection | | Р |
| 4.7 (4.7.5) | Heat-resistant wiring/sleeves | | N/A |
| 4.7 (4.7.6) | Multi-pole plug | | N/A |
| | - test at 30 N | | N/A |
| 4.7 (4.8) | Switches | • | Р |
| | - adequate rating | | Р |
| | - adequate fixing | | Р |
| | - polarized supply | | Р |
| | - compliance with IEC 61058-1 for electronic switches | | N/A |
| 4.7 (4.9) | Insulating lining and sleeves | | Р |
| 4.7 (4.9.1) | Retainment | | Р |
| | Method of fixing | | Р |
| 4.7 (4.9.2) | Insulated linings and sleeves: | | Р |



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| | IEC 60598-2-4 | · | |
|--------------|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Resistant to a temperature > 20 °C to the wire temperature or | | N/A |
| | a) & c) Insulation resistance and electric strength | | N/A |
| | b) Ageing test. Temperature (°C): | | N/A |
| 4.7 (4.10) | Double or reinforced insulation | | Р |
| 4.7 (4.10.1) | No contact, mounting surface – accessible metal parts – wiring of basic insulation | | Р |
| | Safe installation fixed luminaires | | N/A |
| | Capacitors and switches | | N/A |
| 4.7 (4.10.2) | Assembly gaps: | | Р |
| | - not coincidental | | Р |
| | - no straight access with test probe | | Р |
| 4.7 (4.10.3) | Retainment of insulation: | | N/A |
| | - fixed | | N/A |
| | - unable to be replaced; luminaire inoperative | | N/A |
| | - sleeves retained in position | | N/A |
| | - lining in lampholder | | N/A |
| 4.7 (4.10.4) | Protective impedance device | | N/A |
| | Basic and supplementary insulation bridged by resistor(s) or appropriate capacitor | | N/A |
| | Double or reinforced insulation bridged by at least two separate resistors in series or appropriate capacitor(s) | | N/A |
| | Capacitors comply with IEC 60384-14 | | N/A |
| | Resistors comply with test (a) in 14.2 of IEC 60065 | | N/A |
| 4.7 (4.11) | Electrical connections and current-carrying parts | | Р |
| 4.7 (4.11.1) | Contact pressure | | Р |
| 4.7 (4.11.2) | Screws: | • | N/A |
| | - self-tapping screws | | N/A |
| | - thread-cutting screws | | N/A |
| 4.7 (4.11.3) | Screw locking: | • | N/A |
| | - spring washer | | N/A |
| | - rivets | | N/A |
| 4.7 (4.11.4) | Material of current-carrying parts | | Р |



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| | IEC 60598-2-4 | | |
|--------------|---|------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 4.7 (4.14.7) | No contact to wood or mounting surface | | Р |
| 4.7 (4.14.7) | Electro-mechanical contact systems | | N/A |
| 4.7 (4.12) | Screws and connections (mechanical) and glands | | Р |
| 4.7 (4.12.1) | Screws not made of soft metal | | N/A |
| | Screws of insulating material | | N/A |
| | Torque test: torque (Nm); part: | | N/A |
| | Torque test: torque (Nm); part: | | N/A |
| | Torque test: torque (Nm); part: | | N/A |
| 4.7 (4.12.2) | Screws with diameter < 3 mm screwed into metal | | N/A |
| 4.7 (4.12.4) | Locked connections: | | N/A |
| | - fixed arms; torque (Nm): | | N/A |
| | - lampholder; torque (Nm): | | N/A |
| | - push-button switches; torque 0,8 Nm: | | N/A |
| 4.7 (4.12.5) | Screwed glands; force (Nm): | | N/A |
| 4.7 (4.13) | Mechanical strength | | Р |
| 4.7 (4.13.1) | Impact tests: | | Р |
| | - fragile parts; energy (Nm): | Lens; 0,2Nm | Р |
| | - other parts; energy (Nm): | Lamp body; 0,5Nm | Р |
| | 1) live parts | | Р |
| | 2) linings | | Р |
| | 3) protection | | Р |
| | 4) covers | | Р |
| 4.7 (4.13.2) | Metal parts have adequate mechanical strength | | N/A |
| 4.7 (4.13.3) | Straight test finger | | N/A |
| 4.7 (4.13.4) | Rough service luminaires | | N/A |
| | - IP54 or higher | | N/A |
| | a) fixed | | N/A |
| | b) hand-held | | N/A |
| | c) delivered with a stand | | N/A |
| | d) for temporary installations and suitable for mounting on a stand | | N/A |
| 4.7 (4.13.6) | Tumbling barrel | | N/A |
| 4.7 (4.14) | Suspensions, fixings and means of adjusting | | Р |



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| | IEC 60598-2-4 | | |
|--------------|--|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 4.7 (4.14.1) | Mechanical load: | | N/A |
| <u> </u> | A) four times the weight | | N/A |
| | B) torque 2,5 Nm | | N/A |
| | C) bracket arm; bending moment (Nm): | | N/A |
| | D) load track-mounted luminaires | | N/A |
| | E) clip-mounted luminaires, glass-shelve. Thickness (mm): | | N/A |
| | Metal rod. diameter (mm): | | N/A |
| | Fixed luminaire or independent control gear without fixing devices | | N/A |
| 4.7 (4.14.2) | Load to flexible cables | | N/A |
| | Mass (kg) | | _ |
| | Stress in conductors (N/mm²): | | N/A |
| | Mass (kg) of semi-luminaire: | | N/A |
| | Bending moment (Nm) of semi-luminaire: | | N/A |
| 4.7 (4.14.3) | Adjusting devices: | | Р |
| | - flexing test; number of cycles: | 1500 cycles | Р |
| | - strands broken: | 0 | Р |
| | - electric strength test afterwards | | Р |
| 4.7 (4.14.4) | Telescopic tubes: cords not fixed to tube; no strain on conductors | | N/A |
| 4.7 (4.14.5) | Guide pulleys | | N/A |
| 4.7 (4.14.6) | Strain on socket-outlets | | N/A |
| 4.7 (4.15) | Flammable materials | | Р |
| | - glow-wire test 650°C | | Р |
| | - spacing ≥30 mm | | N/A |
| | - screen withstanding test of 13.3.1 | | N/A |
| | - screen dimensions | | N/A |
| | - no fiercely burning material | | Р |
| | - thermal protection | | N/A |
| | - electronic circuits exempted | | N/A |
| 4.7 (4.15.2) | Luminaires made of thermoplastic material with lamp of | control gear | N/A |
| | a) construction | | N/A |
| | b) temperature sensing control | | N/A |



| | IEC 60598-2-4 | | |
|--------------|--|------------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | c) surface temperature | | N/A |
| 4.7 (4.16) | Luminaires for mounting on normally flammable s | urfaces | N/A |
| | No lamp control gear: | (compliance with Section 12) | N/A |
| | Provided with adaptor for a track meet the requirements for direct mounting on normally flammable surfaces | | N/A |
| 4.7 (4.16.1) | Lamp control gear spacing: | | N/A |
| | - spacing 35 mm | | N/A |
| | - spacing 10 mm | | N/A |
| 4.7 (4.16.2) | Thermal protection: | | N/A |
| | - in lamp control gear | | N/A |
| | - external | | N/A |
| | - fixed position | | N/A |
| | - temperature marked lamp control gear | | N/A |
| 4.7 (4.16.3) | Design to satisfy the test of 12.6 | (see clause 12.6) | N/A |
| 4.7 (4.17) | Drain holes | 1 | N/A |
| | Clearance at least 5 mm | | N/A |
| 4.7 (4.18) | Resistance to corrosion | | N/A |
| 4.7 (4.18.1) | - rust-resistance | | N/A |
| 4.7 (4.18.2) | - season cracking in copper | | N/A |
| 4.7 (4.18.3) | - corrosion of aluminium | | N/A |
| 4.7 (4.19) | Ignitors compatible with ballast | | N/A |
| 4.7 (4.20) | Rough service vibration | | N/A |
| 4.7 (4.21) | Protective shield | | N/A |
| 4.7 (4.21.1) | Shield fitted if tungsten halogen lamps or metal halide lamps | | N/A |
| | Shield of glass if tungsten halogen lamps | | N/A |
| 4.7 (4.21.2) | Particles from a shattering lamp not impair safety | | N/A |
| 4.7 (4.21.3) | No direct path | | N/A |
| 4.7 (4.21.4) | Impact test on shield | | N/A |
| | Glow-wire test on lamp compartment: | | N/A |
| 4.7 (4.22) | Attachments to lamps not cause overheating or damage | | N/A |
| 4.7 (4.23) | Semi-luminaires comply Class II | | N/A |



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|--------------|--|---------|
| Clause | Requirement + Test Result - Remark | Verdict |
| 4.7 (4.24) | Photobiological hazards | N/A |
| 4.7 (4.24.1) | No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P) | N/A |
| 4.7 (4.24.2) | Retinal blue light hazard | N/A |
| | Class of risk group assessed according to IEC/TR 62778: | _ |
| | Luminaires with Ethr: | N/A |
| | a) Fixed luminaires | N/A |
| | - distance x m, borderline between RG1 and RG2: | N/A |
| | - marking and instruction according 3.2.23 | N/A |
| | b) Portable and handheld luminaires | N/A |
| | - marking according 3.2.23 if RG1 exceeded at 200 mm according to IEC/TR 62778 | N/A |
| | Portable luminaires for children IEC 60598-2-10 and Mains socket outlet nightlights IEC 60598-2-12 not exceed RG1 at 200 mm according to IEC/62778 | N/A |
| 4.7 (4.25) | Mechanical hazard | Р |
| | No sharp point or edges | Р |
| 4.7 (4.26) | Short-circuit protection | N/A |
| 4.7 (4.26.1) | Adequate means of uninsulated accessible SELV or PELV parts | N/A |
| 4.7 (4.26.2) | Short-circuit test with test chain according 4.26.3 | N/A |
| | Supply source ES1 PSE | N/A |
| | Test chain not melt through | N/A |
| | Test sample not exceed values of Table 12.1 and 12.2 | N/A |
| 4.7 (4.27) | Terminal blocks with integrated screwless protective earthing contacts | N/A |
| | Test according Annex V | N/A |
| | Pull test of terminal fixing (20 N) | N/A |
| | After test, resistance < 0,05 Ω | N/A |
| | Pull test of mechanical connection (50 N) | N/A |
| | After test, resistance < 0,05 Ω | N/A |
| | Voltage drop test, resistance $< 0.05 \Omega$ | N/A |
| 4.7 (4.28) | Fixing of thermal sensing control | N/A |
| | Not plug-in or easily replaceable type | N/A |



