



**TEST REPORT**  
**IEC 60598-2-1**  
**Luminaires**  
**Part 2: Particular requirements**  
**Section 1: Fixed general purpose luminaires**

**Report Number.** ..... : AOC251024016S

**Date of issue** ..... : 2025-11-14

**Total number of pages** ..... : 44 pages

**Name of Testing Laboratory preparing the Report** ..... : Shenzhen AOCE Electronic Technology Service Co., Ltd  
Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China

**Applicant's name** ..... : OCEAN FOR ELECTRICAL AND LIGHTING

**Address** ..... : Building 12 - Amer Ibn Malek street - Um AL- Summaq - AMMAN  
JORDAN

**Test specification:**

**Standard** ..... : ☒ EN IEC 60598-2-1:2021  
☒ EN IEC 60598-1:2024+A11:2024  
☒ EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

**Test procedure** ..... : Type testing

**Non-standard test method** ..... : N/A

**Test Report Form No.** ..... : IEC60598\_2\_1G

**Test Report Form(s) Originator** .... : Intertek Semko AB

**Master TRF** ..... : Dated 2020-06-02

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|                                                                                                   |                                                                                                                                    |                                                                                                                                         |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test item description .....</b>                                                                | LED LINEAR LIGHT                                                                                                                   |                                                                                                                                         |
| <b>Trade Mark(s) .....</b>                                                                        | OCEAN                                                                                                                              |                                                                                                                                         |
| <b>Manufacturer .....</b>                                                                         | HAINING ESL ELECTRICAL LIGHTING APPLIANCE CO.,LTD<br>NO.3 Haiyuan Road, Haichang Street, Haining City, Zhejiang<br>Province, China |                                                                                                                                         |
| <b>Model/Type reference.....</b>                                                                  | See Model List                                                                                                                     |                                                                                                                                         |
| <b>Ratings.....</b>                                                                               | 220-240 V~, 50/60 Hz, 32 W, Class I, IP 20, ta: 25°C                                                                               |                                                                                                                                         |
| <b>Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):</b> |                                                                                                                                    |                                                                                                                                         |
| <input checked="" type="checkbox"/>                                                               | <b>Testing Laboratory:</b>                                                                                                         | Shenzhen AOCE Electronic Technology Service Co., Ltd                                                                                    |
| <b>Testing location/ address .....</b>                                                            |                                                                                                                                    | Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu<br>Industrial Park, Fuhai Street, Baoan District, Shenzhen,<br>Guangdong, China |
| <b>Tested by (name, function, signature) .....</b>                                                |                                                                                                                                    | ZhiCong Xian<br>Technical Engineer <i>ZhiCong Xian</i>                                                                                  |
| <b>Approved by (name, function, signature) ..</b>                                                 |                                                                                                                                    | Robin Liu<br>Technical Manager <i>Robin. Liu</i>                                                                                        |
| <input type="checkbox"/>                                                                          | <b>Testing procedure: CTF Stage 1:</b>                                                                                             |                                                                                                                                         |
| <b>Testing location/ address .....</b>                                                            |                                                                                                                                    |                                                                                                                                         |
| <b>Tested by (name, function, signature) .....</b>                                                |                                                                                                                                    |                                                                                                                                         |
| <b>Approved by (name, function, signature) ..</b>                                                 |                                                                                                                                    |                                                                                                                                         |
| <input type="checkbox"/>                                                                          | <b>Testing procedure: CTF Stage 2:</b>                                                                                             |                                                                                                                                         |
| <b>Testing location/ address .....</b>                                                            |                                                                                                                                    |                                                                                                                                         |
| <b>Tested by (name + signature).....</b>                                                          |                                                                                                                                    |                                                                                                                                         |
| <b>Witnessed by (name, function, signature) . :</b>                                               |                                                                                                                                    |                                                                                                                                         |
| <b>Approved by (name, function, signature) .. :</b>                                               |                                                                                                                                    |                                                                                                                                         |
| <input type="checkbox"/>                                                                          | <b>Testing procedure: CTF Stage 3:</b>                                                                                             |                                                                                                                                         |
| <input type="checkbox"/>                                                                          | <b>Testing procedure: CTF Stage 4:</b>                                                                                             |                                                                                                                                         |
| <b>Testing location/ address .....</b>                                                            |                                                                                                                                    |                                                                                                                                         |
| <b>Tested by (name, function, signature) .....</b>                                                |                                                                                                                                    |                                                                                                                                         |
| <b>Witnessed by (name, function, signature) . :</b>                                               |                                                                                                                                    |                                                                                                                                         |
| <b>Approved by (name, function, signature) .. :</b>                                               |                                                                                                                                    |                                                                                                                                         |
| <b>Supervised by (name, function, signature) :</b>                                                |                                                                                                                                    |                                                                                                                                         |

**List of Attachments (including a total number of pages in each attachment):****Attachment No.1:** European Group Differences And National Differences.**Attachment No.2:** Clause 13 of EN IEC 62031**Attachment No.3:** Photo document.**Summary of testing:****Tests performed (name of test and test clause):**

- EN IEC 60598-2-1:2021
- EN IEC 60598-1:2024+A11:2024
- Clause 13 of EN IEC 62031:2020+A11:2021
- IEC TR 62778:2014
- EN 62493:2015+A1:2022

**Testing location:**

Shenzhen AOCE Electronic Technology Service Co., Ltd  
Room 202, 2nd Floor, No.12th Building of Xinhe  
Tongfuyu Industrial Park, Fuhai Street, Baoan District,  
Shenzhen, Guangdong, China

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

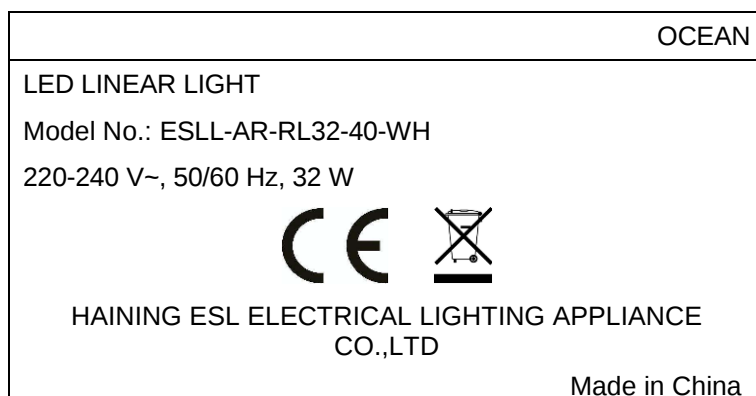
☒ The product fulfils the requirements of EN IEC 60598-2-1:2021 & EN IEC 60598-1:2024+A11:2024

**Statement concerning the uncertainty of the measurement systems used for the tests**

(may be required by the product standard or client)

**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.



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Test item particulars..... :</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                 |
| <b>Classification of installation and use..... :</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Fixed luminaire                                                                                                                 |
| <b>Supply Connection .....</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Supply cords                                                                                                                    |
| <b>Possible test case verdicts:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                 |
| - 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)                                                                                                                        |
| <b>Testing..... :</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                 |
| <b>Date of receipt of test item .....</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2025-10-28                                                                                                                      |
| <b>Date (s) of performance of tests .....</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2025-10-28 to 2025-11-14                                                                                                        |
| <b>General remarks:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                 |
| <p>The tested sample(s) and the sample information are provided by the client.<br/>         "(See Enclosure #)" refers to additional information appended to the report.<br/>         "(See appended table)" refers to a table appended to the report.<br/> <b>Note: EN Group Differences together with National Differences and Special National Conditions, if any, are in the Appendix to the main body of this TRF.</b><br/> <b>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</b><br/>         The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid.<br/>         When determining for test conclusion, measurement uncertainty of tests has been considered.</p> |                                                                                                                                 |
| <b>Manufacturer's Declaration per sub-clause 4.2.5 of IEC60598-1:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                 |
| The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> Not applicable                                              |
| <b>When differences exist; they shall be identified in the General product information section.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                 |
| <b>Name and address of factory (ies) .....</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | HAINING ESL ELECTRICAL LIGHTING APPLIANCE CO.,LTD<br>NO.3 Haiyuan Road, Haichang Street, Haining City, Zhejiang Province, China |

**General product information:**

Class I luminaire, all models have the same mechanical and electrical construction, only power and size are different.

