**Test Report issued under the responsibility of:**

# TEST REPORT
# IEC 60598-2-5
# Luminaires
# Part 2: Particular requirements
# Section 5: Floodlights

| | |
|---|---|
| **Report Number. ..... :** | ETA26050009S-002 |
| **Date of issue ..... :** | July 10, 2026 |
| **Total number of pages ..... :** | 47 pages |
| **Name of Testing Laboratory preparing the Report ..... :** | Hangzhou ETA Testing Technology Co., Ltd.<br>8/F., Building A, The Western Science Park, Yuhang District, Hangzhou, Zhejiang, China |
| **Applicant's name ..... :** | Hangzhou Longlux Electronic Technology Co., Ltd |
| **Address ..... :** | The Western Science Park, Hangzhou City, China |
| **Test specification:** | |
| **Standard ..... :** | IEC 60598-2-5:2015 used in conjunction with IEC 60598-1:2020 |
| **Test procedure ..... :** | IEC testing report |
| **Non-standard test method ..... :** | N/A |
| **TRF template used ..... :** | IECEE OD-2020-F1:2021, Ed.1.4 |
| **Test Report Form No. ..... :** | IEC60598_2_5G |
| **Test Report Form(s) Originator .... :** | Intertek Semko AB |
| **Master TRF ..... :** | 2021-11-11 |

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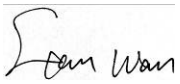
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| | |
|---|---|
| **Test item description ..... :** | LED Floodlight |
| **Trade Mark(s) ..... :** | Longlux |
| **Manufacturer ..... :** | Same as applicant above |
| **Model/Type reference ..... :** | See model list |
| **Ratings ..... :** | 220-240V~; 50/60Hz; Class I; ta 25°C; PF 0,9;<br>more details see model list |

Model list

| Model name | Rated Wattage (W) |
|---|---|
| LLX-FL-10W | 10 |
| LLX-FL-20W | 20 |
| LLX-FL-30W | 30 |
| LLX-FL-50W | 50 |
| LLX-FL-100W | 100 |
| LLX-FL-150W | 150 |
| LLX-FL-200W | 200 |

| | | | |
|---|---|---|---|
| **Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):** | | | |
| ☒ | **Testing Laboratory:** | Hangzhou ETA Testing Technology Co., Ltd. | |
| **Testing location/ address.....:** | | 8/F., Building A, The Western Science Park, Yuhang District, Hangzhou, Zhejiang, China | |
| **Tested by (name, function, signature).....:** | | Danny Zhou (Engineer) |  |
| **Approved by (name, function, signature)...:** | | Sean Wan (Reviewer) |  |
| ☐ | **Testing procedure: CTF Stage 1:** | | |
| **Testing location/ address.....:** | | | |
| **Tested by (name, function, signature).....:** | | | |
| **Approved by (name, function, signature)...:** | | | |
| ☐ | **Testing procedure: CTF Stage 2:** | | |
| **Testing location/ address.....:** | | | |
| **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):**<br>-Page 1 – 46: Test reports;<br>-Page 47: Photos of the samples |
| **Summary of testing:** Determination of the test result includes consideration of measurement uncertainty from the test equipment and methods.<br>A representative sample of the product covered by this report has been tested and complies with the applicable requirements of this standard.<br>South Africa Deviation SANS 475:2013 (Edition 1.2) had been considered and tested.<br>The power factor is larger than 0,5 with lamp power rating ≤ 25W, PF ≥ 0.85 for models with lamp power rating > 25W. |

| **Tests performed (name of test and test clause):** | **Testing location:** |
|---|---|
| Full | Same as previous pages. |

| |
|---|
| **Summary of compliance with National Differences (List of countries addressed):**<br><br>**N/A** |

**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.**

LED Floodlight
Model: LLX-FL-200W
220-240V~, 50/60Hz, 200W, PF=0,9
Class I, ta 25°C



IP65

**Hangzhou Longlux Electronic Technology Co., Ltd**
**The Western Science Park, Hangzhou City, China**

Note

1: Height of letter and numeral not less than 2mm, graphical symbol not less than 5mm.

2: WEEE not less than 7mm.

3: Label for other models are the same except the model number and parameter.

4: When the equipment is vended to EU, then name and address of the importer or authorized representative within the EEA shall be added on the equipment.

"Terminal block not included. Installation must be performed by a qualified person."

| | |
|---|---|
| **Test item particulars.....:** | LED Floodlight |
| **Classification of installation and use.....:** | IP65, Class I |
| **Supply Connection.....:** | Supply cord |
| **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 .....:** | May 15, 2026 |
| **Date (s) of performance of tests.....:** | May 15, 2026 – July 10, 2026 |

**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.**

**Clause numbers between brackets refer to clauses in 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**<br>☒ **Not applicable** |

**When differences exist; they shall be identified in the General product information section.**

| | |
|---|---|
| **Name and address of factory (ies).....:** | Hangzhou Longlux Electronic Technology Co., Ltd<br>The Western Science Park, Hangzhou City, China |

**General product information and other remarks:**

The products covered in test report are LED floodlights with non-replaceable light source.

All models share similar appearance, construction and circuit diagram except size and rated power. Model differences see attachment model list.

All relevant tests are applied to LLX-FL-200W, which was considered representative for the series and gave the most unfavourable test results;

Refer to Appendix 1 for the testing of LED module according to IEC 62031:2018

The products are tested according to IEC/TR 62778:2014 and classified as RG1.

According clause 4.2.2 of IEC 62493:2015+ A1:2022, lighting equipment deemed to comply with the requirements of IEC 62493:2015+ A1:2022 without testing.

**Amendment 1 ETA26050009S-002**

The original test report ref. No. ETA26050009S-001, dated June 05, 2026; Amendment 1 was modified on July 10, 2026 include the following changes and/or additions:

1.Added Measurement PF on ANNEX 2
2. The PF of all models were tested to be greater than 0.9 at rated voltage (240V~, 50Hz).

| IEC 60598-2-5 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| **5.2 (0)** | **GENERAL TEST REQUIREMENTS** | | P |
| 5.2 (0.3) | More sections applicable..... : | Yes ☐ No ☒<br>Section/s: | — |
| 5.2 (0.5) | Components | (see Annex 1) | — |
| **5.2 (0.7)** | **Information for luminaire design in light sources standards** | | — |
| 5.2 (0.7.2) | Light source safety standard ..... : | IEC 62031 | — |
| | Luminaire design in the light source safety standard | | P |
| **5.4 (2)** | **CLASSIFICATION OF LUMINAIRES** | | P |
| 5.4 (2.2) | Type of protection ..... : | Class I | P |
| 5.4 (2.3) | Degree of protection..... : | IP65 | P |
| 5.4 (2.4) | Luminaire suitable for direct mounting on normally flammable surfaces ..... : | Yes ☒ No ☐ | — |
| 5.4 (2.5) | Luminaire for normal use ..... : | Yes ☒ No ☐ | — |
| | Luminaire for rough service ..... : | Yes ☐ No ☒ | — |
| **5.5 (3)** | **MARKING** | | P |
| 5.5 (3.2) | Mandatory markings | | P |
| | Position of the marking | | P |
| | Format of symbols/text | | P |
| 5.5 (3.3) | Additional information | | P |
| | Language of instructions | English | P |
| 5.5 (3.3.1) | Combination luminaires | | N/A |
| 5.5 (3.3.2) | Nominal frequency in Hz | 50/60Hz | P |
| 5.5 (3.3.3) | Operating temperature | ta 25°C | P |
| 5.5 (3.3.5) | Wiring diagram | | P |
| 5.5 (3.3.6) | Special conditions | | N/A |
| 5.5 (3.3.7) | Metal halide lamp luminaire – warning | | N/A |
| 5.5 (3.3.8) | Limitation for semi-luminaires | | N/A |
| 5.5 (3.3.9) | Power factor and supply current | PF=0,9 | P |
| 5.5 (3.3.10) | Suitability for use indoors | | N/A |
| 5.5 (3.3.11) | Luminaires with remote control | | N/A |
| 5.5 (3.3.12) | Clip-mounted luminaire – warning | | N/A |