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| Clause | Requirement + Test | Result - Remark | Verdict |
| | Reliably kept in position | | N/A |
| | No adhesive fixing if UV radiations from a lamp can degrade the fixing | | N/A |
| | Not outside the luminaire enclosure | | N/A |
| | Test of adhesive fixing: | | N/A |
| | Max. temperature on adhesive material (°C): | | _ |
| | 100 cycles between t _{min} and t _{max} | | N/A |
| | Temperature sensing control still in position | | N/A |
| 4.7 (4.29) | Luminaires with non-replaceable light source | | Р |
| | Not possible to replace light source | | Р |
| | Live part not accessible after parts have been opened by hand or tools | | Р |
| 4.7 (4.30) | Luminaires with non-user replaceable light source | | N/A |
| | If protective cover provide protection against electric shoelectric shock risk" symbol: | ock and marked with "caution, | N/A |
| | At least one fixing means requiring use of tool | | N/A |
| 4.7 (4.31) | Insulation between circuits | | Р |
| | Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3 | | Р |
| | Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3 | | N/A |
| 4.7 (4.31.1) | SELV or PELV circuits | | Р |
| | Used SELV or PELV source | | Р |
| | Voltage ≤ ELV | | N/A |
| | Insulating of SELV or PELV circuits from LV supply | | N/A |
| | Insulating of SELV or PELV circuits from other non SELV or PELV circuits | | N/A |
| | Insulating of SELV or PELV circuits from FELV | | N/A |
| | Insulating of SELV or PELV circuits from other SELV or PELV circuits | | N/A |
| | SELV or PELV circuits insulated from accessible parts according Table X.1 | | N/A |
| | Plugs not able to make any electrical contact with socket-outlets of other voltage systems | | Р |



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|--------------|---|------------------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Socket outlets does not admit plugs of other voltage systems | | Р |
| | Plugs and socket-outlets does not have protective conductor contact | | N/A |
| 4.7 (4.31.2) | FELV circuits | | N/A |
| | Used FELV source | | N/A |
| | Voltage ≤ ELV | | N/A |
| | Insulating of FELV circuits from LV supply | | N/A |
| | FELV circuits insulated from accessible parts according Table X.1 | | N/A |
| | Plugs not able to make any electrical contact with socket-outlets of other voltage systems | | N/A |
| | Socket outlets does not admit plugs of other voltage systems | | N/A |
| | Socket-outlets have protective conductor contact | | N/A |
| 4.7 (4.31.3) | Other circuits | | N/A |
| | Other circuits insulated from accessible parts according Table X.1 | | N/A |
| | Class II construction with equipotential bonding for prowith live parts: | ptection against indirect contacts | N/A |
| | - conductive parts are connected together | | N/A |
| | - test according 7.2.3 | | N/A |
| | - conductive part does not cause an electric shock in case of an insulation fault | | N/A |
| | - equipotential bonding in master/slave applications | | N/A |
| | - master luminaire provided with terminal for accessible conductive parts of slave luminaires | | N/A |
| | - slave luminaire constructed as class I | | N/A |
| 4.7 (4.32) | Overvoltage protective devices | 1 | N/A |
| | Comply with IEC 61643-11 | | N/A |
| | External to controlgear and connected to earth: | | N/A |
| | - only in fixed luminaires | | N/A |
| | - only connected to protective earth | | N/A |
| 4.7 (4.33) | Luminaire powered via information technology co | mmunication cabling | N/A |
| | Requirements for Class III luminaire | | N/A |



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| Clause | Requirement + Test | Result - Remark | Verdict | | |
| | Rated voltage within the range of ES1 and does not exceed maximum voltage of used connector | | N/A | | |
| | Luminaire does not create any hazard from overvoltage | (see Annex 2) | N/A | | |
| 4.7 (4.34) | Electromagnetic fields (EMF) | | Р | | |
| | No harmful electromagnetic fields | Report No. : STUEMO240300013LM | Р | | |
| 4.7 (4.35) | Protection against moving fan blades | | N/A | | |
| | Test with a standard test finger | | N/A | | |
| | Test with test probe acc. to Figure 13 (IEC 61032) for portable luminaire | | N/A | | |
| | Blades rounded with radius ≥ 0.5 mm and: | | N/A | | |
| | - hardness less than D60 Shore | | N/A | | |
| | - peripheral speed less than 15 m/s | | N/A | | |
| | - input power of fan ≤ 2 W at rated voltage | | N/A | | |
| 4.7 (4.36) | Track-mounted luminaires | | N/A | | |
| | Test in accordance with Annex A of IEC60570:2003/AMD2:2019 | | N/A | | |
| 4.7.1 (-) | Insulation not damaged when moving, adjusting or placing on support | | N/A | | |
| 4.7.2 (-) | Wiring fixed, to avoid rubbing | | Р | | |
| | Carrier or clips of insulation material or with insulating lining | | Р | | |
| 4.7.3 (-) | Luminaire does not overturn: | | Р | | |
| | - at an angle of 6° for indoor use | | Р | | |
| | - at an angle 15° for outdoor use | | N/A | | |
| 4.7.4 (-) | Candlestick luminaires provided with switch | | N/A | | |
| | Switch in candlestick luminaires with E5 or E10 lampholders switches all lamps on and off simultaneously | | N/A | | |
| | Switch part of the luminaire or within 300 mm of the luminaire if with cord | | N/A | | |
| 4.7.5 (-) | Voltage not exceeding 25 V for E5 lampholders | | N/A | | |
| | E10 lampholder voltage: | | N/A | | |
| | - not exceeding 60 V for series connection | | N/A | | |
| | - not exceeding 250 V for parallel connection | | N/A | | |



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| Clause | Requirement + Test | Result - Remark | Verdict |
| | Maximum rated wattage does not exceed 100 W | | N/A |
| 4.7.6 (-) | Tails not provided for luminaires for outdoor use | | N/A |
| 4.7.7 (-) | Not more than two cable entries for luminaires for outdoor use | | N/A |
| 4.7.8 (-) | Portable luminaires for outdoor use, socket-outlet degree of protection at least same as the luminaire but not less than IPX4. | | N/A |
| | Degree of protection maintained with or without a plug inserted into the socket-outlet. | | N/A |
| | Class II luminaires, mains socket-outlets comply with the standard and only allow connection to Class II luminaires | | N/A |
| | Class I luminaires, mains socket-outlets comply with the standard and only allow connection to Class I or Class II luminaires | | N/A |
| 4.7.9 (-) | Lampholders and plugs resistant to tracking for luminaires for outdoor use | | N/A |
| | Compliance to clause 13.4 | | N/A |

| 4.8 (11) | CREEPAGE DISTANCES AND CLEARANCES | | N/A |
|--------------|--|------------------------------|-----|
| 4.8 (11.2.1) | Impulse withstand category (Normal category II) | Category II ☐ Category III ☒ | _ |
| | Category III according Annex U | | N/A |
| | Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1 | | N/A |
| 4.8 (11.2.2) | Creepage distances for frequency up to 30 kHz | | N/A |
| | Creepage distances for frequency over 30 kHz: | | N/A |
| | - Controlgear marked with \hat{U}_{OUT} and f_{UOUT} according IEC 61347-1, clause 7.1, item w | | N/A |
| | - Requirements according IEC 60664-4 for controlgear not covered by IEC 61347 | | N/A |
| 4.8 (11.2.3) | Clearances for frequency up to 30 kHz | | N/A |
| | Clearances distances for frequency over 30 kHz: | | N/A |
| | - Controlgear marked with <i>U</i> _P | | N/A |
| | - Requirements according IEC 60664-4 for controlgear not covered by IEC 61347 | | N/A |

| 4.9 (7) | PROVISION FOR EARTHING | N/A | |
|---------|------------------------|-----|--|
|---------|------------------------|-----|--|



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| Clause | Requirement + Test | Result - Remark | Verdict |
| 4.9 (7.2.1 + 7.2.3) | Accessible metal parts | | N/A |
| | Metal parts in contact with supporting surface | | N/A |
| | Resistance < 0,5 Ω: | | N/A |
| | Self-tapping screws used | | N/A |
| | Thread-forming screws | | N/A |
| | Thread-forming screw used in a grove | | N/A |
| | Protective earth makes contact first | | N/A |
| | Terminal blocks with integrated screwless protective earthing contacts tested according Annex V | | N/A |
| | Protective earthing of the luminaire not via built-in control gear | | N/A |
| 4.9 (7.2.2 + 7.2.3) | Protective earthing continuity in joints, etc. | | N/A |
| 4.9 (7.2.4) | Locking of clamping means | | N/A |
| | Compliance with 4.7.3 | | N/A |
| 4.9 (7.2.5) | Earth terminal integral part of connector socket | | N/A |
| 4.9 (7.2.6) | Earth terminal adjacent to mains terminals | | N/A |
| 4.9 (7.2.7) | Electrolytic corrosion of the protective earth terminal | | N/A |
| 4.9 (7.2.8) | Material of protective earth terminal | | N/A |
| | Contact surface bare metal | | N/A |
| 4.9 (7.2.10) | Class II luminaire for looping-in | | N/A |
| | Double or reinforced insulation to functional earth | | N/A |
| 4.9 (7.2.11) | Protective earthing core coloured green-yellow | | N/A |
| | Length of protective earthing conductor | | N/A |
| 4.9 (7.2.12) | PELV circuit connected to protective earth for functional purpose | | N/A |

| 4.10 (14) | SCREW TERMINALS | N/A | |
|-----------|--------------------------------------|-----|--|
| | Separately approved; component list: | N/A | |
| | Part of the luminaire: | N/A | |

| 4.10 (15) | SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS | N/A |
|-----------|--|-----|
| | Separately approved; component list: | N/A |