|                     |                    |                      |
|---------------------|--------------------|----------------------|
| ESLL-AR-CL125-200-R | ESLL-AR-CL75-120-R | ESLL-AR-CL56-90-R    |
| ESLL-AR-CL36-60-R   | ESLL-AR-CL25-40-W  | ESLL-AR-RL160-200-PK |
| ESLL-AR-RL96-120-PK | ESLL-AR-RL72-90-PK | ESLL-AR-RL48-60-PK   |
| ESLL-AR-CL56-90-W   | ESLL-AR-CL36-60-W  | ESLL-AR-RL72-90-WH   |
| ESLL-AR-RL48-60-WH  | --                 | --                   |

| IEC 60598-2-1    |                                                                    |                                                                                   |         |
|------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------|
| Clause           | Requirement + Test                                                 | Result - Remark                                                                   | Verdict |
| <b>1.2 (0)</b>   | <b>GENERAL TEST REQUIREMENTS</b>                                   |                                                                                   | P       |
| 1.2 (0.3)        | More sections applicable .....                                     | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Section/s: | —       |
| 1.2 (0.5)        | Components                                                         | (see Annex 1)                                                                     | —       |
| <b>1.2 (0.7)</b> | <b>Information for luminaire design in light sources standards</b> |                                                                                   | —       |
| 1.2 (0.7.2)      | Light source safety standard .....                                 | IEC 62031                                                                         | —       |
|                  | Luminaire design in the light source safety standard               |                                                                                   | P       |

|                |                                                                            |                                                                     |   |
|----------------|----------------------------------------------------------------------------|---------------------------------------------------------------------|---|
| <b>1.4 (2)</b> | <b>CLASSIFICATION OF LUMINAIRES</b>                                        |                                                                     | P |
| 1.4 (2.2)      | Type of protection .....                                                   | Class I                                                             | P |
| 1.4 (2.3)      | Degree of protection .....                                                 | IP 20                                                               | — |
| 1.4 (2.4)      | Luminaire suitable for direct mounting on normally flammable surfaces..... | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | — |
| 1.4 (2.5)      | Luminaire for normal use .....                                             | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | — |
|                | Luminaire for rough service .....                                          | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | — |

|                |                                       |  |     |
|----------------|---------------------------------------|--|-----|
| <b>1.5 (3)</b> | <b>MARKING</b>                        |  | P   |
| 1.5 (3.2)      | Mandatory markings                    |  | P   |
|                | Position of the marking               |  | P   |
|                | Format of symbols/text                |  | P   |
| 1.5 (3.3)      | Additional information                |  | P   |
|                | Language of instructions              |  | P   |
| 1.5 (3.3.1)    | Combination luminaires                |  | N/A |
| 1.5 (3.3.2)    | Nominal frequency in Hz               |  | P   |
| 1.5 (3.3.3)    | Operating temperature                 |  | N/A |
| 1.5 (3.3.5)    | Wiring diagram                        |  | N/A |
| 1.5 (3.3.6)    | Special conditions                    |  | N/A |
| 1.5 (3.3.7)    | Metal halide lamp luminaire – warning |  | N/A |
| 1.5 (3.3.8)    | Limitation for semi-luminaires        |  | N/A |
| 1.5 (3.3.9)    | Power factor and supply current       |  | P   |
| 1.5 (3.3.10)   | Suitability for use indoors           |  | N/A |
| 1.5 (3.3.11)   | Luminaires with remote control        |  | N/A |

| IEC 60598-2-1 |                                                                                                          |                 |         |
|---------------|----------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause        | Requirement + Test                                                                                       | Result - Remark | Verdict |
| 1.5 (3.3.12)  | Clip-mounted luminaire – warning                                                                         |                 | N/A     |
| 1.5 (3.3.13)  | Specifications of protective shields                                                                     |                 | N/A     |
| 1.5 (3.3.14)  | Symbol for nature of supply                                                                              |                 | P       |
| 1.5 (3.3.15)  | Rated current of socket outlet                                                                           |                 | N/A     |
| 1.5 (3.3.16)  | Rough service luminaire                                                                                  |                 | N/A     |
| 1.5 (3.3.17)  | Mounting instruction for type Y, type Z and some type X attachments                                      |                 | P       |
| 1.5 (3.3.18)  | Non-ordinary luminaires with PVC cable                                                                   |                 | N/A     |
| 1.5 (3.3.19)  | Protective conductor current in instruction if applicable                                                |                 | N/A     |
| 1.5 (3.3.20)  | Provided with information if not intended to be mounted within arm's reach                               |                 | N/A     |
| 1.5 (3.3.21)  | Non replaceable and non-user replaceable light sources information provided                              |                 | P       |
| 1.5 (3.3.22)  | Controllable luminaires, classification of insulation provided                                           |                 | N/A     |
| 1.5 (3.3.23)  | Luminaire without controlgear provided with necessary information for selection of appropriate component |                 | N/A     |
| 1.5 (3.3.24)  | If not supplied with terminal block, information on the packaging                                        |                 | P       |
| 1.5 (3.4)     | Test with water                                                                                          |                 | P       |
|               | Test with hexane                                                                                         |                 | P       |
|               | Legible after test                                                                                       |                 | P       |
|               | Label attached                                                                                           |                 | P       |

|                  |                                           |  |     |
|------------------|-------------------------------------------|--|-----|
| <b>1.6 (4)</b>   | <b>CONSTRUCTION</b>                       |  | P   |
| 1.6 (4.2)        | Components replaceable without difficulty |  | N/A |
| 1.6 (4.3)        | Wireways smooth and free from sharp edges |  | P   |
| <b>1.6 (4.4)</b> | <b>Lampholders</b>                        |  | N/A |
| 1.6 (4.4.1)      | Integral lampholder                       |  | N/A |
| 1.6 (4.4.2)      | Wiring connection                         |  | N/A |
| 1.6 (4.4.3)      | Lampholder for end-to-end mounting        |  | N/A |
| 1.6 (4.4.4)      | Positioning                               |  | N/A |
|                  | - pressure test (N) .....                 |  | —   |

| IEC 60598-2-1    |                                                                                                                          |                 |         |
|------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause           | Requirement + Test                                                                                                       | Result - Remark | Verdict |
|                  | 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 have not moved from its position and show no permanent deformation                             |                 | N/A     |
| 1.6 (4.4.5)      | Peak pulse voltage                                                                                                       |                 | N/A     |
| 1.6 (4.4.6)      | Centre contact                                                                                                           |                 | N/A     |
| 1.6 (4.4.7)      | Parts in rough service luminaires resistant to tracking                                                                  |                 | N/A     |
| 1.6 (4.4.8)      | Lamp connectors                                                                                                          |                 | N/A     |
| 1.6 (4.4.9)      | Caps and bases correctly used                                                                                            |                 | N/A     |
| 1.6 (4.4.10)     | Light source for lampholder or connection according IEC 60061 not connected another way                                  |                 | N/A     |
| <b>1.6 (4.5)</b> | <b>Starter holders</b>                                                                                                   |                 | N/A     |
|                  | Starter holder in luminaires other than class II                                                                         |                 | N/A     |
|                  | Starter holder class II construction                                                                                     |                 | N/A     |
| <b>1.6 (4.6)</b> | <b>Terminal blocks</b>                                                                                                   |                 | N/A     |
|                  | Tails                                                                                                                    |                 | N/A     |
|                  | Unsecured blocks                                                                                                         |                 | N/A     |
| <b>1.6 (4.7)</b> | <b>Terminals and supply connections</b>                                                                                  |                 | P       |
| 1.6 (4.7.1)      | Contact to metal parts                                                                                                   |                 | N/A     |
| 1.6 (4.7.2)      | Test 8 mm live conductor                                                                                                 |                 | N/A     |
|                  | Test 8 mm earth conductor                                                                                                |                 | N/A     |
| 1.6 (4.7.3)      | Terminals for supply conductors                                                                                          |                 | P       |
| 1.6 (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     |

| IEC 60598-2-1     |                                                                                    |                 |         |
|-------------------|------------------------------------------------------------------------------------|-----------------|---------|
| Clause            | Requirement + Test                                                                 | Result - Remark | Verdict |
|                   | - heat test according to 15.6.3.2.3 and 15.6.3.2.4                                 |                 | N/A     |
| 1.6 (4.7.4)       | Terminals other than supply connection                                             |                 | N/A     |
| 1.6 (4.7.5)       | Heat-resistant wiring/sleeves                                                      |                 | N/A     |
| 1.6 (4.7.6)       | Multi-pole plug                                                                    |                 | N/A     |
|                   | - test at 30 N                                                                     |                 | N/A     |
| <b>1.6 (4.8)</b>  | <b>Switches</b>                                                                    |                 | N/A     |
|                   | - adequate rating                                                                  |                 | N/A     |
|                   | - adequate fixing                                                                  |                 | N/A     |
|                   | - polarized supply                                                                 |                 | N/A     |
|                   | - compliance with IEC 61058-1 for electronic switches                              |                 | N/A     |
| <b>1.6 (4.9)</b>  | <b>Insulating lining and sleeves</b>                                               |                 | N/A     |
| 1.6 (4.9.1)       | Retainment                                                                         |                 | N/A     |
|                   | Method of fixing .....                                                             |                 | N/A     |
| 1.6 (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     |
| <b>1.6 (4.10)</b> | <b>Double or reinforced insulation</b>                                             |                 | N/A     |
| 1.6 (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     |
|                   | Interference suppression capacitors according to IEC 60384-14                      |                 | N/A     |
| 1.6 (4.10.2)      | Assembly gaps:                                                                     |                 | N/A     |
|                   | - not coincidental                                                                 |                 | N/A     |
|                   | - no straight access with test probe                                               |                 | N/A     |
| 1.6 (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     |