| IEC 60598-2-5 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 5.5 (3.3.13) | Specifications of protective shields | | N/A |
| 5.5 (3.3.14) | Symbol for nature of supply | | P |
| 5.5 (3.3.15) | Rated current of socket outlet | | N/A |
| 5.5 (3.3.16) | Rough service luminaire | | N/A |
| 5.5 (3.3.17) | Mounting instruction for type Y, type Z and some type X attachments | Type Z | P |
| 5.5 (3.3.18) | Non-ordinary luminaires with PVC cable | | N/A |
| 5.5 (3.3.19) | Protective conductor current in instruction if applicable | | N/A |
| 5.5 (3.3.20) | Provided with information if not intended to be mounted within arm's reach | | P |
| 5.5 (3.3.21) | Non replaceable and non-user replaceable light sources information provided | Non-replaceable | P |
| 5.5 (3.3.22) | Controllable luminaires, classification of insulation provided | | N/A |
| 5.5 (3.3.23) | Luminaires without control gear provided with necessary information for selection of appropriate component | | N/A |
| 5.5 (3.3.24) | If not supplied with terminal block, information on the packaging | | P |
| 5.5 (3.3.25) | Luminaires employing light sources emitting UV on mains wiring, information provided | | N/A |
| 5.5 (3.3.26) | Wall mounted luminaire using external flexible cable or cord longer than 0.3 m, information provided | | N/A |
| 5.5 (3.4) | Test with water | | P |
| | Test with hexane | | P |
| | Legible after test | | P |
| | Label attached | | P |
| 5.5 (-) | Additional information if applicable | | P |
| | a) Operation position | | P |
| | b) Weight and dimensions | | P |
| | c) Maximum protected area | | P |
| | d) Limitation of use indoors and/or outdoor | | P |
| | e) Maximum mounting height if ≤ 5 m | | P |
| **5.6 (4)** | **CONSTRUCTION** | | P |
| 5.6 (4.2) | Components replaceable without difficulty | | N/A |

| IEC 60598-2-5 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 5.6 (4.3) | Wireways smooth and free from sharp edges | | P |
| **5.6 (4.4)** | **Lampholders** | | N/A |
| 5.6 (4.4.1) | Integral lampholder | | N/A |
| 5.6 (4.4.2) | Wiring connection | | N/A |
| 5.6 (4.4.3) | Lampholder for end-to-end mounting | | N/A |
| 5.6 (4.4.4) | Positioning | | N/A |
| | - pressure test (N) ..... : | N/A | — |
| | 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) ..... : | N/A | — |
| | After test the lampholder have not moved from its position and show no permanent deformation | | N/A |
| 5.6 (4.4.5) | Peak pulse voltage | | N/A |
| 5.6 (4.4.6) | Centre contact | | N/A |
| 5.6 (4.4.7) | Parts in rough service luminaires resistant to tracking | | N/A |
| 5.6 (4.4.8) | Lamp connectors | | N/A |
| 5.6 (4.4.9) | Caps and bases correctly used | | N/A |
| 5.6 (4.4.10) | Light source for lampholder or connection according IEC 60061 not connected another way | | N/A |
| **5.6 (4.5)** | **Starter holders** | | |
| | Starter holder in luminaires other than class II | | N/A |
| | Starter holder class II construction | | N/A |
| **5.6 (4.6)** | **Terminal blocks** | | |
| | Tails | | N/A |
| | Unsecured blocks | | N/A |
| **5.6 (4.7)** | **Terminals and supply connections** | | **P** |
| 5.6 (4.7.1) | Contact to metal parts | | P |
| 5.6 (4.7.2) | Test 8 mm live conductor | | P |
| | Test 8 mm earth conductor | | P |
| 5.6 (4.7.3) | Terminals for supply conductors | | P |
| 5.6 (4.7.3.1) | Welded method and material | | N/A |
| | - stranded or solid conductor | | N/A |

| IEC 60598-2-5 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | - 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 |
| 5.6 (4.7.4) | Terminals other than supply connection | | P |
| 5.6 (4.7.5) | Heat-resistant wiring/sleeves | | N/A |
| 5.6 (4.7.6) | Multi-pole plug | | N/A |
| | - test at 30 N | | N/A |
| **5.6 (4.8)** | **Switches** | | N/A |
| | - adequate rating | | N/A |
| | - adequate fixing | | N/A |
| | - polarized supply | | N/A |
| | - compliance with IEC 61058-1 for electronic switches | | N/A |
| **5.6 (4.9)** | **Insulating lining and sleeves** | | N/A |
| 5.6 (4.9.1) | Retainment | | N/A |
| | Method of fixing ..... : | | N/A |
| 5.6 (4.9.2) | Insulated linings and sleeves: | | N/A |
| | 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 |
| **5.6 (4.10)** | **Double or reinforced insulation** | | **P** |
| 5.6 (4.10.1) | No contact, mounting surface – accessible metal parts – wiring of basic insulation | | N/A |
| | Safe installation fixed luminaires | | N/A |
| | Capacitors and switches | | N/A |
| 5.6 (4.10.2) | Assembly gaps: | | P |
| | - not coincidental | | P |
| | - no straight access with test probe | | P |
| 5.6 (4.10.3) | Retainment of insulation: | | P |
| | - fixed | | P |

| IEC 60598-2-5 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | - unable to be replaced; luminaire inoperative | | P |
| | - sleeves retained in position | | N/A |
| | - lining in lampholder | | N/A |
| 5.6 (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 appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor | | N/A |
| | Capacitors comply with IEC 60384-14 | | N/A |
| | Resistors comply with test (a) in 14.1 of IEC 60065 | | N/A |
| **5.6 (4.11)** | **Electrical connections and current-carrying parts** | | P |
| 5.6 (4.11.1) | Contact pressure | | P |
| 5.6 (4.11.2) | Screws: | | P |
| | - self-tapping screws | | P |
| | - thread-cutting screws | | N/A |
| 5.6 (4.11.3) | Screw locking: | | P |
| | - spring washer | | P |
| | - rivets | | N/A |
| 5.6 (4.11.4) | Material of current-carrying parts | | P |
| 5.6 (4.11.5) | No contact to wood or mounting surface | | P |
| 5.6 (4.11.6) | Electro-mechanical contact systems | | N/A |
| **5.6 (4.12)** | **Screws and connections (mechanical) and glands** | | **P** |
| 5.6 (4.12.1) | Screws not made of soft metal | | P |
| | Screws of insulating material | | N/A |
| | Torque test: torque (Nm); part..... : | 0,5Nm; Earth screw | P |
| | Torque test: torque (Nm); part..... : | 0,5Nm; Screw fixing module | P |
| | Torque test: torque (Nm); part..... : | 2,5Nm; Screw adjust angle | P |
| 5.6 (4.12.2) | Screws with diameter < 3 mm screwed into metal | | P |
| 5.6 (4.12.4) | Locked connections: | | P |
| | - fixed arms; torque (Nm) ..... : | | N/A |
| | - lampholder; torque (Nm) ..... : | | N/A |
| | - push-button switches; torque 0,8 Nm ..... : | | N/A |