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| Clause | Requirement + Test | Result - Remark | Verdict |
| | Part of the luminaire: | | N/A |

| 4.11 (5) | EXTERNAL AND INTERNAL WIRING | | Р |
|--------------------|---|---------------|-----|
| 4.11 (5.2) | Supply connection and external wiring | | Р |
| 4.11 (5.2.1) | Means of connection: | AC/DC adaptor | Р |
| | Outdoor luminaire has not PVC insulated external wiring if not Class III or SELV/PELV circuits ≤ 25 V AC/60 V DC/25 V peak interrupted DC voltage with frequency 10Hz -200 Hz or protected from outdoor environment | | N/A |
| 4.11 (5.2.2) | Type of cable: | (see Annex 1) | Р |
| | Nominal cross-sectional area (mm²): | (see Annex 1) | Р |
| | Cables equal to IEC 60227 or IEC 60245 | IEC 60227 | Р |
| 4.11 (5.2.3) | Type of attachment, X, Y or Z | Type Y | Р |
| 4.11 (5.2.5) | Type Z not connected to screws | | N/A |
| 4.11 (5.2.6) | Cable entries: | | Р |
| | - suitable for introduction | | Р |
| | - adequate degree of protection | | Р |
| 4.11 (5.2.7) | Cable entries through rigid material have rounded edges | | Р |
| 4.11 (5.2.8) | Insulating bushings: | | Р |
| | - suitably fixed | | Р |
| | - material in bushings | | Р |
| | - material not likely to deteriorate | | Р |
| | - tubes or guards made of insulating material | | Р |
| 4.11 (5.2.9) | Locking of screwed bushings | | N/A |
| 4.11 (5.2.10) | Cord anchorage: | | Р |
| | - covering protected from abrasion | | Р |
| | - clear how to be effective | | Р |
| | - no mechanical or thermal stress | | Р |
| | - no tying of cables into knots etc. | | Р |
| | - insulating material or lining | | Р |
| 4.11 (5.2.10.1) | Cord anchorage for type X attachment: | | N/A |



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|--------------------|--|-----------------|---------|--|
| Clause | Requirement + Test | Result - Remark | Verdict | |
| | a) at least one part fixed | | N/A | |
| | b) types of cable | | N/A | |
| | c) no damaging of the cable | | N/A | |
| | d) whole cable can be mounted | | N/A | |
| | e) no touching of clamping screws | | N/A | |
| | f) metal screw not directly on cable | | N/A | |
| | g) replacement without special tool | | N/A | |
| | Glands not used as anchorage | | N/A | |
| | Labyrinth type anchorages | | N/A | |
| 4.11 (5.2.10.2) | Adequate cord anchorage for type Y and type Z attachment | Type Y | Р | |
| 4.11 (5.2.10.3) | Tests: | | Р | |
| | - impossible to push cable; unsafe | | Р | |
| | - pull test: 25 times; pull (N) | 60N | Р | |
| | - torque test: torque (Nm): | 0,15Nm | Р | |
| | - displacement ≤ 2 mm | 0,12mm | Р | |
| | - no movement of conductors | | Р | |
| | - no damage of cable or cord | | Р | |
| | - function independent of electrical connection | | N/A | |
| 4.11 (5.2.10.4) | Luminaire with/designed for use with supply cord with maximum current of 2A: | | N/A | |
| | - Ordinary Class III luminaire supplied with SELV ≤ 25V RMS/60V DC | | N/A | |
| | - Ordinary Class III luminaire supplied with PELV ≤ 12V RMS/30V DC | | N/A | |
| | - Other than ordinary Class III luminaire supplied with voltage ≤ 12V RMS/30V DC | | N/A | |
| | Pull test of 30 N | | N/A | |
| 4.11 (5.2.11) | External wiring passing into luminaire | | Р | |
| 4.11 (5.2.12) | Looping-in terminals | | N/A | |
| 4.11 (5.2.13) | Wire ends not tinned | | Р | |

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| Clause | Requirement + Test | Result - Remark | Verdict |
| | Wire ends tinned: no cold flow | | N/A |
| 4.11 (5.2.14) | Mains plug same protection | | N/A |
| | Class III luminaire plug | | N/A |
| | No unsafe compatibility | | N/A |
| 4.11 (5.2.15) | Connectors for Class III luminaires (IEC 60603 or IEC 62680) | | N/A |
| 4.11 (5.2.16) | Appliance inlets (IEC 60320) | | N/A |
| | Installation couplers (IEC 61535) | | N/A |
| | Appliance inlet or connector systems (IEC 61984) | | N/A |
| 4.11 (5.2.17) | No standardized interconnecting cables properly assembled | | N/A |
| 4.11 (5.2.18) | Used plug in accordance with | | Р |
| | - IEC 60083 | | N/A |
| | - other standard | For AC/DC adaptor | Р |
| 4.11 (5.3) | Internal wiring | | Р |
| 4.11 (5.3.1) | Internal wiring of suitable size and type | (see Annex 1) | Р |
| | Through wiring | | N/A |
| | - not delivered/ mounting instruction | | N/A |
| | - factory assembled | | N/A |
| | - socket outlet loaded (A): | | N/A |
| | - temperatures: | | N/A |
| | Green-yellow for protective earth only | | N/A |
| 4.11 (5.3.1.1) | Internal wiring connected directly to fixed wiring | | N/A |
| | Cross-sectional area (mm²): | | N/A |
| | Insulation thickness (mm): | | N/A |
| | Extra insulation added where necessary | | N/A |
| 4.11 (5.3.1.2) | Internal wiring connected to fixed wiring via internal cu | urrent-limiting device | N/A |
| | Cross-sectional area (mm²): | | N/A |
| 4.11 (5.3.1.3) | Double or reinforced insulation for class II | | Р |





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| Clause | Requirement + Test | Result - Remark | Verdict |
| | | | |
| 4.11 (5.3.1.4) | Conductors without insulation | | N/A |
| 4.11 (5.3.1.5) | SELV or PELV current-carrying parts | | N/A |
| 4.11 (5.3.1.6) | Insulation thickness other than PVC or rubber | | N/A |
| 4.11 (5.3.2) | Sharp edges etc. | | Р |
| | No moving parts of switches etc. | | Р |
| | Joints, raising/lowering devices | | Р |
| | Telescopic tubes etc. | | N/A |
| | No twisting over 360° | | Р |
| 4.11 (5.3.3) | Insulating bushings: | | Р |
| | - suitable fixed | | Р |
| | - material in bushings | | Р |
| | - material not likely to deteriorate | | Р |
| | - cables with protective sheath | | Р |
| 4.11 (5.3.4) | Joints and junctions effectively insulated | | Р |
| 4.11 (5.3.5) | Strain on internal wiring | | N/A |
| 4.11 (5.3.6) | Wire carriers | | N/A |
| 4.11 (5.3.7) | Wire ends not tinned | | Р |
| | Wire ends tinned: no cold flow | | N/A |
| 4.11 (5.4) | Test to determine suitability of conductors having area | a reduced cross-sectional | N/A |
| | Under test the temperature of the luminaire wiring insulation does not exceed the limits stated in Table 12.2 | | N/A |
| | No damage to luminaire wiring after test | | N/A |
| 4.11.1 (-) | Cord anchorage of luminaire for indoor use made of glass or ceramic not fixed or integral | | N/A |
| 4.11.2 (-) | For Class I and Class II luminaires for indoor use, if: | | N/A |
| | - mass < 1 kg (kg): | | N/A |
| | - rated current ≤ 2,5 A (A): | | N/A |
| | - cable length ≤ 2 m (m): | | N/A |
| | - the nominal cross-sectional area of copper conductor ≥ 0,5 mm² (mm²) | _ | N/A |



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| Clause | Requirement + Test | Result - Remark | Verdict | |
| 4.11.3 (-) | Terminals, cord anchorage and inlet opening provided for luminaire for outdoor use delivered without a flexible cable or cord and a plug. | | N/A | |
| 4.11.4 (-) | Non-detachable flexible cables or cords not lighter than type 245 IEC 57 for Class I and Class II luminaires for outdoor use. | | N/A | |

| 4.12 (8) | PROTECTION AGAINST ELECTRIC SHOCK | | Р |
|-------------------|--|---|-----|
| 4.12 (8.2.1) | Live parts not accessible | | Р |
| | Basic insulated parts not used on the outer surface without appropriate protection | N | I/A |
| | Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires | N | I/A |
| | Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires | N | I/A |
| | Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements | I | Р |
| | Basic insulation only accessible under lamp or starter replacement | N | I/A |
| | Protection in any position | | Р |
| | Double-ended tungsten filament lamp | N | I/A |
| | Insulation lacquer not reliable | | P |
| | Double-ended high-pressure discharge lamp | N | I/A |
| | Relevant warning according to 3.2.18 fitted to the luminaire | N | I/A |
| 4.12 (8.2.2) | Portable luminaire adjusted in most unfavourable position | ı | Р |
| 4.12 (8.2.3.a) | Class II luminaire: | | Р |
| | - basic insulated metal parts not accessible | | Р |
| | - required insulation from live parts in compliance with Table X.1 | N | I/A |
| | - glass protective shields not used as supplementary insulation | N | I/A |
| 4.12 (8.2.3.b) | Metal BC lampholder in class I luminaires connected to protective earth | N | I/A |