| IEC 60598-2-1     |                                                                                                                            |                              |          |
|-------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------------|----------|
| Clause            | Requirement + Test                                                                                                         | Result - Remark              | Verdict  |
|                   | - lining in lampholder                                                                                                     |                              | N/A      |
| 1.6 (4.10.4)      | Protective impedance device                                                                                                |                              | N/A      |
|                   | Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor |                              | N/A      |
|                   | Y1 or Y2 capacitors comply with IEC 60384-14                                                                               |                              | N/A      |
|                   | Resistors comply with test (a) in 14.1 of IEC 60065                                                                        |                              | N/A      |
| <b>1.6 (4.11)</b> | <b>Electrical connections and current-carrying parts</b>                                                                   |                              | <b>P</b> |
| 1.6 (4.11.1)      | Contact pressure                                                                                                           |                              | P        |
| 1.6 (4.11.2)      | Screws:                                                                                                                    |                              | N/A      |
|                   | - self-tapping screws                                                                                                      |                              | N/A      |
|                   | - thread-cutting screws                                                                                                    |                              | N/A      |
| 1.6 (4.11.3)      | Screw locking:                                                                                                             |                              | N/A      |
|                   | - spring washer                                                                                                            |                              | N/A      |
|                   | - rivets                                                                                                                   |                              | N/A      |
| 1.6 (4.11.4)      | Material of current-carrying parts                                                                                         |                              | P        |
| 1.6 (4.11.5)      | No contact to wood or mounting surface                                                                                     |                              | P        |
| 1.6 (4.11.6)      | Electro-mechanical contact systems                                                                                         |                              | N/A      |
| <b>1.6 (4.12)</b> | <b>Screws and connections (mechanical) and glands</b>                                                                      |                              | <b>P</b> |
| 1.6 (4.12.1)      | Screws not made of soft metal                                                                                              |                              | P        |
|                   | Screws of insulating material                                                                                              |                              | N/A      |
|                   | Torque test: torque (Nm); part .....                                                                                       | Fixed enclosure screw: 0.6Nm | P        |
|                   | Torque test: torque (Nm); part .....                                                                                       | Fixed earthed screw: 0.5Nm   | P        |
|                   | Torque test: torque (Nm); part .....                                                                                       |                              | N/A      |
| 1.6 (4.12.2)      | Screws with diameter < 3 mm screwed into metal                                                                             |                              | N/A      |
| 1.6 (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      |
| 1.6 (4.12.5)      | Screwed glands; force (Nm) .....                                                                                           |                              | N/A      |
| <b>1.6 (4.13)</b> | <b>Mechanical strength</b>                                                                                                 |                              | <b>P</b> |
| 1.6 (4.13.1)      | Impact tests:                                                                                                              |                              | P        |

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|-------------------|---------------------------------------------------------------------|-----------------|----------|
| Clause            | Requirement + Test                                                  | Result - Remark | Verdict  |
|                   | - fragile parts; energy (Nm).....:                                  |                 | N/A      |
|                   | - other parts; energy (Nm) .....                                    | 0.35            | P        |
|                   | 1) live parts                                                       |                 | P        |
|                   | 2) linings                                                          |                 | N/A      |
|                   | 3) protection                                                       |                 | P        |
|                   | 4) covers                                                           |                 | P        |
| 1.6 (4.13.2)      | Metal parts have adequate mechanical strength                       |                 | P        |
| 1.6 (4.13.3)      | Straight test finger                                                |                 | P        |
| 1.6 (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      |
| 1.6 (4.13.6)      | Tumbling barrel                                                     |                 | N/A      |
| <b>1.6 (4.14)</b> | <b>Suspensions, fixings and means of adjusting</b>                  |                 | <b>P</b> |
| 1.6 (4.14.1)      | Mechanical load:                                                    |                 | P        |
|                   | A) four times the weight                                            |                 | P        |
|                   | 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      |
| 1.6 (4.14.2)      | Load to flexible cables                                             |                 | N/A      |
|                   | Mass (kg) .....                                                     |                 | —        |
|                   | Stress in conductors (N/mm <sup>2</sup> ) .....                     |                 | N/A      |
|                   | Mass (kg) of semi-luminaire .....                                   |                 | N/A      |
|                   | Bending moment (Nm) of semi-luminaire .....                         |                 | N/A      |
| 1.6 (4.14.3)      | Adjusting devices:                                                  |                 | N/A      |

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|-------------------|------------------------------------------------------------------------------------------------------------|------------------------------|----------|
| Clause            | Requirement + Test                                                                                         | Result - Remark              | Verdict  |
|                   | - flexing test; number of cycles .....                                                                     |                              | N/A      |
|                   | - strands broken .....                                                                                     |                              | N/A      |
|                   | - electric strength test afterwards                                                                        |                              | N/A      |
| 1.6 (4.14.4)      | Telescopic tubes: cords not fixed to tube; no strain on conductors                                         |                              | N/A      |
| 1.6 (4.14.5)      | Guide pulleys                                                                                              |                              | N/A      |
| 1.6 (4.14.6)      | Strain on socket-outlets                                                                                   |                              | N/A      |
| <b>1.6 (4.15)</b> | <b>Flammable materials</b>                                                                                 |                              | <b>P</b> |
|                   | - glow-wire test 650°C.....                                                                                | See Test Table 1.15 (13.3.2) | P        |
|                   | - spacing $\geq 30$ 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      |
| 1.6 (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      |
| <b>1.6 (4.16)</b> | <b>Luminaires for mounting on normally flammable surfaces</b>                                              |                              | <b>P</b> |
|                   | 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      |
| 1.6 (4.16.1)      | Lamp control gear spacing:                                                                                 |                              | N/A      |
|                   | - spacing 35 mm                                                                                            |                              | N/A      |
|                   | - spacing 10 mm                                                                                            |                              | N/A      |
| 1.6 (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      |
| 1.6 (4.16.3)      | Design to satisfy the test of 12.6                                                                         | (see clause 12.6)            | N/A      |

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|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|---------|
| Clause            | Requirement + Test                                                                                                                                 | Result - Remark              | Verdict |
| <b>1.6 (4.17)</b> | <b>Drain holes</b>                                                                                                                                 |                              | N/A     |
|                   | Clearance at least 5 mm                                                                                                                            |                              | N/A     |
| <b>1.6 (4.18)</b> | <b>Resistance to corrosion</b>                                                                                                                     |                              | N/A     |
| 1.6 (4.18.1)      | - rust-resistance                                                                                                                                  |                              | N/A     |
| 1.6 (4.18.2)      | - season cracking in copper                                                                                                                        |                              | N/A     |
| 1.6 (4.18.3)      | - corrosion of aluminium                                                                                                                           |                              | N/A     |
| 1.6 (4.19)        | Ignitors compatible with ballast                                                                                                                   |                              | N/A     |
| 1.6 (4.20)        | Rough service vibration                                                                                                                            |                              | N/A     |
| <b>1.6 (4.21)</b> | <b>Protective shield</b>                                                                                                                           |                              | N/A     |
| 1.6 (4.21.1)      | Shield fitted if tungsten halogen lamps or metal halide lamps                                                                                      |                              | N/A     |
|                   | Shield of glass if tungsten halogen lamps                                                                                                          |                              | N/A     |
| 1.6 (4.21.2)      | Particles from a shattering lamp not impair safety                                                                                                 |                              | N/A     |
| 1.6 (4.21.3)      | No direct path                                                                                                                                     |                              | N/A     |
| 1.6 (4.21.4)      | Impact test on shield                                                                                                                              |                              | N/A     |
|                   | Glow-wire test on lamp compartment.....:                                                                                                           | See Test Table 1.15 (13.3.2) | N/A     |
| 1.6 (4.22)        | Attachments to lamps not cause overheating or damage                                                                                               |                              | N/A     |
| 1.6 (4.23)        | Semi-luminaires comply Class II                                                                                                                    |                              | N/A     |
| <b>1.6 (4.24)</b> | <b>Photobiological hazards</b>                                                                                                                     |                              | P       |
| 1.6 (4.24.1)      | No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)                                                               |                              | N/A     |
| 1.6 (4.24.2)      | Retinal blue light hazard                                                                                                                          |                              | P       |
|                   | Class of risk group assessed according to IEC/TR 62778 .....                                                                                       |                              | —       |
|                   | 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     |
|                   | 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     |

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|-------------------|----------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause            | Requirement + Test                                                                                                   | Result - Remark | Verdict |
| <b>1.6 (4.25)</b> | <b>Mechanical hazard</b>                                                                                             |                 | P       |
|                   | No sharp point or edges                                                                                              |                 | P       |
| <b>1.6 (4.26)</b> | <b>Short-circuit protection</b>                                                                                      |                 | N/A     |
| 1.6 (4.26.1)      | Adequate means of uninsulated accessible SELV parts                                                                  |                 | N/A     |
| 1.6 (4.26.2)      | Short-circuit test with test chain according 4.26.3                                                                  |                 | N/A     |
|                   | Test chain not melt through                                                                                          |                 | N/A     |
|                   | Test sample not exceed values of Table 12.1 and 12.2                                                                 |                 | N/A     |
| <b>1.6 (4.27)</b> | <b>Terminal blocks with integrated screwless earthing contacts</b>                                                   |                 | N/A     |
|                   | Test according Annex V                                                                                               |                 | N/A     |
|                   | Pull test of terminal fixing (20 N)                                                                                  |                 | N/A     |
|                   | After test, resistance < 0,05 $\Omega$                                                                               |                 | N/A     |
|                   | Pull test of mechanical connection (50 N)                                                                            |                 | N/A     |
|                   | After test, resistance < 0,05 $\Omega$                                                                               |                 | N/A     |
|                   | Voltage drop test, resistance < 0,05 $\Omega$                                                                        |                 | N/A     |
| <b>1.6 (4.28)</b> | <b>Fixing of thermal sensing control</b>                                                                             |                 | 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     |
| <b>1.6 (4.29)</b> | <b>Luminaires with non-replaceable light source</b>                                                                  |                 | N/A     |
|                   | Not possible to replace light source                                                                                 |                 | N/A     |
|                   | Live part not accessible after parts have been opened by hand or tools                                               |                 | N/A     |
| <b>1.6 (4.30)</b> | <b>Luminaires with non-user replaceable light source</b>                                                             |                 | P       |
|                   | If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol: |                 | N/A     |
|                   | Minimum two fixing means                                                                                             |                 | P       |