| IEC 60598-2-5 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 5.6 (4.12.5) | Screwed glands; force (Nm)..... : | Metal gland: 4,0Nm; | P |
| **5.6 (4.13)** | **Mechanical strength** | | **P** |
| 5.6 (4.13.1) | Impact tests: | | P |
| | - fragile parts; energy (Nm) ..... : | Lamp cover: 0,5 | P |
| | - other parts; energy (Nm)..... : | Enclosure: 0,7 | P |
| | 1) live parts | | P |
| | 2) linings | | N/A |
| | 3) protection | | P |
| | 4) covers | | P |
| 5.6 (4.13.2) | Metal parts have adequate mechanical strength | | P |
| 5.6 (4.13.3) | Straight test finger | | P |
| 5.6 (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 |
| 5.6 (4.13.6) | Tumbling barrel | | N/A |
| **5.6 (4.14)** | **Suspensions, fixings and means of adjusting** | | **P** |
| 5.6 (4.14.1) | Mechanical load: | | P |
| | A) four times the weight | | P |
| | B) torque 2,5 Nm | 2,5 Nm | P |
| | 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 |
| 5.6 (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 |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Bending moment (Nm) of semi-luminaire ..... : | | N/A |
| 5.6 (4.14.3) | Adjusting devices: | | P |
| | - flexing test; number of cycles..... : | 45 cycles | P |
| | - strands broken ..... : | No broken | P |
| | - electric strength test afterwards | | P |
| 5.6 (4.14.4) | Telescopic tubes: cords not fixed to tube; no strain on conductors | | N/A |
| 5.6 (4.14.5) | Guide pulleys | | N/A |
| 5.6 (4.14.6) | Strain on socket-outlets | | N/A |
| **5.6 (4.15)** | **Flammable materials** | | **P** |
| | - glow-wire test 650°C ..... : | See Test Table 5.15 (13.3.2) | P |
| | - spacing ≥30 mm | | N/A |
| | - screen withstanding test of 13.3.1 | | N/A |
| | - screen dimensions | | N/A |
| | - no fiercely burning material | | P |
| | - thermal protection | | N/A |
| | - electronic circuits exempted | | N/A |
| 5.6 (4.15.2) | Luminaires made of thermoplastic material with lamp control gear | | N/A |
| | a) construction | | N/A |
| | b) temperature sensing control | | N/A |
| | c) surface temperature | | N/A |
| **5.6 (4.16)** | **Luminaires for mounting on normally flammable surfaces** | | **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 |
| 5.6 (4.16.1) | Lamp control gear spacing: | | N/A |
| | - spacing 35 mm | | N/A |
| | - spacing 10 mm | | N/A |
| 5.6 (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 |

| IEC 60598-2-5 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 5.6 (4.16.3) | Design to satisfy the test of 12.6 | (see clause 12.6) | N/A |
| **5.6 (4.17)** | **Drain holes** | | **N/A** |
| | Clearance at least 5 mm | | N/A |
| **5.6 (4.18)** | **Resistance to corrosion** | | **P** |
| 5.6 (4.18.1) | - rust-resistance | | N/A |
| 5.6 (4.18.2) | - season cracking in copper | | N/A |
| 5.6 (4.18.3) | - corrosion of aluminium | | P |
| 5.6 (4.19) | Ignitors compatible with ballast | | N/A |
| 5.6 (4.20) | Rough service vibration | | N/A |
| **5.6 (4.21)** | **Protective shield** | | N/A |
| 5.6 (4.21.1) | Shield fitted if tungsten halogen lamps or metal halide lamps | | N/A |
| | Shield of glass if tungsten halogen lamps | | N/A |
| 5.6 (4.21.2) | Particles from a shattering lamp not impair safety | | N/A |
| 5.6 (4.21.3) | No direct path | | N/A |
| 5.6 (4.21.4) | Impact test on shield | | N/A |
| | Glow-wire test on lamp compartment..... : | See Test Table 5.15 (13.3.2) | N/A |
| 5.6 (4.22) | Attachments to lamps not cause overheating or damage | | N/A |
| 5.6 (4.23) | Semi-luminaires comply Class II | | N/A |
| **5.6 (4.24)** | **Photobiological hazards** | | **P** |
| 5.6 (4.24.1) | No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P) | | N/A |
| 5.6 (4.24.2) | Retinal blue light hazard | | P |
| | Class of risk group assessed according to IEC/TR 62778 ..... : | RG1 | — |
| | Luminaires with $E_{thr}$ : | | 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 |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | 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 |
| **5.6 (4.25)** | **Mechanical hazard** | | **P** |
| | No sharp point or edges | | P |
| **5.6 (4.26)** | **Short-circuit protection** | | N/A |
| 5.6 (4.26.1) | Adequate means of uninsulated accessible SELV parts | | N/A |
| 5.6 (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 |
| **5.6 (4.27)** | **Terminal blocks with integrated screwless 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 Ω | | N/A |
| **5.6 (4.28)** | **Fixing of thermal sensing control** | | **N/A** |
| | Not plug-in or easily replaceable type | | N/A |
| | 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 |
| **5.6 (4.29)** | **Luminaires with non-replaceable light source** | | P |
| | Not possible to replace light source | | P |
| | Live part not accessible after parts have been opened by hand or tools | | P |
| **5.6 (4.30)** | **Luminaires with non-user replaceable light source** | | |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol: | | N/A |
| | At least one fixing means requiring use of tool | | N/A |
| **5.6 (4.31)** | **Insulation between circuits** | | **P** |
| | Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3 | | P |
| | 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 |
| 5.6 (4.31.1) | SELV or PELV circuits | | N/A |
| | Used SELV/PELV source | | N/A |
| | Voltage ≤ ELV | | N/A |
| | Insulating of SELV/PELV circuits from LV supply | | N/A |
| | Insulating of SELV/PELV circuits from other non SELV/PELV circuits | | N/A |
| | Insulating of SELV/PELV circuits from FELV | | N/A |
| | Insulating of SELV/PELV circuits from other SELV/PELV circuits | | N/A |
| | SELV/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 | | N/A |
| | Socket outlets does not admit plugs of other voltage systems | | N/A |
| | Plugs and socket-outlets does not have protective conductor contact | | N/A |
| 5.6 (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 |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Socket-outlets does not have protective conductor contact | | N/A |
| 5.6 (4.31.3) | Other circuits | | P |
| | Other circuits insulated from accessible parts according Table X.1 | | P |
| | Class II construction with equipotential bonding for protection against indirect contacts with live parts: | | N/A |
| | - conductive parts are connected together | | N/A |
| | - test according 7.2.3 | | N/A |
| | - conductive part 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 |
| **5.6 (4.32)** | **Overvoltage protective devices** | | 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 |
| **5.6 (4.33)** | **Luminaire powered via information technology communication cabling** | | N/A |
| | Requirements for Class III luminaire | | N/A |
| | 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 |
| **5.6 (4.34)** | **Electromagnetic fields (EMF)** | | **P** |
| | No harmful electromagnetic fields | | P |
| **5.6 (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 |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| **5.6 (4.36)** | **Track-mounted luminaires** | | N/A |
| | Test in accordance with Annex A of IEC60570:2003/AMD2:2019 | | N/A |
| 5.6.1 (-) | At least IPX3 if for outdoor use | | P |
| 5.6.2 (-) | Lampholder brackets and lamp supports | | N/A |
| 5.6.3 (-) | Adjusting means | | P |
| 5.6.4 (-) | Controlling components | | N/A |
| 5.6.5 (-) | Fixing device | | P |
| | Wind force test | | P |
| 5.6.6 (-) | Locking of angular adjustment | | P |
| 5.6.7 (-) | Vibration resistance | | N/A |
| 5.6.8 (-) | Requirement on glass cover if mounting height > 5 m | | N/A |
| | Method of protection .....: | N/A | — |
| **5.7 (11)** | **CREEPAGE DISTANCES AND CLEARANCES** | | P |
| 5.7 (11.2) | Creepage distances and clearances..... : | See Table 5.7 (11.2) | P |
| | Impulse withstand category (Normal category II) (Category III Annex U, Table U.1) | Category II ☐ Category III ☐ | — |
| | Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1 | | N/A |
| 5.7 (11.2.2) | Creepage distances for frequency up to 30 kHz | See Test Table 5.7 (11.2) I | P |
| | Creepage distances for frequency over 30 kHz: | | |
| | - Controlgear marked with $\hat{U}_{OUT}$ and $f_{UOUT}$ according IEC 61347-1, clause 7.1, item w | See Test Table 5.7 (11.2) II | N/A |
| | - Requirements according IEC 60664-4 for controlgear not covered by IEC 61347 | See Test Table 5.7 (11.2) II | N/A |
| 5.7 (11.2.3) | Clearances for frequency up to 30 kHz | See Test Table 5.7 (11.2) I | P |
| | Clearances distances for frequency over 30 kHz: | | |
| | - Controlgear marked with $U_P$ | See Test Table 5.7 (11.2) II | N/A |
| | - Requirements according IEC 60664-4 for controlgear not covered by IEC 61347 | See Test Table 5.7 (11.2) II | N/A |
| **5.8 (7)** | **PROVISION FOR EARTHING** | | P |
| 5.8 (7.2.1 + 7.2.3) | Accessible metal parts | | P |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Metal parts in contact with supporting surface | | P |
| | Resistance < 0,5 Ω..... : | 0,028Ω | P |
| | Self-tapping screws used | | P |
| | Thread-forming screws | | N/A |
| | Thread-forming screw used in a grove | | N/A |
| | Protective earth makes contact first | | P |
| | 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 |
| 5.8 (7.2.2 + 7.2.3) | Protective earth continuity in joints, etc. | | P |
| 5.8 (7.2.4) | Locking of clamping means | | P |
| | Compliance with 4.7.3 | | P |
| 5.8 (7.2.5) | Protective earth terminal integral part of connector socket | | N/A |
| 5.8 (7.2.6) | Protective earth terminal adjacent to mains terminals | | P |
| 5.8 (7.2.7) | Electrolytic corrosion of the protective earth terminal | | P |
| 5.8 (7.2.8) | Material of protective earth terminal | | P |
| | Contact surface bare metal | | P |
| 5.8 (7.2.10) | Class II luminaire for looping-in | | N/A |
| | Double or reinforced insulation to functional earth | | N/A |
| 5.8 (7.2.11) | Protective earthing core coloured green-yellow | | P |
| | Length of earth conductor | | P |
| 5.8 (7.2.12) | PELV circuit connected to protective earth for functional purpose | | N/A |