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| Clause | Requirement + Test | Result - Remark | Verdict |
| 4.12 (8.2.3.c) | SELV circuits with exposed current carrying parts: | | Р |
| | Ordinary luminaire: | | Р |
| | - voltage under load/ no-load AC (V): | | N/A |
| | - voltage under load/ no-load DC (V): | For AC/DC adaptor output: 4,9V/5,0V. | Р |
| | - interrupted DC voltage (V): | | N/A |
| | - touch current if applicable (mA): | | N/A |
| | One conductive part insulated | | N/A |
| | Other than ordinary luminaire: | | N/A |
| | - voltage under load/ no-load AC (V): | | N/A |
| | - voltage under load/ no-load DC (V): | | N/A |
| | - interrupted DC voltage (V): | | N/A |
| 4.12 (8.2.3.d) | PELV circuits with exposed current carrying parts: | | Р |
| | Ordinary luminaire: | | N/A |
| | - voltage under load/ no-load AC (V): | | N/A |
| | - voltage under load/ no-load DC (V): | | N/A |
| | Other than ordinary luminaire: | | N/A |
| | - voltage under load/ no-load AC (V): | | N/A |
| | - voltage under load/ no-load DC (V): | | N/A |
| | Pole not connected to earth insulated | | N/A |
| | Class III luminaire only for connection to SELV or PELV | | Р |
| 4.12 (8.2.4) | Portable luminaire has protection independent of supporting surface | | Р |
| 4.12 (8.2.5) | Compliance with the standard test finger or relevant probe | | N/A |
| 4.12 (8.2.6) | Covers reliably secured | | N/A |
| 4.12 (8.2.7) | Luminaire other than below with capacitor $> 0.5~\mu F$ not exceed 50 V 1 min after disconnection | | Р |
| | Portable luminaire with capacitor $>$ 0,1 μ F (0,25) not exceed 34 V 1 s after disconnection | | N/A |
| | Other luminaires with capacitor $>$ 0,1 μ F (0,25) with plug and track adaptors not exceed 60 V 5 s after disconnection | | N/A |

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| Clause | Requirement + Test | Result - Remark | Verdict |
| 4.12 (-) | Class I luminaire with bayonet lampholder: | | N/A |
| | 1) cap not accessible with test finger | | N/A |
| | 2) metal lampholder is earthed | | N/A |

| 4.13 (12) | ENDURANCE TEST AND THERMAL TEST | | Р |
|-------------------|---|--|-----|
| 4.13 (-) | If IP > IP 20 relevant test of (12.4), (12.5), (12.6) and (12.7) after (9.2) but before (9.3) specified in 4.14 | | _ |
| 4.13 (12.2) | Selection of lamps and ballasts | | _ |
| | Lamp used according Annex B | (Lamp used see) | _ |
| | Controlgear if separate and not supplied | (Controlgear used see) | _ |
| 4.13 (12.3) | Endurance test | | Р |
| | a) mounting-position: | As normal use | _ |
| | b) test temperature (°C): | 35°C | _ |
| | c) total duration (h): | 240h | _ |
| | d) supply voltage (V): | 240 x 1,1=264V for the AC/DC Adapter input, supply voltage from AC/DC Adapter output | _ |
| | d) if not equipped with controlgear, constant voltage/current (V) or (A): | | _ |
| 1.13 (12.3.1d) | d) Class III luminaires powered via information technology communication cable: | | _ |
| | - voltage under normal operation (V): | | |
| | - voltage under abnormal operation (V): | | |
| | e) luminaire ceases to operate | | _ |
| | f) luminaire with a constant light output function | | N/A |
| 4.13 (12.3.2) | After endurance test: | | Р |
| | - no part unserviceable | | Р |
| | - luminaire not unsafe | | Р |
| | - no damage to track system | | N/A |
| | - marking legible | | Р |
| | - no cracks, deformation etc. | | Р |
| 4.13 (12.4) | Thermal test (normal operation) | | Р |
| 4.13 (12.5) | Thermal test (abnormal operation) | | Р |
| 4.13 (12.6) | Thermal test (failed lamp control gear condition): | | N/A |



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|--------------------|--|-----------------|-----------------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 4.13 (12.6.1) | Through wiring or looping-in wiring loaded by a current of (A) | | _ |
| | - case of abnormal conditions: | | _ |
| | - electronic lamp control gear | | N/A |
| | - measured winding temperature (°C): at 1,1 Un: | | _ |
| | - measured mounting surface temperature (°C) at 1,1 Un: | | N/A |
| | - calculated mounting surface temperature (°C): | | N/A |
| | - track-mounted luminaires | | N/A |
| 4.13 (12.6.2) | Temperature sensing control | | N/A |
| | - case of abnormal conditions: | | |
| | - thermal link | | N/A |
| | - manual reset cut-out | | N/A |
| | - auto reset cut-out | | N/A |
| | - measured mounting surface temperature (°C): | | N/A |
| | - track-mounted luminaires | | N/A |
| 4.13 (12.7) | Thermal test (failed lamp control gear in plastic lui | minaires): | N/A |
| 4.13 (12.7.1) | Luminaire without temperature sensing control | | N/A |
| 4.13 (12.7.1.1) | Luminaire with fluorescent lamp ≤ 70W | | N/A |
| | Test method 12.7.1.1 or Annex W: | | _ |
| | Test according to 12.7.1.1: | | N/A |
| | - case of abnormal conditions: | | |
| | - Ballast failure at supply voltage (V): | | |
| | - Components retained in place after the test | | N/A |
| | - Test with standard test finger after the test | | N/A |
| | Test according to Annex W: | | N/A |
| | - case of abnormal conditions: | | _ |
| | - measured winding temperature (°C): at 1,1 Un: | | |
| | - measured temperature of fixing point/exposed part (°C): at 1,1 Un: | | _ |
| | - calculated temperature of fixing point/exposed part (°C): | | _ |



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|--------------------|--|----------------------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | T | <u> </u> | T |
| | Ball-pressure test | | N/A |
| 4.13 (12.7.1.2) | Luminaire with discharge lamp, fluorescent lamp > 70\ | W, transformer > 10 VA | N/A |
| | - case of abnormal conditions: | | |
| | - measured winding temperature (°C): at 1,1 Un: | | _ |
| | - measured temperature of fixing point/exposed part (°C): at 1,1 Un: | | _ |
| | - calculated temperature of fixing point/exposed part (°C): | | _ |
| | Ball-pressure test | | N/A |
| 4.13 (12.7.1.3) | Luminaire with short circuit proof transformers ≤ 10 VA | | N/A |
| | - case of abnormal conditions: | | |
| | - Components retained in place after the test | | N/A |
| | - Test with standard test finger after the test | | N/A |
| 4.13 (12.7.2) | Luminaire with temperature sensing control | | N/A |
| | - thermal link: | Yes No | _ |
| | - manual reset cut-out: | Yes No No | _ |
| | - auto reset cut-out: | Yes No No | _ |
| | - case of abnormal conditions: | | _ |
| | - highest measured temperature of fixing point/ exposed part (°C):: | | _ |
| | Ball-pressure test:: | | N/A |
| 4.13 (-) | Luminaire for indoor use tested in overturned position (overturns < 15°) | | N/A |
| | | | |
| 4.14 (9) | RESISTANCE TO DUST AND MOISTURE | | Р |
| 4.14 (-) | If IP > IP 20 the order of tests as specified in clause 4. | 13 | Р |
| 4.14 (9.2) | Tests for ingress of dust, solid objects and moisture: | | Р |
| | - classification according to IP: | IP 20 | _ |
| | - mounting position during test: | As per standard | _ |
| | - fixing screws tightened; torque (Nm): | | _ |
| | - tests according to clauses: | Clause 9.2.0 of EN 60598-1 | _ |
| | - electric strength test afterwards | | Р |



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|------------|---|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | a) no deposit in dust-proof luminaire | | N/A |
| | b) no talcum in dust-tight luminaire | | N/A |
| | c) no trace of water on current-carrying parts or on insulation where it could become a hazard | | N/A |
| | c.1) For luminaires without drain holes – no water entry | | N/A |
| | c.2) For luminaires with drain holes – no hazardous water entry | | N/A |
| | d) no water in watertight, pressure watertight, high pressure and temperature water jet-proof or high pressure and cold-water jet-proof luminaire | | N/A |
| | e) no contact with live parts (IP 2X) | IP 20 | Р |
| | e) no entry into enclosure (IP 3X and IP 4X) | | N/A |
| | e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X) | | N/A |
| | f) no trace of water on part of lamp requiring protection from splashing water | | N/A |
| | g) no damage of protective shield or glass envelope | | N/A |
| 4.14 (9.3) | Humidity test 48 h | 25°C, 93%RH | Р |

| 4.15 (10) | INSULATION RESISTANCE AND ELECTRIC STREN | GTH | Р |
|------------------|---|---------|-----|
| 4.15 (10.2.1) | Insulation resistance test | | Р |
| | Cable or cord covered by metal foil or replaced by a metal rod of mm Ø: | | N/A |
| | Insulation resistance (M Ω): | | N/A |
| | SELV or PELV: | | Р |
| | - between current-carrying parts of different polarity: | >500 MΩ | Р |
| | - between current-carrying parts and mounting surface: | >500 MΩ | Р |
| | - between current-carrying parts and metal parts of the luminaire: | >500 MΩ | Р |
| | - between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts: | | N/A |
| | - Insulation bushings as described in Section 5: | | N/A |
| | Other than SELV or PELV: | | N/A |