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|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause            | Requirement + Test                                                                                                                                                                  | Result - Remark | Verdict |
| <b>1.6 (4.31)</b> | <b>Insulation between circuits</b>                                                                                                                                                  |                 | 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     |
| 1.6 (4.31.1)      | SELV circuits                                                                                                                                                                       |                 | P       |
|                   | Used SELV source                                                                                                                                                                    |                 | P       |
|                   | Voltage $\leq$ ELV                                                                                                                                                                  |                 | P       |
|                   | Insulating of SELV circuits from LV supply                                                                                                                                          |                 | P       |
|                   | Insulating of SELV circuits from other non SELV circuits                                                                                                                            |                 | N/A     |
|                   | Insulating of SELV circuits from FELV                                                                                                                                               |                 | N/A     |
|                   | Insulating of SELV circuits from other SELV circuits                                                                                                                                |                 | N/A     |
|                   | SELV circuits insulated from accessible parts according Table X.1                                                                                                                   |                 | P       |
|                   | Plugs not able to enter 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     |
| 1.6 (4.31.2)      | FELV circuits                                                                                                                                                                       |                 | N/A     |
|                   | Used FELV source                                                                                                                                                                    |                 | N/A     |
|                   | Voltage $\leq$ 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 enter socket-outlets of other voltage systems                                                                                                                     |                 | N/A     |
|                   | Socket outlets does not admit plugs of other voltage systems                                                                                                                        |                 | N/A     |
|                   | Socket-outlets does not have protective conductor contact                                                                                                                           |                 | N/A     |
| 1.6 (4.31.3)      | Other circuits                                                                                                                                                                      |                 | N/A     |

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|-------------------|------------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause            | Requirement + Test                                                                                         | Result - Remark | Verdict |
|                   | Other circuits insulated from accessible parts according Table X.1                                         |                 | N/A     |
|                   | 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     |
| <b>1.6 (4.32)</b> | <b>Overvoltage protective devices</b>                                                                      |                 | 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     |

|                 |                                                                                                    |                                                                                       |     |
|-----------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----|
| <b>1.7 (11)</b> | <b>CREEPAGE DISTANCES AND CLEARANCES</b>                                                           |                                                                                       | P   |
| 1.7 (11.2.1)    | Impulse withstand category (Normal category II)                                                    | Category II <input checked="" type="checkbox"/> Category III <input type="checkbox"/> | —   |
|                 | Category III according Annex U                                                                     |                                                                                       | N/A |
|                 | Protected against pollution, reduced creepage and clearance according Annex P of IEC 61347-1       |                                                                                       | N/A |
| 1.7 (11.2.2)    | Creepage distances for frequency up to 30 kHz                                                      | See Test Table 1.7 (11.2) I                                                           | P   |
|                 | 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 | See Test Table 1.7 (11.2) II                                                          | N/A |
|                 | - Requirements according IEC 60664-4 for controlgear not covered by IEC 61347                      | See Test Table 1.7 (11.2) II                                                          | N/A |
| 1.7 (11.2.3)    | Clearances for frequency up to 30 kHz                                                              | See Test Table 1.7 (11.2) I                                                           | P   |
|                 | Clearances distances for frequency over 30 kHz:                                                    |                                                                                       | N/A |
|                 | - Controlgear marked with $U_P$                                                                    | See Test Table 1.7 (11.2) II                                                          | N/A |
|                 | - Requirements according IEC 60664-4 for controlgear not covered by IEC 61347                      | See Test Table 1.7 (11.2) II                                                          | N/A |

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|---------------------|--------------------------------------------------------------------------------------|-----------------|---------|
| Clause              | Requirement + Test                                                                   | Result - Remark | Verdict |
| <b>1.8 (7)</b>      | <b>PROVISION FOR EARTHING</b>                                                        |                 | P       |
| 1.8 (7.2.1 + 7.2.3) | Accessible metal parts                                                               |                 | P       |
|                     | Metal parts in contact with supporting surface                                       |                 | P       |
|                     | Resistance < 0,5 $\Omega$ .....: 0.024 $\Omega$                                      |                 | P       |
|                     | Self-tapping screws used                                                             |                 | N/A     |
|                     | Thread-forming screws                                                                |                 | N/A     |
|                     | Thread-forming screw used in a groove                                                |                 | N/A     |
|                     | Earth makes contact first                                                            |                 | P       |
|                     | Terminal blocks with integrated screwless earthing contacts tested according Annex V |                 | N/A     |
|                     | Protective earthing of the luminaire not via built-in control gear                   |                 | P       |
| 1.8 (7.2.2 + 7.2.3) | Earth continuity in joints, etc.                                                     |                 | P       |
| 1.8 (7.2.4)         | Locking of clamping means                                                            |                 | P       |
|                     | Compliance with 4.7.3                                                                |                 | P       |
|                     | Terminal blocks with integrated screwless earthing contacts tested according Annex V |                 | N/A     |
| 1.8 (7.2.5)         | Earth terminal integral part of connector socket                                     |                 | N/A     |
| 1.8 (7.2.6)         | Earth terminal adjacent to mains terminals                                           |                 | P       |
| 1.8 (7.2.7)         | Electrolytic corrosion of the earth terminal                                         |                 | P       |
| 1.8 (7.2.8)         | Material of earth terminal                                                           |                 | P       |
|                     | Contact surface bare metal                                                           |                 | P       |
| 1.8 (7.2.10)        | Class II luminaire for looping-in                                                    |                 | N/A     |
|                     | Double or reinforced insulation to functional earth                                  |                 | N/A     |
| 1.8 (7.2.11)        | Earthing core coloured green-yellow                                                  |                 | P       |
|                     | Length of earth conductor                                                            |                 | P       |

|                 |                                     |               |     |
|-----------------|-------------------------------------|---------------|-----|
| <b>1.9 (14)</b> | <b>SCREW TERMINALS</b>              |               | N/A |
|                 | Separately approved; component list | (see Annex 1) | N/A |
|                 | Part of the luminaire               | (see Annex 3) | N/A |

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|-----------------|-------------------------------------------------------|-----------------|---------|
| Clause          | Requirement + Test                                    | Result - Remark | Verdict |
| <b>1.9 (15)</b> | <b>SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS</b> |                 | N/A     |
|                 | Separately approved; component list .....             | (see Annex 1)   | N/A     |
|                 | Part of the luminaire.....                            | (see Annex 4)   | N/A     |

|                   |                                                                                                                                                   |  |          |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|--|----------|
| <b>1.10 (5)</b>   | <b>EXTERNAL AND INTERNAL WIRING</b>                                                                                                               |  | P        |
| <b>1.10 (5.2)</b> | <b>Supply connection and external wiring</b>                                                                                                      |  | <b>P</b> |
| 1.10 (5.2.1)      | Means of connection.....                                                                                                                          |  | P        |
|                   | Outdoor luminaire has not PVC insulated external wiring if not class III or SELV $\leq 25$ V a.c./60 V d.c. or protected from outdoor environment |  | N/A      |
| 1.10 (5.2.2)      | Type of cable .....                                                                                                                               |  | P        |
|                   | Nominal cross-sectional area (mm <sup>2</sup> ).....                                                                                              |  | P        |
|                   | Cables equal to IEC 60227 or IEC 60245                                                                                                            |  | P        |
| 1.10 (5.2.3)      | Type of attachment, X, Y or Z                                                                                                                     |  | P        |
| 1.10 (5.2.5)      | Type Z not connected to screws                                                                                                                    |  | N/A      |
| 1.10 (5.2.6)      | Cable entries:                                                                                                                                    |  | P        |
|                   | - suitable for introduction                                                                                                                       |  | P        |
|                   | - adequate degree of protection                                                                                                                   |  | P        |
| 1.10 (5.2.7)      | Cable entries through rigid material have rounded edges                                                                                           |  | N/A      |
| 1.10 (5.2.8)      | Insulating bushings:                                                                                                                              |  | N/A      |
|                   | - suitably fixed                                                                                                                                  |  | N/A      |
|                   | - material in bushings                                                                                                                            |  | N/A      |
|                   | - material not likely to deteriorate                                                                                                              |  | N/A      |
|                   | - tubes or guards made of insulating material                                                                                                     |  | N/A      |
| 1.10 (5.2.9)      | Locking of screwed bushings                                                                                                                       |  | N/A      |
| 1.10 (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        |

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|--------------------|----------------------------------------------------------|-----------------|---------|
| Clause             | Requirement + Test                                       | Result - Remark | Verdict |
| 1.10<br>(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     |
|                    | 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     |
| 1.10<br>(5.2.10.2) | Adequate cord anchorage for type Y and type Z attachment |                 | P       |
| 1.10<br>(5.2.10.3) | Tests:                                                   |                 | P       |
|                    | - impossible to push cable; unsafe                       |                 | P       |
|                    | - pull test: 25 times; pull (N) .....:                   |                 | P       |
|                    | - torque test: torque (Nm) .....:                        |                 | P       |
|                    | - displacement $\leq 2$ mm                               |                 | P       |
|                    | - no movement of conductors                              |                 | P       |
|                    | - no damage of cable or cord                             |                 | P       |
|                    | - function independent of electrical connection          |                 | N/A     |
| 1.10<br>(5.2.11)   | External wiring passing into luminaire                   |                 | P       |
| 1.10<br>(5.2.12)   | Looping-in terminals                                     |                 | N/A     |
| 1.10<br>(5.2.13)   | Wire ends not tinned                                     |                 | N/A     |
|                    | Wire ends tinned: no cold flow                           |                 | P       |
| 1.10<br>(5.2.14)   | Mains plug same protection                               |                 | N/A     |
|                    | Class III luminaire plug                                 |                 | N/A     |
|                    | No unsafe compatibility                                  |                 | N/A     |
| 1.10<br>(5.2.16)   | Appliance inlets (IEC 60320)                             |                 | N/A     |