| | | | |
|---|---|---|---|
| **5.9 (14)** | **SCREW TERMINALS** | | N/A |
| | Separately approved; component list | (see Annex 1) | N/A |
| | Part of the luminaire | (see Annex 3) | N/A |

| | | | |
|---|---|---|---|
| **5.9 (15)** | **SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS** | | P |
| | Separately approved; component list..... : | (see Annex 1) | P |
| | Part of the luminaire ..... : | (see Annex 4) | N/A |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| **5.10 (5)** | **EXTERNAL AND INTERNAL WIRING** | | P |
| **5.10 (5.2)** | **Supply connection and external wiring** | | **P** |
| 5.10 (5.2.1) | Means of connection ..... : | Supply cords | P |
| | 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 |
| 5.10 (5.2.2) | Type of cable ..... : | (see Annex 1) | P |
| | Nominal cross-sectional area (mm²) ..... : | (see Annex 1) | P |
| | Cables equal to IEC 60227 or IEC 60245 | | P |
| 5.10 (5.2.3) | Type of attachment, X, Y or Z | Type Z | P |
| 5.10 (5.2.5) | Type Z not connected to screws | | P |
| 5.10 (5.2.6) | Cable entries: | | P |
| | - suitable for introduction | | P |
| | - adequate degree of protection | | P |
| 5.10 (5.2.7) | Cable entries through rigid material have rounded edges | | P |
| 5.10 (5.2.8) | Insulating bushings: | | P |
| | - suitably fixed | | P |
| | - material in bushings | | P |
| | - material not likely to deteriorate | | P |
| | - tubes or guards made of insulating material | | P |
| 5.10 (5.2.9) | Locking of screwed bushings | | P |
| 5.10 (5.2.10) | Cord anchorage: | | P |
| | - covering protected from abrasion | | P |
| | - clear how to be effective | | P |
| | - no mechanical or thermal stress | | P |
| | - no tying of cables into knots etc. | | P |
| | - insulating material or lining | | P |
| 5.10 (5.2.10.1) | Cord anchorage for type X attachment: | | N/A |
| | a) at least one part fixed | | N/A |
| | b) types of cable | | N/A |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | 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 |
| 5.10 (5.2.10.2) | Adequate cord anchorage for type Y and type Z attachment | | P |
| 5.10 (5.2.10.3) | Tests: | | P |
| | - impossible to push cable; unsafe | | P |
| | - pull test: 25 times; pull (N) ..... : | 60 | P |
| | - torque test: torque (Nm)..... : | 0,25 | P |
| | - displacement ≤ 2 mm | | P |
| | - no movement of conductors | | P |
| | - no damage of cable or cord | | P |
| | - function independent of electrical connection | | P |
| 5.10 (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 30N | | N/A |
| 5.10 (5.2.11) | External wiring passing into luminaire | | P |
| 5.10 (5.2.12) | Looping-in terminals | | N/A |
| 5.10 (5.2.13) | Wire ends not tinned | | N/A |
| | Wire ends tinned: no cold flow | | P |
| 5.10 (5.2.14) | Mains plug same protection | | N/A |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Class III luminaire plug | | N/A |
| | No unsafe compatibility | | N/A |
| 5.10 (5.2.15) | Connectors for Class III luminaires (IEC 60603 or IEC 62680) | | N/A |
| 5.10 (5.2.16) | Appliance inlets (IEC 60320) | | N/A |
| | Installation couplers (IEC 61535) | | N/A |
| | Appliance inlet or connector systems (IEC 61984) | | N/A |
| 5.10 (5.2.17) | No standardized interconnecting cables properly assembled | | N/A |
| 5.10 (5.2.18) | Used plug in accordance with | | N/A |
| | - IEC 60083 | | N/A |
| | - other standard | | N/A |
| **5.10 (5.3)** | **Internal wiring** | | **P** |
| 5.10 (5.3.1) | Internal wiring of suitable size and type | | P |
| | Through wiring | | N/A |
| | - not delivered/ mounting instruction | | N/A |
| | - factory assembled | | N/A |
| | - socket outlet loaded (A) ..... : | | N/A |
| | - temperatures ..... : | (see Annex 2) | N/A |
| | Green-yellow for protective earth only | | P |
| 5.10 (5.3.1.1) | Internal wiring connected directly to fixed wiring | | P |
| | Cross-sectional area (mm²)..... : | (see Annex 1) | P |
| | Insulation thickness | Min 0,9mm | P |
| | Extra insulation added where necessary | | N/A |
| 5.10 (5.3.1.2) | Internal wiring connected to fixed wiring via internal current-limiting device | | P |
| | Cross-sectional area (mm²)..... : | | P |
| 5.10 (5.3.1.3) | Double or reinforced insulation for class II | | N/A |
| 5.10 (5.3.1.4) | Conductors without insulation | | N/A |
| 5.10 (5.3.1.5) | SELV/PELV current-carrying parts | | N/A |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 5.10 (5.3.1.6) | Insulation thickness other than PVC or rubber | | N/A |
| 5.10 (5.3.2) | Sharp edges etc. | | P |
| | No moving parts of switches etc. | | N/A |
| | Joints, raising/lowering devices | | N/A |
| | Telescopic tubes etc. | | N/A |
| | No twisting over 360° | | P |
| 5.10 (5.3.3) | Insulating bushings: | | N/A |
| | - suitable fixed | | N/A |
| | - material in bushings | | N/A |
| | - material not likely to deteriorate | | N/A |
| | - cables with protective sheath | | N/A |
| 5.10 (5.3.4) | Joints and junctions effectively insulated | | N/A |
| 5.10 (5.3.5) | Strain on internal wiring | | P |
| 5.10 (5.3.6) | Wire carriers | | N/A |
| 5.10 (5.3.7) | Wire ends not tinned | | P |
| | Wire ends tinned: no cold flow | | P |
| **5.10 (5.4)** | **Test to determine suitability of conductors having a reduced cross-sectional area** | | P |
| | Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2 | (see Annex 2) | P |
| | No damage to luminaire wiring after test | | P |