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|------------------|---|-----------------|--------|
| Clause | Requirement + Test | Result - Remark | Verdic |
| | - between live parts of different polarity: | | N/A |
| | - between live parts and mounting surface: | | N/A |
| | - between live parts and metal parts: | | N/A |
| | - between live parts of different polarity through action of a switch: | | N/A |
| | - between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts: | | N/A |
| | - Insulation bushings as described in Section 5: | | N/A |
| 4.15 (10.2.2) | Electric strength test | | Р |
| | Dummy lamp | | N/A |
| | Luminaires with ignitors after 24 h test | | N/A |
| | Luminaires with manual ignitors | | N/A |
| | Luminaires with ignitors provided with ballasts conforming to IEC 61347-2-9 | | N/A |
| | SELV or PELV: | | Р |
| | - between current-carrying parts of different polarity: | 500 V | Р |
| | - between current-carrying parts and mounting surface: | 500 V | Р |
| | - between current-carrying parts and metal parts of the luminaire: | 500 V | Р |
| | - between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts: | | N/A |
| | - Insulation bushings as described in Section 5: | | N/A |
| | Other than SELV/PELV: | | N/A |
| | - between live parts of different polarity: | | N/A |
| | - between live parts and mounting surface: | | N/A |
| | - between live parts and metal parts: | | N/A |
| | - between live parts of different polarity through action of a switch: | | N/A |
| | - between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts: | | N/A |
| | - Insulation bushings as described in Section 5: | | N/A |
| 4.15 (10.3) | Touch current (mA): | | N/A |



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|------------------|---------------------------------------|-----------------|---------|--|--|
| Clause | Requirement + Test | Result - Remark | Verdict | | |
| | | | 1 | | |
| | Protective conductor current (mA): | 0,01mA | Р | | |
| | | | | | |
| 4.16 (13) | RESISTANCE TO HEAT, FIRE AND TRACKING | | Р | | |
| 4.16 (13.2.1) | Ball-pressure test | | Р | | |
| 4.16 (13.3.1) | Needle-flame test (10 s): | | Р | | |
| 4.16 (13.3.2) | Glow-wire test (650°C): | | Р | | |
| 4.16 (13.4) | Proof tracking test (IEC 60112) | | N/A | | |



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|--------|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

| 4.8 (11.2) | TABLE I: C | TABLE I: Creepage distances and clearances | | | | | |
|---|------------------------|--|------------------|----------------|-----------------|-------------------|--------|
| | Minimum d | stances (mm |) for a.c. up to | 30 kHz sinu | ısoidal voltage | es | |
| | Applicable | part of IEC 60 | 598-1 Table 1 | 1.1.A*, 11.1.I | B* and 11.2* ar | nd Table U.1* | |
| Distances | Insulation | Measured | Required | | Measured | Requ | ired |
| Distances | type ** | clearance | clearance | *Table | creepage | creepage | *Table |
| Distance 1: | | | | 11,1B | | | 11,1A |
| Working volt | age (V) | | | | | | _ |
| PTI: | | | < 600 🗌 | ≥ 600 □ | _ | | |
| Pulse voltag | e or <i>U</i> ⊵ if app | licable (kV) | | : | | | _ |
| Supplementa | ary informatio | n: | | | | | |
| Distance 2: | | | | 11,1B | | | 11,1A |
| Working volt | age (V) | | | : | | | _ |
| PTI | | | | : | < 600 🗌 | ≥ 600 □ | _ |
| Pulse voltag | e or <i>U</i> ⊵ if app | licable (kV) | | | | | _ |
| Supplementa | ary informatio | n: | | | • | | |
| Distance 3: | | | | 11,1B | | | 11,1A |
| Working volt | age (V) | | | | | | _ |
| PTI | | | | | < 600 🗌 | <u>></u> 600 □ | _ |
| Pulse voltage or <i>U</i> _P if applicable (kV) | | | | : | | | _ |
| Supplementa | ary informatio | n: | | | | | |
| ** Insulation | type: B – Bas | ic; S – Supple | mentary; R – F | Reinforced. Se | ee also IEC 60 | 598-1 Annex M. | |



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|--------|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

| 4.8 (11.2) | TABLE II: C | TABLE II: Creepage distances and clearances | | | | | | |
|---|-----------------|---|-------------------|----------------|---------------|-------------|--------|--|
| | Minimum d | istances (m | m) for a.c. hig | her than 30 k | Hz sinusoidal | voltages | | |
| | Applicable | part of IEC 6 | 61347-1 Table | 7 and 8* or IE | EC 60664-4 Ta | ble 1 and 2 | | |
| Distance | Insulation | Measured | Requ | uired | Measured | Requ | uired | |
| Distances | type ** | clearance | clearance | *Table | creepage | creepage | *Table | |
| Distance 1: | | | | | | | | |
| Working volt | age (V) | | | | | | _ | |
| Frequency if | applicable (k | (Hz) | | : | | | _ | |
| PTI | | | | | | _ | | |
| Peak value of | of the workin | ng voltage Û | out if applicable | e (kV): | | | _ | |
| Supplementa | ary information | n: | | | 1 | | | |
| Distance 2: | | | | | | | | |
| Working volt | age (V) | | | : | | 1 | _ | |
| Frequency if | applicable (k | :Hz) | | : | | | _ | |
| PTI | | | | | < 600 🗌 | ≥ 600 □ | _ | |
| Peak value of | of the workir | ng voltage Û | out if applicable | e (kV): | | | _ | |
| Supplementa | ary information | n: | | | -L | | | |
| Distance 3: | | | | | | | | |
| Working volt | age (V) | | | | | 1 | _ | |
| Frequency if | applicable (k | Hz) | | | | | _ | |
| PTI | | | | | < 600 🗌 | ≥ 600 □ | | |
| Peak value of the working voltage \hat{U}_{out} if applicable (kV): | | | | | | | | |
| Supplementa | ary information | n: | | | | | | |
| ** Insulation | type: B – Bas | sic; S – Supp | lementary; R - | Reinforced. | | | | |



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|--------|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

| 4.16 (13.2.1) | TABLE: Ball Pressure Test of Thermoplastics | | | | |
|-----------------------------------|---|----------------------------|-----------------------|------------------------|--|
| Allowed impression diameter (mm): | | ≤ 2 mm | | _ | |
| Object/ Part No./ Material | | Manufacturer/ trademark | Test temperature (°C) | Impression diameter (m | |
| DC socket | | | 125 | 0,95 | |
| Lens | | | 75 | 0,92 | |
| Supplement | ary information: | • | | • | |

| 4.16 (13.3.1) | TABLE: Needle-flame test (IEC 60695-11-5) | | | | | Р |
|-------------------------------|---|----------------------------|---|--|------------------------------------|---------|
| 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 |
| DC socket | | | 10s | No | 0 | Р |
| Supplementary information: | | | | | | |

| 4.16 (13.3.2) | TABLE: Glow-wire test (IEC 60695-2-11) | | | | Р | |
|--|--|-------|------------------------------------|------------------------------|---------|---|
| Glow wire temperature: | | 650°C | | | _ | |
| Object/ Part No./ Manufacturer, Material trademark | | | Ignition of specified layer Yes/No | Duration of burning (tb) (s) | Verdict | |
| Silicone tube | Э | | | No | 0 | Р |
| Lens | | | | No | 0 | Р |
| Supplementary information: | | | | | | |

| 4.16 (13.4) TABLE: Proof tracking test (IEC 60112) | | | | | N/A |
|--|----------------------------|--|--|--|---------|
| Test voltage PTI:: | | 175 V | | | _ |
| Object/ Part No./ Material | Manufacturer/ trademark | Withstand 50 drops without failure on three places or on three specimens | | | Verdict |
| | | | | | |
| Supplementary information: | | | | | |



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|--------|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

| ANNEX 1 | TABL | ABLE: Critical components information | | | | | | |
|----------------------|-------|---------------------------------------|--|--------------|--|---------------------------------|-----|----------------------------------|
| Object / part No. | | | Manufacturer/ trademark | Type / model | Technical data | Standard | | k(s) of formity ¹⁾ |
| AC/DC Adap | tor (| С | Huizhou Guoaolong Technology Co., Ltd. | GA-0501000V | INPUT:100-240V, 50/60Hz, 0.6A; OUTPUT: 5VDC1A | EN 61347-1 EN 61347-2- 13 | CE | |
| Cable | (| С | Guangdong Yongroi Cable Technology Co Ltd | 2464 | 22AWG, 80V°C, 300V | EN 60598-2-4 EN 60598-1 | арр | t with liance E204893 |
| Switch | E | В | MSJ Technology Zhongshan Co.,ltd | | 5V, 1A | EN 60598-2-4 EN 60598-1 | | t with liance |
| LED | (| С | CREE | | VF=2.8-3.6V, IF=60-150mA, 395-400 nm, BULE | IEC/EN 62031 | | t with liance |

Supplementary information:

The codes above have the following meaning:

- A The component is replaceable with another one, also certified, with equivalent characteristics
- B The component is replaceable if authorised by the test house
- C Integrated component tested together with the appliance
- D Alternative component

¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.