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|-------------------|--------------------------------------------------------------------------------|-----------------|----------|
| Clause            | Requirement + Test                                                             | Result - Remark | Verdict  |
|                   | Installation couplers (IEC 61535)                                              |                 | N/A      |
|                   | Other appliance inlet or connector according relevant IEC standard             |                 | N/A      |
| 1.10 (5.2.17)     | No standardized interconnecting cables properly assembled                      |                 | N/A      |
| 1.10 (5.2.18)     | Used plug in accordance with                                                   |                 | N/A      |
|                   | - IEC 60083                                                                    |                 | N/A      |
|                   | - other standard                                                               |                 | N/A      |
| <b>1.10 (5.3)</b> | <b>Internal wiring</b>                                                         |                 | <b>P</b> |
| 1.10 (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 earth only                                                    |                 | P        |
| 1.10 (5.3.1.1)    | Internal wiring connected directly to fixed wiring                             |                 | P        |
|                   | Cross-sectional area (mm <sup>2</sup> ) .....                                  |                 | P        |
|                   | Insulation thickness (mm) .....                                                |                 | P        |
|                   | Extra insulation added where necessary                                         |                 | N/A      |
| 1.10 (5.3.1.2)    | Internal wiring connected to fixed wiring via internal current-limiting device |                 | P        |
|                   | Cross-sectional area (mm <sup>2</sup> ) .....                                  |                 | P        |
| 1.10 (5.3.1.3)    | Double or reinforced insulation for class II                                   |                 | N/A      |
| 1.10 (5.3.1.4)    | Conductors without insulation                                                  |                 | N/A      |
| 1.10 (5.3.1.5)    | SELV current-carrying parts                                                    |                 | P        |
| 1.10 (5.3.1.6)    | Insulation thickness other than PVC or rubber                                  |                 | N/A      |
| 1.10 (5.3.2)      | Sharp edges etc.                                                               |                 | P        |
|                   | No moving parts of switches etc.                                               |                 | N/A      |

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|-------------------|----------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause            | Requirement + Test                                                                                       | Result - Remark | Verdict |
|                   | Joints, raising/lowering devices                                                                         |                 | N/A     |
|                   | Telescopic tubes etc.                                                                                    |                 | N/A     |
|                   | No twisting over 360°                                                                                    |                 | P       |
| 1.10 (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     |
| 1.10 (5.3.4)      | Joints and junctions effectively insulated                                                               |                 | N/A     |
| 1.10 (5.3.5)      | Strain on internal wiring                                                                                |                 | N/A     |
| 1.10 (5.3.6)      | Wire carriers                                                                                            |                 | N/A     |
| 1.10 (5.3.7)      | Wire ends not tinned                                                                                     |                 | N/A     |
|                   | Wire ends tinned: no cold flow                                                                           |                 | P       |
| <b>1.10 (5.4)</b> | <b>Test to determine suitability of conductors having a reduced cross-sectional area</b>                 |                 | N/A     |
|                   | Under test the temperature of the luminaire wiring insulation not exceed the limits stated in Table 12.2 | (see Annex 2)   | N/A     |
|                   | No damage to luminaire wiring after test                                                                 |                 | N/A     |

|                 |                                                                                                                        |  |     |
|-----------------|------------------------------------------------------------------------------------------------------------------------|--|-----|
| <b>1.11 (8)</b> | <b>PROTECTION AGAINST ELECTRIC SHOCK</b>                                                                               |  | P   |
| 1.11 (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 |
|                 | Basic insulation only accessible under lamp or starter replacement                                                     |  | N/A |
|                 | Protection in any position                                                                                             |  | P   |
|                 | Double-ended tungsten filament lamp                                                                                    |  | N/A |

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|----------------|---------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause         | Requirement + Test                                                                                | Result - Remark | Verdict |
|                | Insulation lacquer not reliable                                                                   |                 | N/A     |
|                | Double-ended high-pressure discharge lamp                                                         |                 | N/A     |
|                | Relevant warning according to 3.2.18 fitted to the luminaire                                      |                 | N/A     |
| 1.11 (8.2.2)   | Portable luminaire adjusted in most unfavourable position                                         |                 | N/A     |
| 1.11 (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     |
| 1.11 (8.2.3.b) | BC lampholder of metal in class I luminaires shall be earthed                                     |                 | N/A     |
| 1.11 (8.2.3.c) | SELV circuits with exposed current carrying parts:                                                |                 | N/A     |
|                | Ordinary luminaire:                                                                               |                 | N/A     |
|                | - voltage under load (V) .....                                                                    |                 | N/A     |
|                | - no-load 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     |
|                | - nominal 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     |
| 1.11 (8.2.4)   | Portable luminaire has protection independent of supporting surface                               |                 | N/A     |
| 1.11 (8.2.5)   | Compliance with the standard test finger or relevant probe                                        |                 | P       |
| 1.11 (8.2.6)   | Covers reliably secured                                                                           |                 | P       |
| 1.11 (8.2.7)   | Luminaire other than below with capacitor > 0,5 $\mu$ F not exceed 50 V 1 min after disconnection |                 | P       |
|                | Portable luminaire with capacitor > 0,1 $\mu$ F (0.25) not exceed 34 V 1 s after disconnection    |                 | N/A     |

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|---------------|---------------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause        | Requirement + Test                                                                                                        | Result - Remark | Verdict |
|               | Other luminaires with capacitor > 0,1 $\mu$ F (0.25) with plug and track adaptors not exceed 60 V 5 s after disconnection |                 | N/A     |

|                    |                                                                                                     |                                |          |
|--------------------|-----------------------------------------------------------------------------------------------------|--------------------------------|----------|
| <b>1.12 (12)</b>   | <b>ENDURANCE TEST AND THERMAL TEST</b>                                                              |                                | <b>P</b> |
| 1.12 (-)           | If IP > IP 20 relevant test of (12.4), (12.5) and (12.6) after (9.2) before (9.3) specified in 1.13 |                                | —        |
| <b>1.12 (12.2)</b> | <b>Selection of lamps and ballasts</b>                                                              |                                | —        |
|                    | Lamp used according Annex B                                                                         | (Lamp used see Annex 2)        | —        |
|                    | Controlgear if separate and not supplied                                                            | (Controlgear used see Annex 2) | —        |
| <b>1.12 (12.3)</b> | <b>Endurance test</b>                                                                               |                                | <b>P</b> |
|                    | a) mounting-position .....                                                                          | Normal mounting                | —        |
|                    | b) test temperature (°C) .....                                                                      | 50                             | —        |
|                    | c) total duration (h) .....                                                                         | 240                            | —        |
|                    | d) supply voltage (V) .....                                                                         | 1.1×240                        | —        |
|                    | d) if not equipped with controlgear, constant voltage/current (V) or (A) .....                      |                                | —        |
|                    | e) luminaire ceases to operate                                                                      |                                | —        |
| 1.12 (12.3.2)      | After endurance test:                                                                               |                                | <b>P</b> |
|                    | - no part unserviceable                                                                             |                                | <b>P</b> |
|                    | - luminaire not unsafe                                                                              |                                | <b>P</b> |
|                    | - no damage to track system                                                                         |                                | N/A      |
|                    | - marking legible                                                                                   |                                | <b>P</b> |
|                    | - no cracks, deformation etc.                                                                       |                                | <b>P</b> |
| <b>1.12 (12.4)</b> | <b>Thermal test (normal operation)</b>                                                              | (see Annex 2)                  | <b>P</b> |
| <b>1.12 (12.5)</b> | <b>Thermal test (abnormal operation)</b>                                                            | (see Annex 2)                  | N/A      |
| <b>1.12 (12.6)</b> | <b>Thermal test (failed lamp control gear condition):</b>                                           |                                | N/A      |
| 1.12 (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 .....                                                |                                | —        |

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|--------------------|----------------------------------------------------------------------------|------------------------------|---------|
| Clause             | Requirement + Test                                                         | Result - Remark              | Verdict |
|                    | - measured mounting surface temperature (°C) at 1,1 Un .....               |                              | N/A     |
|                    | - calculated mounting surface temperature (°C) .....                       |                              | N/A     |
|                    | - track-mounted luminaires                                                 |                              | N/A     |
| 1.12 (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     |
| <b>1.12 (12.7)</b> | <b>Thermal test (failed lamp control gear in plastic luminaires):</b>      |                              | N/A     |
| 1.12 (12.7.1)      | Luminaire without temperature sensing control                              |                              | N/A     |
| 1.12 (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).....            |                              | —       |
|                    | Ball-pressure test.....                                                    | See Test Table 1.15 (13.2.1) | N/A     |
| 1.12 (12.7.1.2)    | Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA |                              | N/A     |
|                    | - case of abnormal conditions.....                                         |                              | —       |