| | | | |
|---|---|---|---|
| **5.11 (8)** | **PROTECTION AGAINST ELECTRIC SHOCK** | | P |
| 5.11 (8.2.1) | Live parts not accessible | | P |
| | Basic insulated parts not used on the outer surface without appropriate protection | | P |
| | Basic insulated parts not accessible with standard test finger on portable, settable and adjustable luminaires | | N/A |
| | Basic insulated parts not accessible with Ø 50 mm probe from outside, other types of luminaires | | P |
| | Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements | | N/A |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | Basic insulation only accessible under lamp or starter replacement | | N/A |
| | Protection in any position | | P |
| | Double-ended tungsten filament lamp | | N/A |
| | Insulation lacquer not reliable | | P |
| | Double-ended high pressure discharge lamp | | N/A |
| | Relevant warning according to 3.2.18 fitted to the luminaire | | N/A |
| 5.11 (8.2.2) | Portable luminaire adjusted in most unfavourable position | | N/A |
| 5.11 (8.2.3.a) | Class II luminaire: | | N/A |
| | - basic insulated metal parts not accessible during starter or lamp replacement | | N/A |
| | - basic insulation not accessible other than during starter or lamp replacement | | N/A |
| | - glass protective shields not used as supplementary insulation | | N/A |
| 5.11 (8.2.3.b) | BC lamp holder of metal in class I luminaires shall be connected to protective earth | | N/A |
| 5.11 (8.2.3.c) | SELV circuits with exposed current carrying parts: | | N/A |
| | 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 |
| | - touch current if applicable (mA) ..... : | | N/A |
| | One conductive part insulated if required | | 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 |
| | Class III luminaire only for connection to SELV | | N/A |
| | Class III luminaire not provided with means for protective earthing | | N/A |
| 5.11 (8.2.3.d) | PELV circuits with exposed current carrying parts: | | N/A |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | 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 |
| | One pole insulated if required | | N/A |
| 5.11 (8.2.4) | Portable luminaire have protection independent of supporting surface | | N/A |
| 5.11 (8.2.5) | Compliance with the standard test finger or relevant probe | | P |
| 5.11 (8.2.6) | Covers reliably secured | | P |
| 5.11 (8.2.7) | Luminaire other than below with capacitor > 0,5 μF not exceed 50 V 1 min after disconnection | 0,3V | P |
| | Portable luminaire with capacitor > 0,1 μF (0.25) not exceed 34 V 1 s after disconnection | | N/A |
| | Other luminaires with capacitor > 0,1 μF (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection | | N/A |

| | | | |
|---|---|---|---|
| **5.12 (12)** | **ENDURANCE TEST AND THERMAL TEST** | | P |
| 5.12 (-) | If IP > IP 20 relevant test of (12.4), (12.5), (12.6) and (12.7) after (9.2) before (9.3) as specified in 5.13 | | — |
| **5.12 (12.2)** | **Selection of lamps and ballasts** | | — |
| | Lamp used according Annex B | (Lamp used see Annex 2) | — |
| | Control gear if separate and not supplied | (Control gear used see Annex 2) | — |
| **5.12 (12.3)** | **Endurance test:** | | P |
| | a) mounting-position ..... : | Normal use position | — |
| | b) test temperature (°C) ..... : | 35 | — |
| | c) total duration (h) ..... : | 240 | — |
| | d) supply voltage (V) ..... : | 264 | — |
| | d) if not equipped with control gear, constant voltage/current (V) or (A) ..... : | N/A | — |
| 5.12 (12.3.1d) | d) Class III luminaires powered via information technology communication cable: | | N/A |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | - voltage under normal operation (V)……...: | N/A | — |
| | - voltage under abnormal operation (V)……..: | N/A | — |
| | e) luminaire ceases to operate | | — |
| | f) luminaire with constant light output function | | N/A |
| 5.12 (12.3.2) | After endurance test: | | P |
| | - no part unserviceable | | P |
| | - luminaire not unsafe | | P |
| | - no damage to track system | | N/A |
| | - marking legible | | P |
| | - no cracks, deformation etc. | | P |
| **5.12 (12.4)** | **Thermal test (normal operation)** | (see Annex 2) | P |
| **5.12 (12.5)** | **Thermal test (abnormal operation)** | (see Annex 2) | P |
| **5.12 (12.6)** | **Thermal test (failed lamp control gear condition):** | | N/A |
| 5.12 (12.6.1) | Through wiring or looping-in wiring loaded by a current of (A) ..... : | N/A | — |
| | - case of abnormal conditions ..... : | N/A | — |
| | - 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 |
| 5.12 (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 |
| **5.12 (12.7)** | **Thermal test (failed lamp control gear in plastic luminaires):** | | N/A |
| 5.12 (12.7.1) | Luminaire without temperature sensing control | | N/A |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| 5.12 (12.7.1.1) | Luminaire with fluorescent lamp ≤ 70W | | N/A |
| | Test method 12.7.1.1 or Annex W ..... : | N/A | — |
| | Test according to 12.7.1.1: | | N/A |
| | - case of abnormal conditions ..... : | N/A | — |
| | - Ballast failure at supply voltage (V) ..... : | N/A | — |
| | - 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 ..... : | N/A | — |
| | - measured winding temperature (°C): at 1,1 Un ..... : | N/A | — |
| | - measured temperature of fixing point/exposed part (°C): at 1,1 Un ..... : | N/A | — |
| | - calculated temperature of fixing point/exposed part (°C) ..... : | N/A | — |
| | Ball-pressure test .....: | See Table 5.15 (13.2.1) | N/A |
| 5.12 (12.7.1.2) | Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA | | N/A |
| | - case of abnormal conditions ..... : | N/A | — |
| | - measured winding temperature (°C): at 1,1 Un ..... : | N/A | — |
| | - measured temperature of fixing point/exposed part (°C): at 1,1 Un ..... : | N/A | — |
| | - calculated temperature of fixing point/exposed part (°C) ..... : | N/A | — |
| | Ball-pressure test ..... : | See Table 5.15 (13.2.1) | N/A |
| 5.12 (12.7.1.3) | Luminaire with short circuit proof transformers ≤ 10 VA | | N/A |
| | - case of abnormal conditions ..... : | N/A | — |
| | - Components retained in place after the test | | N/A |
| | - Test with standard test finger after the test | | N/A |
| 5.12 (12.7.2) | Luminaire with temperature sensing control | | N/A |
| | - thermal link..... : | Yes ☐ No ☐ | — |
| | - manual reset cut-out ..... : | Yes ☐ No ☐ | — |
| | - auto reset cut-out ..... : | Yes ☐ No ☐ | — |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | - case of abnormal conditions ..... : | N/A | — |
| | - highest measured temperature of fixing point/ exposed part (°C): ..... : | N/A | — |
| | Ball-pressure test: ..... : | See Table 5.15 (13.2.1) | N/A |
| 5.12.1 (-) | Reduction 10 °C of measured temperatures if for outdoor use | | — |
| 5.12.2 (-) | Glass covers used within the thermal limits | | P |
| **5.13 (9)** | **RESISTANCE TO DUST AND MOISTURE** | | P |
| 5.13.1 (-) | If IP > IP 20 the order of tests as specified in clause 5.12 | | P |
| 5.13 (9.2) | Tests for ingress of dust, solid objects and moisture: | | P |
| | - classification according to IP..... : | IP65 | — |
| | - mounting position during test ..... : | Normal use position | — |
| | - fixing screws tightened; torque (Nm) ..... : | 2/3 torque | — |
| | - tests according to clauses..... : | 9.2.2 and 9.2.6 | — |
| | - electric strength test afterwards | | P |
| | a) no deposit in dust-proof luminaire | | N/A |
| | b) no talcum in dust-tight luminaire | | P |
| | c) no trace of water on current-carrying parts or on insulation where it could become a hazard | | P |
| | 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) | | N/A |
| | 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 |
| 5.13 (9.3) | Humidity test 48 h | | P |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| **5.14 (10)** | **INSULATION RESISTANCE AND ELECTRIC STRENGTH** | | P |
| 5.14 (10.2.1) | Insulation resistance test | | P |
| | Cable or cord covered by metal foil or replaced by a metal rod of mm Ø ..... : | Cover by metal foil | — |
| | Insulation resistance (MΩ) ..... : | See below | — |
| | SELV/PELV: | | N/A |
| | - between current-carrying parts of different polarity : | | N/A |
| | - between current-carrying parts and mounting surface..... : | | N/A |
| | - between current-carrying parts and metal parts of the luminaire..... : | | 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 |
| | Other than SELV/PELV: | | P |
| | - between live parts of different polarity ..... : | | N/A |
| | - between live parts and mounting surface ..... : | 199 MΩ | P |
| | - between live parts and metal parts ..... : | 199 MΩ | P |
| | - 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..... : | 199 MΩ | P |
| | - Insulation bushings as described in Section 5 .....: | | N/A |
| 5.14 (10.2.2) | Electric strength test | | P |
| | Dummy lamp | | N/A |
| | Luminaires with ignitors after 24 h test | | N/A |
| | Luminaires with manual ignitors | | N/A |
| | Test voltage (V)..... : | See below | P |
| | SELV/PELV: | | N/A |
| | - between current-carrying parts of different polarity : | | N/A |
| | - between current-carrying parts and mounting surface..... : | | N/A |