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| Clause | Requirement + Test | Result - Remark | Verdict |

| ANNEX 2 | TABLE: Thermal tests of Section 12 | | | | | | | | |
|---------------|---|--------------|--|-----|--|--|-------|----------|----------|
| | Type reference | | R007 | | | | _ | | |
| | Lamp used | | : | | LED | | | | _ |
| | Lamp control gear used | | : | | GA-05 | 501000V | | | _ |
| | Mounting position of luminaire | | | | As no | rmal use | | | _ |
| | Supply wattage (W) | | : | | T2: 5, T4: 0\ | • | | | _ |
| | Supply current (A) | | : | | T2: 1, T4: 0/ | | | | _ |
| | Temperatures in test 1 - 4 below ta (°C) | | 25 °C | | | | | | |
| | - abnormal operating mode: | | | | | Short Circuit of AC/DC adaptor output; | | | |
| 4.13 (12.4) | - test 1: rated voltage | | | | | | | | N/A |
| | - test 2: 1,06 times rated voltage wattage or 1,1 times constant v | | 240V x1,06=254,4V for the AC/DC adaptor input. | | | | Р | | |
| | - test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage: | | | | | | | | |
| | Through wiring or looping-in wir current of A during the test | | | | | | N/A | | |
| 4.13 (12.5) | - test 4: 1,1 times rated voltage wattage or 1,1 times constant v 130/150% of rated input voltage | oltage/curre | ent or | | Test 4: 240V x1,1=264V for the AC/DC adaptor input | | | | Р |
| | Temp | erature me | asureme | nts | (°C) | | | | |
| | | | | CI. | 12.4 | - normal | | CI. 12.5 | – abnor. |
| Part | | Ambient | test 1 | te | est 2 | test 3 | limit | test 4 | limit |
| Top enclosu | ire of AC/DC adaptor | | | 3 | 36,5 | | 75 | 30,4 | 75 |
| Side enclos | ure of AC/DC adaptor | | | 2 | 28,3 | | 75 | 27,9 | 75 |
| Plug interfac | ce of AC/DC adaptor | | | 3 | 30,5 | | 70 | 28,2 | Ref. |
| External cal | ole of AC/DC adaptor | | | 3 | 30,4 | | 90 | | |

28,2

28,3

63,3

103,9

Ref.

55

180

Ref.

Internal wire to LED

DC socket

LEDs surface

Switch



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|--------------|---------------------------|----------|---------|------|-----------|----|------|---------|
| Clause | Clause Requirement + Test | | | | t - Remar | k | | Verdict |
| Metal body | | | | 52,8 | | 60 | | |
| LED lens | | | | 49,0 | | 75 | | |
| Light surfac | ce at 0,03m | | | 41,2 | | 90 | | |
| Mounting s | urface | | | 27,7 | | 90 | 27,4 | |
| Supplemen | tary information: | <u>.</u> | • | , | | | • | 1 |
| | | | | | | | | |



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| Clause | Requirement + Test | Result - Remark | Verdict |

| ANNEX 3 | Screw terminals (part of the luminaire) | | N/A |
|------------|---|---|-----|
| (14) | SCREW TERMINALS | | N/A |
| (14.2) | Type of terminal: | | _ |
| | Rated current (A) | | _ |
| (14.3.2.1) | One or more conductors | | N/A |
| (14.3.2.2) | Special preparation | | N/A |
| (14.3.2.3) | Terminal size | | N/A |
| | Cross-sectional area (mm²) | | _ |
| (14.3.3) | Conductor space (mm): | | N/A |
| (14.4) | Mechanical tests | | N/A |
| (14.4.1) | Minimum distance | | N/A |
| (14.4.2) | Cannot slip out | | N/A |
| (14.4.3) | Special preparation | | N/A |
| (14.4.4) | Nominal diameter of thread (metric ISO thread): | M | N/A |
| | External wiring | | N/A |
| | No soft metal | | N/A |
| (14.4.5) | Corrosion | | N/A |
| (14.4.6) | Nominal diameter of thread (mm) | | N/A |
| | Torque (Nm) | | N/A |
| (14.4.7) | Between metal surfaces | | N/A |
| | Lug terminal | | N/A |
| | Mantle terminal | | N/A |
| | Pull test; pull (N) | | N/A |
| (14.4.8) | Without undue damage | | N/A |



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|--------|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

| ANNEX 4 | Screwless terminals (part of the luminaire) | N/A |
|--------------|--|-----|
| (15) | SCREWLESS TERMINALS | N/A |
| (15.2) | Type of terminal: | _ |
| | Rated current (A): | _ |
| (15.3.1) | Material | N/A |
| (15.3.2) | Clamping | N/A |
| (15.3.3) | Stop | N/A |
| (15.3.4) | Unprepared conductors | N/A |
| (15.3.5) | Pressure on insulating material | N/A |
| (15.3.6) | Clear connection method | N/A |
| (15.3.7) | Clamping independently | N/A |
| (15.3.8) | Fixed in position | N/A |
| (15.3.10) | Conductor size | N/A |
| | Type of conductor | N/A |
| (15.5) | Terminals and connections for internal wiring | N/A |
| (15.5.1) | Mechanical tests | N/A |
| (15.5.1.1.1) | Pull test spring-type terminals (4 N, 4 samples): | N/A |
| (15.5.1.1.2) | Pull test pin or tab terminals (4 N, 4 samples): | N/A |
| | Insertion force not exceeding 50 N | N/A |
| (15.5.1.2) | Permanent connections: pull-off test (20 N) | N/A |
| (15.5.2) | Electrical tests | N/A |
| | Voltage drop (mV) after 1 h (4 samples): | N/A |
| | Voltage drop of two inseparable joints | N/A |
| | Number of cycles: | _ |
| | Voltage drop (mV) after 10th alt. 25th cycle (4 samples): | N/A |
| | Voltage drop (mV) after 50th alt. 100th cycle (4 samples): | N/A |
| | After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples): | N/A |
| | After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples): | N/A |
| (15.6) | Terminals and connections for external wiring | N/A |



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|------------|--|-----------------|---------|--|--|--|--|--|--|
| Clause | Requirement + Test | Result - Remark | Verdict | | | | | | |
| | | | | | | | | | |
| (15.6.1) | Conductors | | N/A | | | | | | |
| | Terminal size and rating | | N/A | | | | | | |
| 15.6.2 | Mechanical tests | | N/A | | | | | | |
| (15.6.2.1) | Pull test spring-type terminals or welded connections (4 samples); pull (N): | | N/A | | | | | | |
| (15.6.2.2) | Pull test pin or tab terminals (4 samples); pull (N): | | N/A | | | | | | |
| (15.6.3) | Electrical tests | | N/A | | | | | | |
| | Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1 | | N/A | | | | | | |



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|--------|--------------------|-----------------|---------|
| Clause | Requirement + Test | Result - Remark | Verdict |

| (15.6.3.1) (15.6.3.2) | ТАВІ | BLE: Contact resistance test / Heating tests | | | | | | | | | N/A |
|--------------------------|--------|--|------------|------------|-------------|-----------|----------|-------------|---|---|-----|
| | Volta | ge drop (m\ | /) after 1 | h | | | | | | | _ |
| terminal | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| voltage drop | o (mV) | | | | | | | | | | N/A |
| | | Voltage dro | p of two | insepara | able joints | s | | • | 1 | | N/A |
| | | Voltage dro | p after 1 | 0th alt. 2 | 5th cycle |) | | | | | N/A |
| | | Max. allow | ed voltag | e drop (r | nV) | : | | | | | |
| terminal | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| voltage drop (mV) | | | | | | | | | | | N/A |
| | | Voltage dro | p after 5 | 0th alt. 1 | 00th cyc | le | | • | 1 | | N/A |
| | | Max. allow | ed voltag | e drop (r | nV) | : | | | | | |
| terminal | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| voltage drop | o (mV) | | | | | | | | | | N/A |
| | | Continued | ageing: v | oltage d | rop after | 10th alt. | 25th cyc | le | | | N/A |
| | | Max. allow | ed voltag | e drop (r | nV) | : | | | | | |
| terminal | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| voltage drop | o (mV) | | | | | | | | | | N/A |
| | | Continued | ageing: v | oltage d | rop after | 50th alt. | 100th cy | cle | Ш | • | N/A |
| | | Max. allow | ed voltag | e drop (r | nV) | : | | | | | |
| terminal | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| voltage drop (mV) | | | | | | | | | | | N/A |
| voltage alop | | 1 | | | | . | + | | + | | + |



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| | IEC 60598-2-4_ATTACHMENT | | | |
|--------|--------------------------|--|-----------------|---------|
| Clause | Requirement + Test | | Result - Remark | Verdict |

ATTACHMENT TO TEST REPORT IEC 60598-2-4 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Luminaires

Part 2: Particular requirements Section 4: Portable general purpose luminaires

Differences according to EN 60598-2-4:2018 used in conjunction with

EN IEC 60598-1:2021+A11:2022

TRF template used IECEE OD-2020-F2:2020, Ed. 1.1

Annex Form No...... EU_GD_IEC60598_2_4I_II

Annex Form Originator IMQ S.p.A.