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|--------------------|---------------------------------------------------------------------------|----------------------------------------------------------|---------|
| Clause             | Requirement + Test                                                        | Result - Remark                                          | Verdict |
|                    | - 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.....:                                                  | See Test Table 1.15 (13.2.1)                             | N/A     |
| 1.12<br>(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     |
| 1.12<br>(12.7.2)   | Luminaire with temperature sensing control                                |                                                          | N/A     |
|                    | - thermal link .....                                                      | Yes <input type="checkbox"/> No <input type="checkbox"/> | —       |
|                    | - manual reset cut-out.....:                                              | Yes <input type="checkbox"/> No <input type="checkbox"/> | —       |
|                    | - auto reset cut-out.....:                                                | Yes <input type="checkbox"/> No <input type="checkbox"/> | —       |
|                    | - case of abnormal conditions.....:                                       |                                                          | —       |
|                    | - highest measured temperature of fixing point/ exposed part (°C):.....:  |                                                          | —       |
|                    | Ball-pressure test: .....                                                 | See Test Table 1.15 (13.2.1)                             | N/A     |

|                 |                                                                                                |       |     |
|-----------------|------------------------------------------------------------------------------------------------|-------|-----|
| <b>1.13 (9)</b> | <b>RESISTANCE TO DUST AND MOISTURE</b>                                                         |       | P   |
| 1.13 (-)        | If IP > IP 20 the order of tests as specified in clause 1.12                                   |       | N/A |
| 1.13 (9.2)      | Tests for ingress of dust, solid objects and moisture:                                         |       | P   |
|                 | - classification according to IP .....                                                         | IP 20 | —   |
|                 | - mounting position during test.....:                                                          |       | —   |
|                 | - fixing screws tightened; torque (Nm).....:                                                   |       | —   |
|                 | - tests according to clauses .....                                                             |       | —   |
|                 | - electric strength test afterwards                                                            |       | N/A |
|                 | 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 |

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|---------------|-----------------------------------------------------------------------------------------|-----------------|---------|
| Clause        | Requirement + Test                                                                      | Result - Remark | Verdict |
|               | 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 or pressure watertight luminaire                              |                 | N/A     |
|               | e) no contact with live parts (IP2X)                                                    |                 | P       |
|               | e) no entry into enclosure (IP3X and IP4X)                                              |                 | 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     |
| 1.13 (9.3)    | Humidity test 48 h                                                                      |                 | P       |

|                  |                                                                                                                                  |         |     |
|------------------|----------------------------------------------------------------------------------------------------------------------------------|---------|-----|
| <b>1.14 (10)</b> | <b>INSULATION RESISTANCE AND ELECTRIC STRENGTH</b>                                                                               |         | P   |
| 1.14 (10.2.1)    | Insulation resistance test                                                                                                       |         | P   |
|                  | Cable or cord covered by metal foil or replaced by a metal rod of mm Ø .....                                                     |         | —   |
|                  | Insulation resistance (MΩ) .....                                                                                                 |         | —   |
|                  | SELV                                                                                                                             |         | P   |
|                  | - between current-carrying parts of different polarity :                                                                         | >100 MΩ | P   |
|                  | - between current-carrying parts and mounting surface .....                                                                      | >100 MΩ | P   |
|                  | - between current-carrying parts and metal parts of the luminaire .....                                                          | >100 MΩ | P   |
|                  | - 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                                                                                                                  |         | P   |
|                  | - between live parts of different polarity .....                                                                                 | >100 MΩ | P   |
|                  | - between live parts and mounting surface .....                                                                                  | >100 MΩ | P   |
|                  | - between live parts and metal parts .....                                                                                       | >100 MΩ | P   |

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|------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|---------|
| Clause           | Requirement + Test                                                                                                               | Result - Remark                      | Verdict |
|                  | - 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     |
| 1.14 (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) .....                                                                                                           |                                      | N/A     |
|                  | SELV                                                                                                                             |                                      | P       |
|                  | - between current-carrying parts of different polarity:                                                                          | 500V                                 | P       |
|                  | - between current-carrying parts and mounting surface .....                                                                      | 500V                                 | P       |
|                  | - between current-carrying parts and metal parts of the luminaire .....                                                          | 500V                                 | P       |
|                  | - 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                                                                                                                  |                                      | P       |
|                  | - between live parts of different polarity .....                                                                                 | 1480 V                               | P       |
|                  | - between live parts and mounting surface .....                                                                                  | 1480 V                               | 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 ..... |                                      | N/A     |
|                  | - Insulation bushings as described in Section 5 .....                                                                            |                                      | N/A     |
| 1.14 (10.3)      | Touch current or protective conductor current (mA):                                                                              | protective conductor current: 0.02mA | P       |
| <b>1.15 (13)</b> | <b>RESISTANCE TO HEAT, FIRE AND TRACKING</b>                                                                                     |                                      | P       |
| 1.15 (13.2.1)    | Ball-pressure test .....                                                                                                         | See Test Table 1.15 (13.2.1)         | P       |

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|------------------|---------------------------------------|------------------------------|---------|
| Clause           | Requirement + Test                    | Result - Remark              | Verdict |
| 1.15<br>(13.3.1) | Needle-flame test (10 s) .....        | See Test Table 1.15 (13.3.1) | P       |
| 1.15<br>(13.3.2) | Glow-wire test (650°C).....           | See Test Table 1.15 (13.3.2) | P       |
| 1.15 (13.4)      | Proof tracking test (IEC 60112) ..... | See Test Table 1.15 (13.4)   | N/A     |

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|------------------------------------------------------------|------------------------------------------------------------------|--------------------|-----------|--------|----------------------|----------|---------|
| Clause                                                     | Requirement + Test                                               |                    |           |        | Result - Remark      |          | Verdict |
| 1.7 (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                                                                | > 1.95             | 1.5       | 11.1B  | > 3.25               | 2.5      | 11.1A   |
| Working voltage (V) .....                                  |                                                                  |                    |           |        | 240                  |          | —       |
| PTI .....                                                  |                                                                  |                    |           |        | < 600 ☒      ≥ 600 ☐ |          | —       |
| Pulse voltage or $U_P$ if applicable (Kv) .....            |                                                                  |                    |           |        | -                    |          | —       |
| Supplementary information: Between L and N                 |                                                                  |                    |           |        |                      |          |         |
| Distance 2:                                                | B                                                                | > 1.95             | 1.5       | 11.1B  | > 3.25               | 2.5      | 11.1A   |
| Working voltage (V) .....                                  |                                                                  |                    |           |        | 240                  |          | —       |
| PTI .....                                                  |                                                                  |                    |           |        | < 600 ☒      ≥ 600 ☐ |          | —       |
| Pulse voltage or $U_P$ if applicable (Kv) .....            |                                                                  |                    |           |        | -                    |          | —       |
| Supplementary information: Live parts and accessible parts |                                                                  |                    |           |        |                      |          |         |
| Distance 3:                                                | B                                                                | > 1.95             | 1.5       | 11.1B  | > 3.25               | 2.5      | 11.1A   |
| Working voltage (V) .....                                  |                                                                  |                    |           |        | 240                  |          | —       |
| PTI .....                                                  |                                                                  |                    |           |        | < 600 ☒      ≥ 600 ☐ |          | —       |
| Pulse voltage or $U_P$ if applicable (Kv) .....            |                                                                  |                    |           |        | -                    |          | —       |
| Supplementary information: Live parts to mounting surface  |                                                                  |                    |           |        |                      |          |         |

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

| 1.7 (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) .....                                        |                                             |                    |           |        |                   |          | —      |

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|----------------------------------------------------------------------------|--------------------|--|--|---------------------------------------------------------------|-----------------|---|---------|
| Clause                                                                     | Requirement + Test |  |  |                                                               | Result - Remark |   | Verdict |
| PTI .....                                                                  |                    |  |  | < 600 <input type="checkbox"/> ≥ 600 <input type="checkbox"/> |                 | — |         |
| 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 <input type="checkbox"/> ≥ 600 <input type="checkbox"/> |                 | — |         |
| 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 <input type="checkbox"/> ≥ 600 <input type="checkbox"/> |                 | — |         |
| Peak value of the working voltage $\hat{U}_{out}$ if applicable (Kv) ..... |                    |  |  |                                                               |                 | — |         |
| Supplementary information:                                                 |                    |  |  |                                                               |                 |   |         |