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|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| | - between current-carrying parts and metal parts of the luminaire..... : | | 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 |
| | Other than SELV/PELV: | | P |
| | - between live parts of different polarity ..... : | | N/A |
| | - between live parts and mounting surface ..... : | 1480V | P |
| | - between live parts and metal parts ..... : | 1480 V | P |
| | - 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..... : | 1480V | P |
| | - Insulation bushings as described in Section 5 ..... : | | N/A |
| 5.14 (10.3) | Touch current (mA).....: | | N/A |
| | Protective conductor current (mA).....: | 0,41 | P |

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

| | | | |
|---|---|---|---|
| **5.15 (13)** | **RESISTANCE TO HEAT, FIRE AND TRACKING** | | P |
| 5.15 (13.2.1) | Ball-pressure test ..... : | See Test Table 5.15 (13.2.1) | N/A |
| 5.15 (13.3.1) | Needle-flame test (10 s) ..... : | See Test Table 5.15 (13.3.1) | N/A |
| 5.15 (13.3.2) | Glow-wire test (650°C) ..... : | See Test Table 5.15 (13.3.2) | P |
| 5.15 (13.4) | Proof tracking test (IEC 60112) ..... : | See Test Table 5.15 (13.4) | N/A |

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **5.7 (11.2)** | **TABLE I: Creepage distances and clearances** | | | | | | | **P** |
| | **Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages** | | | | | | | **P** |
| | **Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*** | | | | | | | **P** |
| | **Insulation type **** | **Measured clearance** | **Required** | | **Measured creepage** | **Required** | | |
| | | | **clearance** | ***Table** | | **creepage** | ***Table** | |
| Distance 1: | B | 4,0 | 1,5 | 11.1B | 4,0 | 2,5 | 11.1A | |
| Working voltage (V) ..... : | | | | | 240 | | | — |
| PTI ..... : | | | | | < 600 ☒ ≥ 600 ☐ | | | — |
| Pulse voltage or $U_P$ if applicable (kV) ..... : | | | | | N/A | | | — |
| Supplementary information: L to N input on LED module PCB | | | | | | | | |
| Distance 2: | B | 3,9 | 1,5 | 11.1B | 3,9 | 2,5 | 11.1A | |
| Working voltage (V) ..... : | | | | | 240 | | | — |
| PTI ..... : | | | | | < 600 ☒ ≥ 600 ☐ | | | — |
| Pulse voltage or $U_P$ if applicable (kV) ..... : | | | | | N/A | | | — |
| Supplementary information: PCB trace to LED module edge / fixing screws | | | | | | | | |
| Distance 3: | R | 5,2 | 3,0 | 11.1B | 5,2 | 5,0 | 11.1A | |
| Working voltage (V) ..... : | | | | | 240 | | | — |
| PTI ..... : | | | | | < 600 ☒ ≥ 600 ☐ | | | — |
| Pulse voltage or $U_P$ if applicable (kV) ..... : | | | | | N/A | | | — |
| Supplementary information: Adjustable knob accessible surface to live part on sensor PCB. | | | | | | | | |
| Distance 4: | R | 2,1 | 1,5 | 11.1B | 3,0 | 2,5 | 11.1A | |
| Working voltage (V) .....: | | | | | 240 | | | — |
| PTI .....: | | | | | < 600 ☒ ≥ 600 ☐ | | | — |
| Pulse voltage or $U_P$ if applicable (kV) .....: | | | | | N/A | | | — |
| Supplementary information: L to N input on sensor PCB | | | | | | | | |

** Insulation type: B – Basic; S – Supplementary; R – Reinforced. See also IEC 60598-1 Annex M.

| IEC 60598-2-5 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |

| **5.7 (11.2)** | **TABLE II: Creepage distances and clearances** | | | | | | | **N/A** |
|---|---|---|---|---|---|---|---|---|
| **Minimum distances (mm) for a.c. higher than 30 kHz sinusoidal voltages** | | | | | | | | |
| **Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2** | | | | | | | | |
| **Distances** | **Insulation type **** | **Measured clearance** | **Required** | | **Measured creepage** | **Required** | | |
| | | | **clearance** | ***Table** | | **creepage** | ***Table** | |
| Distance 1: | | | | | | | | |
| Working voltage (V) .....: | | | | | | | | — |
| Frequency if applicable (kHz) .....: | | | | | | | | — |
| PTI .....: | | | | | < 600 ☐ | | ≥ 600 ☐ | — |
| Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....: | | | | | | | | — |
| Supplementary information: | | | | | | | | |
| Distance 2: | | | | | | | | |
| Working voltage (V) .....: | | | | | | | | — |
| Frequency if applicable (kHz) .....: | | | | | | | | — |
| PTI .....: | | | | | < 600 ☐ | | ≥ 600 ☐ | — |
| Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....: | | | | | | | | — |
| Supplementary information: | | | | | | | | |
| Distance 3: | | | | | | | | |
| Working voltage (V) .....: | | | | | | | | — |
| Frequency if applicable (kHz) .....: | | | | | | | | — |
| PTI .....: | | | | | < 600 ☐ | | ≥ 600 ☐ | — |
| Peak value of the working voltage $\hat{U}_{out}$ if applicable (kV) .....: | | | | | | | | — |
| Supplementary information: | | | | | | | | |