Master Annex Form..... Dated 2022-07-01

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| CENELEC COMMON MODIFICATIONS (EN) | | Р | |
|-----------------------------------|-------------------|---|-----|
| | | | |
| 4.5 (3) | MARKING | | Р |
| (3.2.12) | Delete the note 4 | | N/A |

| 4.6 (4) | CONSTRUCTION | |
|--------------|---|-----|
| 4.6 (4.11.6) | Electro-mechanical contact systems: electric strength test at 1 500 V | N/A |

| 4.10 (5) | 5) EXTERNAL AND INTERNAL WIRING | | P |
|--------------|---|--|-----|
| 4.11 (5.2.2) | Cables equal to EN 50525 | | Р |
| 4.11 (5.2.2) | Delete paragraph 2 | | N/A |
| | Replace table 5.1 – Supply cord | | Р |
| 4.11.4 (-) | For class I and class II portable luminaires for outdoor use, non-detachable flexible cables or cords not lighter than type H05RN-F | | N/A |

| 4.12 (12) | ENDURANCE TESTS AND THERMAL TESTS | Р |
|----------------|---|-----|
| 4.12 (12.4.2c) | Thermal test (normal operation) see footnote c to table 12.2 relating to unsleeved fixed wiring | N/A |



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| | IEC 60598-2-4_ATTACHMENT | | | |
|--------|--------------------------|--|-----------------|---------|
| Clause | Requirement + Test | | Result - Remark | Verdict |

| ZB | ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN) | N/A |
|-----------|--|-----|
| (3.3) | DK: power supply cords of class I luminaires with label | N/A |
| (5.2.18) | DK: socket-outlets | N/A |
| (5.2.1) | CY, DK, FI, GB: type of plug | N/A |
| 4.4.4 (-) | DK: luminaires for outdoor use classified as class II or class III | N/A |

| ZC | ANNEX ZC, NATIONAL DEVIATIONS (EN) | | /A |
|---------|---|----|----|
| (4 & 5) | FR: Shuttered socket-outlets 10/16A | N/ | /A |
| | FR: Safety requirements for high buildings (Arrêté du 30 décembre 2011 portant règlement de des immeubles de grande hauteur et leur protectio de panique; Section VIII; Article GH 48, Eclairage) Glow-wire test for outer parts of luminaires: | | /A |
| | - 850°C for luminaires in stairways and horizontal travel paths | N/ | /A |
| | - 650°C for indoor luminaires | | /A |
| | GB: Requirements according to United Kingdom Building Regulation | N/ | /A |



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| | IEC 60598-2-4_ATTACHMENT | | | |
|--------|---|---------------------|---------|--|
| Clause | Requirement + Test | Result - Remark | Verdict | |
| | | | | |
| | Attachment 2: Additional test of IEC 62031:2018 and | d EN IEC 62031:2020 | Р | |
| | Note: The text of the International Standard IEC 62031 CENELEC as a European Standard without any modif | | | |
| | CENELEC as a European Standard without any moun | Ication | | |
| 4 | GENERAL REQUIREMENTS | | Р | |
| 4.2 | Classification | | | |
| | Built-in module: | Yes □ No ⊠ | _ | |
| | Independent module: | Yes ☐ No ⊠ | _ | |
| | Integral module: | Yes ⊠ No □ | _ | |
| 4.6 | Independent modules comply with requirements in IEC 60598-1:2014/AMD1:2017 | | N/A | |
| 4.8 | Modules with integrated controlgear providing SELV comply with requirements according to IEC 61347-1:2015/AMD1:2017 clause L.5 to L.11. | (see Annex 1) | N/A | |
| | | | | |
| 6 | MARKING | | N/A | |
| 0.0 | Remark: considered in luminaire | ut LED was distant | N1/A | |
| 6.2 | Contents of marking for built-in and for independe | nt LED modules | N/A | |
| | a) mark of origin | | N/A | |
| | b) model number, type reference | | N/A | |
| | c1) constant voltage module; rated supply voltage and supply frequency | | N/A | |
| | c2) constant current module; rated supply current and supply frequency | | N/A | |
| | d) rated power | | N/A | |
| | e) indication of connections, wiring diagram | | N/A | |
| | f) value of t _c and place on the module | | N/A | |
| | g) Ethr if required | | N/A | |
| | h) symbol for built-in modules | | N/A | |
| | i) heat transfer temperature $t_{\rm d}$ | | N/A | |
| | j) power for heat-conduction P _d | | N/A | |
| | k) working voltage for insulation | | N/A | |
| 6.3 | Location of marking for built-in LED modules | | N/A | |
| | - marking of a) and b) in 6.2 on the modules | | N/A | |



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| | 3 | <u>'</u> | |
|---------|--|-----------------|--------|
| | IEC 60598-2-4_ATTACHM | MENT | |
| Clause | Requirement + Test | Result - Remark | Verdic |
| | | | N1/A |
| | - marking of other applicable items in 6.2 on the modules or in data sheet, leaflet or website | | N/A |
| 6.4 | Location of marking for independent LED module | es | N/A |
| | - marking of a), b), c) and f) in 6.2 on the modules | | N/A |
| | - marking of other applicable items in 6.2 on the modules or in data sheet, leaflet or website | | N/A |
| 6.5 | Marking of integral LED modules | | N/A |
| | - information in 6.2 a) to g) in data sheet, leaflet or website | | N/A |
| 6.6 | Durable and legibility of marking | | N/A |
| | - marking on the LED module legible after test with water | | N/A |
| | - marking not on the LED module legible | | N/A |
| 7 | TERMINALS | | N/A |
| 7.1 | Integral terminals | | N/A |
| | Screw terminals comply with section 14 of IEC 60598-1 | (see Annex 3) | N/A |
| | Screwless terminals comply with section 15 of IEC 60598-1 | (see Annex 4) | N/A |
| 7.2 | Terminals other than integral terminals | | |
| | Separately approved; component list | (see Annex 2) | N/A |
| | Ratings suit the conditions | | N/A |
| | Satisfy additional relevant requirements of this standard | | N/A |
| 8 (9) | EARTHING | | N/A |
| 0 (40) | DROTECTION ACAINST ACCIDENTAL CONTACT | WITH LIVE DARTO | |
| 9 (10) | PROTECTION AGAINST ACCIDENTAL CONTACT Remark: considered in luminaire | WITH LIVE PARTS | P |
| 10 (11) | MOISTURE RESISTANCE AND INSULATION | | Р |
| | Remark: considered in luminaire | | |
| 11 (12) | ELECTRIC STRENGTH | | Р |
| | Remark: considered in luminaire | | |



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| | IEC 00398-2-4_ATTACHMENT | | | | |
|----------|--|-----------------|---------|--|--|
| Clause | Requirement + Test | Result - Remark | Verdict | | |
| 10 (11) | EALU E CONDITIONS | | | | |
| 12 (14) | FAULT CONDITIONS | | Р | | |
| - (14.1) | When operated under fault conditions the controlgear | : | Р | | |
| | does not smit flames or malten meterial | | D | | |

| 12 (14) | FAULT CONDITIONS | | Р |
|----------|---|----------------------|-----|
| - (14.1) | When operated under fault conditions the controlgear: | : | Р |
| | - does not emit flames or molten material | | Р |
| | - does not produce flammable gases | | Р |
| | - protection against accidental contact not impaired | | Р |
| | Thermally protected controlgear does not exceed the marked temperature value | | N/A |
| | Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected | (see appended table) | N/A |
| - (14.2) | Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (after any reduction in 14.2 - 14.5) | (see appended table) | N/A |
| - (14.3) | Short-circuit or interruption of semiconductor devices | (see appended table) | Р |
| - (14.4) | Short-circuit across insulation consisting of lacquer, enamel or textile | (see appended table) | N/A |
| - (14.5) | Short-circuit across electrolytic capacitors | (see appended table) | N/A |
| | Short-circuit or interruption of SPDs | (see appended table) | N/A |
| - (14.6) | After the tests has been carried out on three samples: | | Р |
| | The insulation resistance \geq 1 M Ω | >100 MΩ | Р |
| | No flammable gases | | Р |
| | No accessible parts have become live | | Р |
| | During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite | | Р |
| - (14.7) | Relevant fault condition tests with high-power a.c. supply and in turn to a d.c. supply | | _ |
| 12.2 | Overpower condition | | Р |
| | Module withstands overpower condition >15 min. | 1,5 time wattage | Р |
| | Module with automatic protective device or power limiter, test performed 15 min. at limit. | | Р |
| | No fire, smoke or flammable gas is produced | | Р |
| | Molten material does not ignite tissue paper, spread below the module | | Р |

| 14 (15) | CONSTRUCTION | Р |
|----------|--|-----|
| - (15.1) | Wood, cotton, silk, paper and similar fibrous material | N/A |



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| | IEC 60598-2-4_ATTACHMENT | | | | | | | |
|----------|---|------------------|-----|--|--|--|--|--|
| Clause | Clause Requirement + Test Result - Remark | | | | | | | |
| | | | | | | | | |
| | Wood, cotton, silk, paper and similar fibrous material not used as insulation | No such material | N/A | | | | | |
| - (15.2) | Printed circuits | • | N/A | | | | | |
| | Printed circuits used as internal connections complies with clause 14 | | N/A | | | | | |

| 15 (16) | CREEPAGE DISTANCES AND CLEARANCES | | Р |
|------------|--|-------------------------|-----|
| | Remark: considered in luminaire | | |
| - (16.1) | General | | Р |
| | Creepage distances and clearances according to 16.2 and 16.3 | | N/A |
| | Controlgears providing SELV comply with additional requirements in Annex L | | N/A |
| | Insulating lining of metallic enclosures | | N/A |
| | Controlgear protected against pollution comply with Annex P | | N/A |
| - (16.2) | Creepage distances | | Р |
| - (16.2.2) | Minimum creepage distances for working voltages | Р | |
| | Creepage distances according to Table 7 | (see appended table) | Р |
| - (16.2.3) | Creepage distances for working voltages with frequer | ncies above 30 kHz | N/A |
| | Creepage distances according to Table 8 | (see appended table) | N/A |
| - (16.3) | Clearances | Р | |
| - (16.3.2) | Clearances for working voltages | | Р |
| | Clearances distances according to Table 9 | (see appended table) | Р |
| - (16.3.3) | Clearances for ignition voltages and working voltages | with higher frequencies | N/A |
| | Clearances distances for basic or supplementary insulation according to Table 10 | | N/A |
| | Clearances distances for reinforced insulation according to Table 11 | | N/A |

| 16 (17) | SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS | | | |
|----------|---|--|-----|--|
| | Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1) | | | |
| (4.11) | Electrical connections | | Р | |
| (4.11.1) | Contact pressure | | N/A | |
| (4.11.2) | Screws: | | N/A | |