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

| 1.15<br>(13.2.1)                       | TABLE: Ball Pressure Test of Thermoplastics |                       |                          | P |
|----------------------------------------|---------------------------------------------|-----------------------|--------------------------|---|
| Allowed impression diameter (mm) ..... |                                             |                       | 2                        | — |
| Object/ Part No./ Material             | Manufacturer/<br>trademark                  | Test temperature (°C) | Impression diameter (mm) |   |
| LED PCB                                | See Annex1                                  | 125                   | 0.5                      |   |
| LED cover                              | See Annex1                                  | 75                    | 0.8                      |   |
|                                        |                                             |                       |                          |   |
| Supplementary information:             |                                             |                       |                          |   |

| IEC 60598-2-1                 |                                                  |                                                       |                                          |                                    |          |
|-------------------------------|--------------------------------------------------|-------------------------------------------------------|------------------------------------------|------------------------------------|----------|
| Clause                        | Requirement + Test                               |                                                       |                                          | Result - Remark                    | Verdict  |
| <b>1.15<br/>(13.3.1)</b>      | <b>TABLE: Needle-flame test (IEC 60695-11-5)</b> |                                                       |                                          |                                    | <b>P</b> |
| Object/ Part No./<br>Material | Manufacturer/<br>trademark                       | Duration of<br>application of test<br>flame (ta); (s) | Ignition of<br>specified layer<br>Yes/No | Duration of<br>burning (tb)<br>(s) | Verdict  |
| LED PCB                       | See Annex1                                       | 10                                                    | No                                       | 0                                  | pass     |
|                               |                                                  |                                                       |                                          |                                    |          |
|                               |                                                  |                                                       |                                          |                                    |          |
| Supplementary information:    |                                                  |                                                       |                                          |                                    |          |

|                               |                                        |  |                                          |                                    |         |
|-------------------------------|----------------------------------------|--|------------------------------------------|------------------------------------|---------|
| 1.15<br>(13.3.2)              | TABLE: Glow-wire test (IEC 60695-2-11) |  |                                          |                                    | P       |
| Glow wire temperature ..... : |                                        |  | 650°C                                    |                                    | —       |
| Object/ Part No./<br>Material | Manufacturer/<br>trademark             |  | Ignition of<br>specified layer<br>Yes/No | Duration of<br>burning (tb)<br>(s) | Verdict |
| LED cover                     | See Annex1                             |  | No                                       | 0                                  | pass    |
|                               |                                        |  |                                          |                                    |         |
|                               |                                        |  |                                          |                                    |         |
| Supplementary information:    |                                        |  |                                          |                                    |         |

| <b>1.15 (13.4)</b>            | <b>TABLE: Proof tracking test (IEC 60112)</b> |                                                                             |  |  | <b>N/A</b> |
|-------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------|--|--|------------|
| <b>Test voltage PTI .....</b> |                                               | 175 V                                                                       |  |  | —          |
| Object/ Part No./ Material    | Manufacturer/<br>trademark                    | Withstand 50 drops without failure on three<br>places or on three specimens |  |  | Verdict    |
|                               |                                               |                                                                             |  |  |            |
|                               |                                               |                                                                             |  |  |            |
|                               |                                               |                                                                             |  |  |            |
| Supplementary information:    |                                               |                                                                             |  |  |            |

| IEC 60598-2-1 |                    |                 |         |
|---------------|--------------------|-----------------|---------|
| 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 <sup>1</sup> |   |
| LED               | C    | CREE                                       | CREE 5050                                            | VF:24.0V<br>IF:200MA<br>CCT:MAX 6500K         | IEC 62778                            | Test with appliance                |   |
| LED               | C    | Lumileds                                   | PH 5050                                              | VF:24.0V<br>IF:200MA<br>CCT:MAX 6500K         | IEC 62778                            | Test with appliance                |   |
| LED module PCB    | C    | HUIZHOU SEA INDUSTRY LTD                   | HC-02                                                | V-0, 130°C                                    | IEC 60598-2-1<br>IEC 60598-1         | UL E346036<br>Test with appliance  |   |
| LED cover         | C    | MITSUBISHI RAYON POLYMER NANTONG CO LTD    | PX-500, TBV150, DX,LX,TF8                            | PMMA; VH001                                   | UL 94+<br>EN 60598-2-1<br>EN 60598-1 | UL E256044+<br>Test with appliance |   |
| LED cover         | C    | Darkoo Optics (Zhongshan) Co., Ltd         | DK-5050                                              | PMMA; V040                                    | UL 94+<br>EN 60598-2-1<br>EN 60598-1 | UL E228285+<br>Test with appliance |   |
| LED cover         | C    | TEIJIN POLYCARBONATE CHINA LTD             | L-1250U(#)(f1),<br>L-1250V(#)(f1),<br>L-1250Z(#)(f1) | PC                                            | UL 94+<br>EN 60598-2-1<br>EN 60598-1 | UL E245526+<br>Test with appliance |   |
| LED cover         | C    | FORMOSA IDEMITSU PETROCHEMICAL CORPORATION | IV2200R(f1)                                          | PC                                            | UL 94+<br>EN 60598-2-1<br>EN 60598-1 | UL E238753+<br>Test with appliance |   |
| Terminal block    | C    | Shenzhen Greenway Electronic Co.,Ltd       | M682, M683, M685, M686, M666                         | 450V~, T105, IP68, MAX32A                     | IEC 60998-1<br>IEC60998-2-1          | CB<br>NL-84212                     |   |
| LED driver        | B    | MEAN WELL Enterprises Co., Ltd.            | XLG-50                                               | Input: 220-240VAC, 50/60Hz,;<br>Output: DC22- | EN61347                              | ENEC 35-109039                     |   |

| IEC 60598-2-1                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |                               |         |                                   |               |                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------|---------|-----------------------------------|---------------|-----------------|
| Clause                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Requirement + Test |                               |         | Result - Remark                   |               | Verdict         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |                               |         | 54V 0.53-2.1A                     |               |                 |
| LED module input wire                                                                                                                                                                                                                                                                                                                                                                                                                                                    | A                  | Zhejiang Jinniu Cable Co.,Ltd | H05RN-F | 300/500V<br>2x1.0 mm <sup>2</sup> | EN 50525-2-21 | VDE<br>40028195 |
| <p>Supplementary information:</p> <p><sup>1)</sup> Provided evidence ensures the agreed level of compliance. See OD-CB2039.</p> <p>The codes above have the following meaning:</p> <p>A - The component is replaceable with another one, also certified, with equivalent characteristics</p> <p>B - The component is replaceable if authorised by the test house</p> <p>C - Integrated component tested together with the appliance</p> <p>D - Alternative component</p> |                    |                               |         |                                   |               |                 |

| IEC 60598-2-1                 |                                                                                                            |                    |         |        |           |                     |       |
|-------------------------------|------------------------------------------------------------------------------------------------------------|--------------------|---------|--------|-----------|---------------------|-------|
| Clause                        | Requirement + Test                                                                                         | Result - Remark    | Verdict |        |           |                     |       |
| ANNEX 2                       | TABLE: Thermal tests of Section 12                                                                         |                    | P       |        |           |                     |       |
|                               | Type reference.....:                                                                                       | ESLL-AR-RL32-40-WH | —       |        |           |                     |       |
|                               | Lamp used .....                                                                                            | LEDs               | —       |        |           |                     |       |
|                               | Lamp control gear used .....                                                                               | -                  | —       |        |           |                     |       |
|                               | Mounting position of luminaire .....                                                                       | Normal mounting    | —       |        |           |                     |       |
|                               | Supply wattage (W) .....                                                                                   | 32 W               | —       |        |           |                     |       |
|                               | Supply current (A) .....                                                                                   | -                  | —       |        |           |                     |       |
|                               | Temperatures in test 1 – 4 below are corrected for ta (°C) .....                                           | 40 °C              | —       |        |           |                     |       |
|                               | - abnormal operating mode.....:                                                                            | -                  | —       |        |           |                     |       |
| 1.12 (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 ..... | 240 V×1.06         | —       |        |           |                     |       |
|                               | - 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 .....                         | -                  | —       |        |           |                     |       |
| 1.12 (12.5)                   | - test 4: 1,1 times rated voltage or 1,05 times rated wattage or 1,1 times constant voltage/current.....:  | -                  | —       |        |           |                     |       |
| Temperature measurements (°C) |                                                                                                            |                    |         |        |           |                     |       |
| Part                          | Ambient                                                                                                    | Cl. 12.4 – normal  |         |        |           | Cl. 12.5 – abnormal |       |
|                               |                                                                                                            | test 1             | test 2  | test 3 | limit     | test 4              | limit |
| LED PCB                       | 40                                                                                                         | -                  | 94.2    | -      | Cl.13.2.1 | -                   | -     |
| LED cover                     | 40                                                                                                         | -                  | 95.7    | -      | Cl.13.2.1 | -                   | -     |
| Internal wire                 | 40                                                                                                         | -                  | 81.3    | -      | 90        | -                   | -     |
| Glass cover                   | 40                                                                                                         | -                  | 96.2    | -      | Ref.      | -                   | -     |
| tc of LED driver              | 40                                                                                                         | -                  | 68.7    | -      | 90        | -                   | -     |
| Output wire of LED driver     | 40                                                                                                         | -                  | 44.3    | -      | 90        | -                   | -     |
| Input wire of LED driver      | 40                                                                                                         | -                  | 44.4    | -      | 90        | -                   | -     |
| Mounting surface              | 40                                                                                                         | -                  | 47.5    | -      | 90        | -                   | -     |
| Supplementary information:    |                                                                                                            |                    |         |        |           |                     |       |

| IEC 60598-2-1  |                                                     |                 |         |
|----------------|-----------------------------------------------------|-----------------|---------|
| Clause         | Requirement + Test                                  | Result - Remark | Verdict |
| <b>ANNEX 3</b> | <b>Screw terminals (part of the luminaire)</b>      |                 | N/A     |
| <b>(14)</b>    | <b>SCREW TERMINALS</b>                              |                 | 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 (mm <sup>2</sup> ) .....       |                 | —       |
| (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     |

| IEC 60598-2-1  |                                                                               |                 |         |
|----------------|-------------------------------------------------------------------------------|-----------------|---------|
| Clause         | Requirement + Test                                                            | Result - Remark | Verdict |
| <b>ANNEX 4</b> | <b>Screwless terminals (part of the luminaire)</b>                            |                 | N/A     |
| <b>(15)</b>    | <b>SCREWLESS TERMINALS</b>                                                    |                 | 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     |

| IEC 60598-2-1 |                                                                                   |                 |         |
|---------------|-----------------------------------------------------------------------------------|-----------------|---------|
| 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     |