** Insulation type: B – Basic; S – Supplementary; R – Reinforced.

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

| 5.15 (13.2.1) | TABLE: Ball Pressure Test of Thermoplastics | | N/A |
|---|---|---|---|
| **Allowed impression diameter (mm) ..... :** | | 2 | — |
| Object/ Part No./ Material | Manufacturer/ trademark | Test temperature (°C) | Impression diameter (mm) |
| | | | |
| | | | |
| | | | |
| Supplementary information: N/A | | | |

| 5.15 (13.3.1) | TABLE: Needle-flame test | | | | N/A |
|---|---|---|---|---|---|
| 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 |
| | | | | | |
| | | | | | |
| Supplementary information: N/A | | | | | |

| 5.15 (13.3.2) | TABLE: Resistance to heat and fire - Glow wire tests | | | | | | P |
|---|---|---|---|---|---|---|---|
| **Object/ Part No./ Material** | **Manufacturer/ trademark** | **Glow wire test (°C)** | | | | | **Verdict** |
| | | **650** | | **750** | | **850** | |
| | | **te** | **ti** | **te** | **ti** | | |
| Reflector | See Annex1 | 0 | 0 | -- | -- | -- | P |
| | | | | | | | |
| Ignition of the specified layer placed underneath the test specimen (Yes/No)..... : | | | | | | | No |
| Supplementary information: N/A | | | | | | | |

| IEC 60598-2-5 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |

| | | | | | |
|---|---|---|---|---|---|
| **5.15 (13.4)** | **TABLE: Proof tracking test** | | | | **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: N/A | | | | | |

| IEC 60598-2-5 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |

| ANNEX 1 | TABLE: Critical components information | | | | | P |
|---|---|---|---|---|---|---|
| **Object / part No.** | **Code** | **Manufacturer/ trademark** | **Type / model** | **Technical data** | **Standard** | **Mark(s) of conformity[1)]** |
| Reflector page | C | HENGDIAN GROUP TOSPO ENGINEERING PLASTICS CO LTD | C301-XX | PC; V-2 UL(E187910) (no marking） | IEC 60598-1 IEC 60598-2-5 | Test with appliance |
| Alternative | C | Formosa Idemitsu Petrochemical Corp | 2200+(F2) | PC; V-2 UL(E238753) (no marking） | IEC 60598-1 IEC 60598-2-5 | Test with appliance |
| LED 20-200 W | C | Jiangxi MTC Lighting Co., Ltd | MK8XX-GX | 9 V; 100 mA | IEC 60598-1 IEC 60598-2-5 | Test with appliance |
| LED 10 W | C | Jiangxi MTC Lighting Co., Ltd | MTR-288CXX | 18 V; 60 mA | IEC 60598-1 IEC 60598-2-5 | Test with appliance |
| LED board | C | TOTKING TECHNOLOGY CO LTD | QB-AL | V-0, 130℃ MCPCB UL(E250937) (no marking) | IEC 60598-1 IEC 60598-2-5 | Test with appliance |
| Alternative | C | Ningbo Yongbang Electronic Technology Co., Ltd. | NBYB-L | V-0, 130℃ MCPCB UL(E514743) (no marking) | IEC 60598-1 IEC 60598-2-5 | Test with appliance |
| Alternative | C | DONG DA ELECTRONICS | HD-1 | V-0, 130 °C MCPCB UL(E346669) (no marking) | IEC 60598-1 IEC 60598-2-5 | Test with appliance |
| Alternative | C | Shenzhen Xinlongye Electronic Technology Co Ltd | XLY-01 | V-0, 130 °C MCPCB UL(E496651) (no marking) | IEC 60598-1 IEC 60598-2-5 | Test with appliance |
| Alternative | C | Guangde Rongtuo Precision Circuit Technology Co., Ltd | RT-AL | V-0, 130 °C MCPCB UL(E537916) (no marking) | IEC 60598-1 IEC 60598-2-5 | Test with appliance |
| CX1 | B | CHANGXING YOUCHANG ELECTRONIC CO..LTD | MKP/MPX | AC 275/305/310 V 0,1 uF | EN 60384-14 | VDE 40049705 |
| Alternative | B | GUANGDONG SURONG CAPACITORS CO., LTD | MPX/MKP | AC 280/310 V 0,1 uF | EN 60384-14 | VDE 40008924 |

| IEC 60598-2-5 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |

| | | | | | | |
|---|---|---|---|---|---|---|
| Reflector page | C | HENGDIAN GROUP TOSPO ENGINEERING PLASTICS CO LTD | C301-XX | PC; V-2 UL(E187910) (no marking） | IEC 60598-1 IEC 60598-2-5 | Test with appliance |
| Varistor (RV1, RV2) | B | ZHEJIANG XINSHANG TECHNOLOGY CO.,LTD. | XS3225 - 471K | 300 VAC; 471 K | IEC 61051 - 1 IEC 61051 - 2 | TUV RH 50585694 |
| Alternative | B | Shanghai Boarden Industrial Co., Ltd. | CMS3025V4 71PXXX | 300 VAC; 471 K | IEC 61051 - 1 IEC 61051 - 2 | TUV SUD B 002653 0001 Rev. 01 |
| Varistor (RV3, RV4, RV5) The 3 components can be removed | B | ZHEJIANG XINSHANG TECHNOLOGY CO.,LTD. | XS3225 - 681K | 420 VAC; 681 K | IEC 61051 - 1 IEC 61051 - 2 | TUV Rh 50585694 |
| Alternative The 3 components can be removed | B | Shanghai Boarden Industrial Co., Ltd. | CMS3025V6 81PXXX | 420 VAC 681 K | IEC 61051 - 1 IEC 61051 - 2 | TUV SUD B 002653 0001 Rev. 01 |
| BS1 The component can be removed | | Shanghai Boarden Industrial Co., Ltd. | BIS | 1000 V | EN 61643 - 321 | TUV Rh R 50442482 |
| Fuse resistor for 10 - 100 W | B | Shenzhen Xiangyang Huaxing Machinery - electronic Co.,ltd | KNP/RX21 - 1W | 2,2/4,7/10/20/ 30 Ω; 1 W | EN 50525 - 2 - 21 | VDE 40046853 |
| Alternative | C | Jiangxi Xinxuyuan Electronics Co., LTD | RXF0309, RXF - 1WS | 2,2/4,7/10/20/ 30 Ω; 1 W UL(E522284) | IEC 62031 | Test with appliance |
| Alternative | C | Jiangxi Xinxuyuan Electronics Co., LTD | RXF0410, RXF - 2WS | 2,2/4,7/10/20/ 30 Ω; 2 W UL(E522284) | IEC 62031 | Test with appliance |
| Fuse for 150 - 200 W | B | Dongguan Chevron Electronic | SBT | 250 V; 3,15 A | EN 60127 - 1 EN 60127 - 7 | VDE 40049351 |
| Wire (from PCB to sensor) | C | Shenzhen Yueyuanxin ScienceTechonology CO LTD | 1007 | 22AWG, 300 V, 80 °C UL(E492768) | IEC 62031 | Test with appliance |
| Alternative | C | Dongguan YiAo New Energy Technology Co., Ltd | 1007 | 22AWG, 300 V, 80 °C UL(E348933) | IEC 62031 | Test with appliance |