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| | IEC 60598-2-4_ATTACHM | ENT | | | |
|----------|--|--------------------------|---------|--|--|
| Clause | Requirement + Test | Result - Remark | Verdict | | |
| | - self-tapping screws | | N/A | | |
| | - thread-cutting screws | | N/A | | |
| (4.11.3) | Screw locking: | | N/A | | |
| () | - spring washer | | N/A | | |
| | - rivets | | N/A | | |
| (4.11.4) | Material of current-carrying parts | | P | | |
| (4.11.5) | No contact to wood or mounting surface | | Р | | |
| (4.11.6) | Electro-mechanical contact systems | | N/A | | |
| (4.12) | Mechanical connections and glands | 1 | N/A | | |
| (4.12.1) | Screws not made of soft metal | | N/A | | |
| | Screws of insulating material | | N/A | | |
| | Torque test: torque (Nm); part: | | N/A | | |
| | Torque test: torque (Nm); part: | | N/A | | |
| | Torque test: torque (Nm); part: | | N/A | | |
| (4.12.2) | Screws with diameter < 3 mm screwed into metal | | N/A | | |
| (4.12.4) | Locked connections: | | | | |
| | - fixed arms; torque (Nm): | | N/A | | |
| | - lampholder; torque (Nm): | | N/A | | |
| | - push-button switches; torque 0,8 Nm: | | N/A | | |
| (4.12.5) | Screwed glands; force (Nm): | | N/A | | |
| 17 (18) | RESISTANCE TO HEAT, FIRE AND TRACKING | | Р | | |
| | Remark: considered in luminaire | | | | |
| - (18.1) | Ball-pressure test | See Test Table 17 (18.1) | N/A | | |
| - (18.2) | Test of printed boards: | See Test Table 17 (18.2) | N/A | | |
| - (18.3) | Glow-wire test (650°C): | See Test Table 17 (18.3) | N/A | | |
| - (18.4) | Needle-flame test (10 s): | See Test Table 17 (18.4) | N/A | | |
| - (18.5) | Proof tracking test: | See Test Table 17 (18.5) | N/A | | |
| 18 | RESISTANCE TO CORROSION | | N/A | | |
| | Comply with requirements according 4.18 of IEC 60598-1 | | N/A | | |
| 20 | HEAT MANAGEMENT | | N/A | | |
| 20.1 | General | | N/A | | |



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| IEC 60598-2-4_ATTACHMENT | | | | | | | |
|--------------------------|--|--|-----|--|--|--|--|
| Clause | lause Requirement + Test Result - Remark | | | | | | |
| | | | | | | | |
| | Fulfil clause 20 if replaceable LED module and when heat conducting thermal interface is needed. | | N/A | | | | |
| 20.2 | Thermal interface material | | N/A | | | | |
| | Thermal interface material delivered with the module if necessary | | N/A | | | | |
| 20.3 | Heat protection | | N/A | | | | |
| | Not impair safety when operated under poor heat- conduction conditions according Annex D | | N/A | | | | |

| 22 | PHOTOBIOLOGICAL SAFETY | |
|------|---|-----|
| 22.1 | UV radiation | |
| | Luminous radiation not exceed 2mW/klm | N/A |
| 22.2 | Blue light hazard | |
| | Assessed according to IEC TR 62778 | N/A |
| 22.3 | Infrared radiation | |
| | Requirements for infrared radiation when required | N/A |

| Α | ANNEX A - TESTS | | | |
|---|--|--|---|--|
| | All tests performed in accordance with the advice given in Annex H of IEC 61347-1, if applicable | | Р | |

| 12 (14) | TABLE: tests of fault conditions | |
|---------------|----------------------------------|----|
| Part | Simulated fault | |
| LED module | 150 % overpower test | NO |
| One LED | S/C: LED shut down | NO |



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| IEC 60598-2-4_ATTACHMENT | | | | |
|--------------------------|--------------------|-----------------|---------|--|
| Clause | Requirement + Test | Result - Remark | Verdict | |

| 15 (16) TABLE: clearance and creepage distance measurements (mm) Remark: considered in luminaire | | | | | | | N/A | |
|--|--|--------------------------|------------------|---------|----------|-------------------|--------|--|
| | Applicable part of IEC 61347-1 Table 7 – 11* | | | | | | | |
| Distances | Insulation | Measured | Requ | uired | Measured | Requi | ed | |
| | type ** | clearance | clearance | *Table | creepage | creepage | *Table | |
| Distance 1: | | | | 3 | | | 3 | |
| Working volt | age (V) | | | ·····: | | | _ | |
| Frequency if | applicable (kł | Hz) | | ·····:: | | | _ | |
| PTI | | | | ·····:: | < 600 ⊠ | <u>></u> 600 □ | _ | |
| Peak value of | of the working | voltage Û _{out} | if applicable (k | V):: | | | _ | |
| Pulse voltag | e if applicable | (kV) | | : | | | — | |
| Supplementa | ary information | : | | | | | | |
| Distance 2: | | | | 3 | | | 3 | |
| Working volt | age (V) | | | ·····:: | | | _ | |
| Frequency if | applicable (kl | Hz) | | ·····: | | | _ | |
| PTI | | | | ·····: | < 600 ⊠ | ≥ 600 □ | _ | |
| Peak value of | of the working | voltage Û _{out} | if applicable (k | V): | | | _ | |
| Pulse voltag | e if applicable | (kV) | | ·····:: | | | _ | |
| Supplementa | ary information | : | | | | | | |
| Distance 3: | | | | | | | | |
| Working volt | age (V) | | | ·····: | | | _ | |
| Frequency if applicable (kHz): | | | | | | | _ | |
| PTI | PTI: | | | | | <u>></u> 600 □ | _ | |
| Peak value o | of the working | voltage Ûout | if applicable (k | V): | | | _ | |
| Pulse voltag | e if applicable | (kV) | | | _ | | | |



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| IEC 60598-2-4_ATTACHMENT | | | | |
|--------------------------|--------------------|-----------------|---------|--|
| Clause | Requirement + Test | Result - Remark | Verdict | |

| 17 (18.1) | TABLE: Ball Pres | sure Test of Thermo | plastics | | N/A |
|--------------|-------------------|----------------------------|-----------------------|--------------------|---------|
| Allowed imp | oression diameter | (mm): | 2 | | _ |
| Object/ Part | No./ Material | Manufacturer/ trademark | Test temperature (°C) | Impression diamete | er (mm) |
| | | | | | |
| | | | | | |
| Supplementa | ary information: | | | | |

| 17 (18.2) | TABLE: Test of printe | d boards | | | N/A |
|----------------------------------|----------------------------|---|------------------------------------|-------------------------|---------|
| Object/ Part No./ Material | Manufacturer/ trademark | Duration of application of test flame (s) | Ignition of specified layer Yes/No | Duration of burning (s) | Verdict |
| | | | | | |
| | | | | | |
| Supplement | tary information: | | , | | |

| 17 (18.3) | TABLE: | Glow-wire test | | | | | N/A |
|--------------------------|------------|--|-----|--|------------------------------------|------------------------------------|---------|
| Glow wire t | emperatu | re | : | 650°C | | | |
| Object/ Part Material | No./ | Manufacturer/ trademark | арр | Duration of lication of test ame (ta); (s) | Ignition of specified layer Yes/No | Duration of burning (tb) (s) | Verdict |
| | | | | | | | |
| | | | | | | | |
| | | of the sample extinguished drop did not ignite the und | | | | | Yes |
| Supplement | ary inform | ation: | | | | | |

| 17 (18.4) | TABLE: | Needle-flame test | | | | N/A |
|--------------------------|--------|----------------------------|---|--|------------------------------|---------|
| Object/ Part Material | No./ | Manufacturer/ trademark | Duration of application of test flame (ta); (s) | Ignition of specified layer Yes/No | Duration of burning (tb) (s) | Verdict |
| | | | | | | |
| | | | | | | |



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| | | IEC 60598-2-4_ATTACHME | NT | |
|--------|--------------------|------------------------|-----------------|---------|
| Clause | Requirement + Test | | Result - Remark | Verdict |

| Supplement | ary information: | | | | | |
|--------------|------------------|----------------------------|--------------------------------|------------------------------------|--------------|---------|
| 17 (18.5) | TABLE: Proof tra | cking test | | | | N/A |
| Test voltage | PTI | : | 175 V | | | _ |
| Object/ Part | No./ Material | Manufacturer/ trademark | Withstand 50 d places or on th | rops without fail ree specimens | ure on three | Verdict |
| | | | | | | |
| | | | | | | |
| Supplement | ary information: | | | | | |



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Details of: R007



Details of: R007





Details of: R007



Details of: DC socket

View:

[x] general

[] front

[] rear

[] right

[] left

[] top

[] bottom

[] internal



Details of: Adjusting devices



Details of: Switch





Details of: LED



Details of: LED





Details of: AC/DC Adapter

| View: | |
|----------------|---|
| [x] general | |
| [] front | |
| [] rear | D of the purple |
| [] right | wer et: 6, 50 ut: 5.0 |
| [] left | aday 2240V 260H V=110 N CHIN |
| [] top | A 55.66 PET |
| [] bottom | |
| [x] internal | |
| | |

Statement

- 1. This test report shall be invalid if altered, added or deleted, or if it is not signed by the tested, reviewed and approved person, or if it has no STU company stamp.
- The sample picking, sample sending and testing procedures of our company shall be carried out in accordance with relevant national, industrial and local standards as well as our company's procedure documents and operating instructions.
- For the sample submitted for inspection, the sample information in the test report is provided by applicant, our company is not responsible for its authenticity; the test data in the report is only responsible for the samples.
- 4. For on-site sampling testing, the test report only represents the measurement of items under on-site working conditions provided by the client during on-site sampling testing.
- Any objection to this report shall be submitted to our company within 15 days after the issuance of the report, and any delay shall be deemed as recognition of this report.
- 6. Without the written approval of our company, the report shall not be partially copied; it shall not be used as product label, advertisement or commercial publicity.
- 7. "Verdict" as "P" in the report means "Pass"; "F" means "Fail"; "N/A" means that the clause "Not apply".

---End of Report---