| IEC 60598-2-5 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |

| | | | | | | |
|---|---|---|---|---|---|---|
| Alternative | C | YUEQING BOYUAN ELECTRONIC WIRE & CABLE CO LTD | 1007 | 22AWG, 300 V, 80 °C UL(E203561) | IEC 62031 | Test with appliance |
| Alternative | C | XINYA ELECTRONIC CO LTD | 1007 | 22AWG, 300 V, 80 °C UL(E170689) | IEC 62031 | Test with appliance |
| Alternative | C | DONGGUAN LIUQUAN WIRE CO LTD | 1332 | 22AWG, 300 V, 80 °C UL(E327087) | IEC 62031 | Test with appliance |
| Alternative | C | HAIYAN ADS SPECIAL CABLE CO LTD | 1332 | 22AWG, 300 V, 80 °C UL(E363968) | IEC 62031 | Test with appliance |
| Alternative | C | DONGGUAN ZHIHE ELECTRICAL CABLE TECH CO LTD | 1332 | 22AWG, 300 V, 80 °C UL(E258239) | IEC 62031 | Test with appliance |
| Supply cord | B | Zhongshan Xinjiang Cable Technology Co., Ltd. | H05RN - F | 3X1,0 mm² | EN 50525 - 2 - 21 | VDE 40058997 |
| Alternative | B | Guangdong Huasheng Electrical Appliances Co., Ltd. | H05RN - F | 3X1,0 mm² | EN 50525 - 2 - 21 | VDE 40016788 |
| Alternative | B | Ningbo Xuanhua Electric Co., Ltd. | H05RN - F | 3X1,0 mm² | EN 50525 - 2 - 21 | VDE 40036306 |
| Alternative | B | Ningbo Liansheng Wire & cable co. Ltd. | H05RN - F | 3X1,0 mm² | EN 50525 - 2 - 21 | VDE 40033764 |
| Alternative | B | Dong Guan Recheer Electric Wire& cable co. Ltd. | H05RN - F | 3X1,0 mm² | EN 50525 - 2 - 21 | VDE 40015173 |
| Alternative | B | Guangdong Rifeng Electrica Cable Co., Ltd. | H05RN - F | 3X1,0 mm² | EN 50525 - 2 - 21 | VDE 40015999 |
| Alternative | B | Queshan Yuqiang Cable Co., Ltd. | H05RN - F | 3X1,0 mm² | EN 50525 - 2 - 21 | VDE 40044073 |

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

Supplementary information:

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

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

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

| ANNEX 2 | TABLE: Thermal tests of Section 12 | | P |
|---|---|---|---|
| | Type reference ..... : | LLX-FL-200W | — |
| | Lamp used..... : | Integral LED module | — |
| | Lamp control gear used ..... : | Integral | — |
| | Mounting position of luminaire ..... : | Normal use operation | — |
| | Supply wattage (W) ..... : | 165,3 | — |
| | Supply current (A) ..... : | 0,722 | — |
| | Temperatures in test 1 - 4 below are corrected for ta (°C) ..... : | 25 | — |
| | - abnormal operating mode..... : | -- | — |
| 5.12 (12.4) | - test 1: rated voltage ..... : | -- | — |
| | - test 2: 1,06 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current ..... : | 1,06 x 240V = 254,4V | — |
| | - test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage ..... : | -- | — |
| | Through wiring or looping-in wiring loaded by a current of A during the test ..... : | -- | — |
| 5.12 (12.5) | - test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current or 130/150% of rated input voltage ..... : | -- | — |

**Temperature measurements (°C)**

| Part | Ambient | Cl. 12.4 – normal | | | | Cl. 12.5 – abnormal | |
|---|---|---|---|---|---|---|---|
| | | test 1 | test 2 | test 3 | limit | test 4 | limit |
| Supply cord | 25 | -- | 43,4 | -- | 75 | -- | -- |
| Internal wire above LED module | 25 | -- | 77,2 | -- | 90 | -- | -- |
| Module PCB | 25 | -- | 85,6 | -- | 130 | -- | -- |
| Reflector | 25 | -- | 75,3 | -- | 90 | -- | -- |
| Aluminium enclosure | 25 | -- | 77,5 | -- | Ref. | -- | -- |
| Mounting surface | 25 | -- | 83,4 | -- | 90+5 [1]) | -- | -- |

Supplementary information: The allowance of 5 °C is taken into account.
Measurement PF=0,9

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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.....: | N/A | — |
| | Rated current (A).....: | N/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).....: | N/A | — |
| (14.3.3) | Conductor space (mm).....: | | N/A |
| (14.4) | Mechanical tests | | |
| (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 |

| IEC 60598-2-5 | | | |
|---|---|---|---|
| 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.....: | N/A | — |
| | 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 | | |
| | 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 |

| IEC 60598-2-5 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |
| (15.6.1) | Conductors | | |
| | Terminal size and rating | | N/A |
| 15.6.2 | Mechanical tests | | |
| (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 | | |
| | Tests according 15.6.3.1 + 15.6.3.2 in IEC 60598-1 | | N/A |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **(15.6.3.1) (15.6.3.2)** | **TABLE: Contact resistance test / Heating tests** | | | | | | | | | **N/A** |
| | Voltage drop (mV) after 1 h | | | | | | | | | — |
| terminal | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| voltage drop (mV) | | | | | | | | | | |
| | Voltage drop of two inseparable joints | | | | | | | | | |
| | Voltage drop after 10th alt. 25th cycle | | | | | | | | | |
| | Max. allowed voltage drop (mV) ..... : | | | | | N/A | | | | — |
| terminal | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| voltage drop (mV) | | | | | | | | | | |
| | Voltage drop after 50th alt. 100th cycle | | | | | | | | | |
| | Max. allowed voltage drop (mV) ..... : | | | | | N/A | | | | — |
| terminal | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| voltage drop (mV) | | | | | | | | | | |
| | Continued ageing: voltage drop after 10th alt. 25th cycle | | | | | | | | | |
| | Max. allowed voltage drop (mV) ..... : | | | | | N/A | | | | — |
| terminal | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| voltage drop (mV) | | | | | | | | | | |
| | Continued ageing: voltage drop after 50th alt. 100th cycle | | | | | | | | | |
| | Max. allowed voltage drop (mV) ..... : | | | | | N/A | | | | — |
| terminal | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| voltage drop (mV) | | | | | | | | | | |
| | | | | | | | | | | |
| Supplementary information: | | | | | | | | | | |

| EN IEC 61347 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |

| | | |
|---|---|---|
| **Appendix 1** | **Summary of requirements and test clauses of:**<br>**IEC 62031:2018 LED modules for general lighting – Safety specifications** | **P** |

| | | | |
|---|---|---|---|
| **4** | **GENERAL REQUIREMENTS** | | P |
| 4.2 | Classification ..... | Class I | |
| | 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. | | N/A |

| | | | |
|---|---|---|---|
| 6 | Marking | | P |
| 6.2 | Contents of marking for built-in and for independent LED modules | | N/A |
| 6.3 | Location of marking for built-in LED modules | | N/A |
| 6.4 | Location of marking for independent LED modules | | N/A |
| 6.5 | Marking of integral LED modules | | P |
| 6.6 | Durable and legibility of marking | | P |
| 7 | Terminals | | N/A |
| 8 | Provisions for protective earthing | | N/A |
| 9 | Protection against accidental contact with live parts | | P |
| 10 | Moisture resistance and insulation | Evaluated in final product. | P |
| 11 | Electric strength | Evaluated in final product. | P |
| 12 | Fault conditions | | P |
| 12.1 | Fault conditions according to IEC 61347-1, cl.14 | | P |
| 12.2 | Overpower conditions | | P |
| 13 | Conformity testing during manufacture | | N/A |
| 14 | Construction | | P |
| | No wood, cotton, silk, paper and similar fibrous material used as insulation | | P |

| EN IEC 61347 | | | |
|---|---|---|---|
| Clause | Requirement + Test | Result - Remark | Verdict |

| | | | |
|---|---|---|---|
| 15 | Creepage distances and clearances | Evaluated in final product. | P |
| 16 | Screw, current-carrying parts and connections | Evaluated in final product. | P |
| 17 | Resistance to heat, fire and tracking | Evaluated in final product. | P |
| 18 | Resistance to corrosion | | N/A |
| 20 | Heat management | | N/A |
| 22 | Photobiological safety | Evaluated in final product. | P |

| | | |
|---|---|---|
| 14 | TABLE: tests of fault conditions | P |
| Part | Simulated fault | Hazard |
| For model LLX-FL-200W | | |
| DB1 | Short-circuit: Nothing impairs safety | NO |
| IC (U1-U10) | Short-circuit: Nothing impairs safety | NO |
| IC (U1-U10) | Open circuit: Nothing impairs safety | NO |

Remark

**Photos**

Overview for type model LLX-FL-200W