|                          |                                                            |   |   |   |   |   |   |   |   |    |     |
|--------------------------|------------------------------------------------------------|---|---|---|---|---|---|---|---|----|-----|
| (15.6.3.1)<br>(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                     |   |   |   |   |   |   |   |   |    | N/A |
|                          | Voltage drop after 10th alt. 25th cycle                    |   |   |   |   |   |   |   |   |    | N/A |
|                          | Max. allowed voltage drop (mV)<br>.....<br>:               |   |   |   |   |   |   |   |   |    | —   |
| terminal                 | 1                                                          | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |     |
| voltage drop (mV)        |                                                            |   |   |   |   |   |   |   |   |    |     |
|                          | Voltage drop after 50th alt. 100th cycle                   |   |   |   |   |   |   |   |   |    | N/A |
|                          | Max. allowed voltage drop (mV)<br>.....<br>:               |   |   |   |   |   |   |   |   |    | —   |
| terminal                 | 1                                                          | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |     |
| voltage drop (mV)        |                                                            |   |   |   |   |   |   |   |   |    |     |
|                          | Continued ageing: voltage drop after 10th alt. 25th cycle  |   |   |   |   |   |   |   |   |    | N/A |
|                          | Max. allowed voltage drop (mV)<br>.....<br>:               |   |   |   |   |   |   |   |   |    | —   |
| terminal                 | 1                                                          | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |     |
| voltage drop (mV)        |                                                            |   |   |   |   |   |   |   |   |    |     |
|                          | Continued ageing: voltage drop after 50th alt. 100th cycle |   |   |   |   |   |   |   |   |    | N/A |

| IEC 60598-2-1              |                                              |   |   |   |   |                 |   |   |   |         |
|----------------------------|----------------------------------------------|---|---|---|---|-----------------|---|---|---|---------|
| Clause                     | Requirement + Test                           |   |   |   |   | Result - Remark |   |   |   | Verdict |
|                            | Max. allowed voltage drop (mV)<br>.....<br>: |   |   |   |   |                 |   |   |   | —       |
| terminal                   | 1                                            | 2 | 3 | 4 | 5 | 6               | 7 | 8 | 9 | 10      |
| voltage drop (mV)          |                                              |   |   |   |   |                 |   |   |   |         |
|                            |                                              |   |   |   |   |                 |   |   |   |         |
| Supplementary information: |                                              |   |   |   |   |                 |   |   |   |         |

**Attachment No.1****IEC60598\_2\_1G - ATTACHMENT**

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

**ATTACHMENT TO TEST REPORT IEC 60598-2-1**  
**EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES**

Luminaires  
Part 2: Particular requirements  
Section 1: Fixed general purpose luminaires

**Differences according to** .....: EN IEC 60598-2-1:2021 used in conjunction with  
EN IEC 60598-1:2024+A11:2024

**Annex Form No.** ..... : EU\_GD\_IEC60598\_2\_1D

**Annex Form Originator** ..... : OVE

**Master Annex Form** ..... : 2014-11

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|  |                                          |   |
|--|------------------------------------------|---|
|  | <b>CENELEC COMMON MODIFICATIONS (EN)</b> | P |
|--|------------------------------------------|---|

|                |                                                                                     |          |
|----------------|-------------------------------------------------------------------------------------|----------|
| <b>1.5 (3)</b> | <b>MARKING</b>                                                                      | <b>P</b> |
| 1.5 (3.3.101)  | For luminaires not supplied with terminal block:<br>Adequate warning on the package | P        |

|                |                                    |     |
|----------------|------------------------------------|-----|
| <b>1.6 (4)</b> | <b>CONSTRUCTION</b>                | N/A |
| 1.6 (4.11.6)   | Electro-mechanical contact systems | N/A |

|                 |                                                                          |          |
|-----------------|--------------------------------------------------------------------------|----------|
| <b>1.10 (5)</b> | <b>EXTERNAL AND INTERNAL WIRING</b>                                      | <b>P</b> |
| 1.10 (5.2.1)    | Connecting leads                                                         | P        |
|                 | - without a means for connection to the supply                           | P        |
|                 | - terminal block specified                                               | P        |
|                 | - relevant information provided                                          | P        |
|                 | - compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1 | P        |
| 1.10 (5.2.2)    | Cables equal to EN 50525                                                 | N/A      |
|                 | Replace table 5.1 – Supply cord                                          | N/A      |

**Attachment No.1****IEC60598\_2\_1G - ATTACHMENT**

| Clause            | Requirement + Test                                                                                    | Result - Remark | Verdict  |
|-------------------|-------------------------------------------------------------------------------------------------------|-----------------|----------|
| <b>1.12 (12)</b>  | <b>ENDURANCE TESTS AND THERMAL TESTS</b>                                                              |                 | <b>P</b> |
| 1.12<br>(12.4.2c) | Thermal test (normal operation)<br>see footnote c to table 12.2 relating to unsleeved<br>fixed wiring |                 | P        |
| <b>ZB</b>         | <b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)</b>                                                     |                 | N/A      |
| (3.3)             | DK: power supply cords of class I luminaires<br>with label                                            |                 | N/A      |
| (4.5.1)           | DK: socket-outlets                                                                                    |                 | N/A      |
| (5.2.1)           | CY, DK, FI, SE, GB: type of plug                                                                      |                 | N/A      |
| <b>ZC</b>         | <b>ANNEX ZC, NATIONAL DEVIATIONS (EN)</b>                                                             |                 | N/A      |
| (4 & 5)           | FR: Shuttered socket-outlets 10/16A                                                                   |                 | N/A      |
|                   | GB: Requirements according to United Kingdom<br>Building Regulation                                   |                 | N/A      |

## Attachment No.2

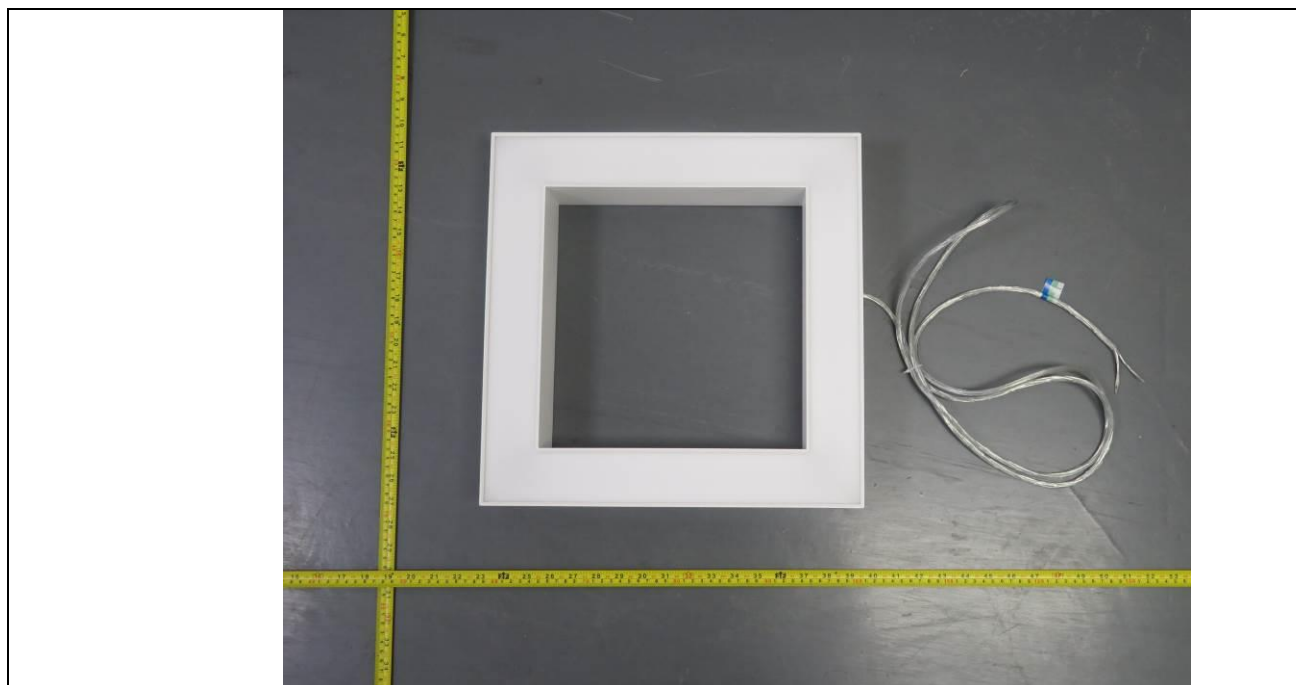
## EN IEC 62031

| Clause         | Requirement + Test                                                                                                                                      | Result - Remark | Verdict  |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------|
| <b>13 (14)</b> | <b>FAULT CONDITIONS</b>                                                                                                                                 |                 | <b>P</b> |
| - (14.1)       | In compliance with IEC 61347-1 (clause numbers between parentheses refer to IEC 61347-1)                                                                |                 | N/A      |
|                | When operated under fault conditions the LED module:                                                                                                    |                 | N/A      |
|                | - does not emit flames or molten material                                                                                                               |                 | N/A      |
|                | - does not produce flammable gases                                                                                                                      |                 | N/A      |
|                | - protection against accidental contact not impaired                                                                                                    |                 | N/A      |
|                | 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 |                 | N/A      |
| - (14.2)       | Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts) |                 | N/A      |
|                | Creepage distances on printed boards less than specified in clause 16 in Part 1 provided with coating according to IEC 60664-3                          |                 | N/A      |
| - (14.3)       | Short-circuit or interruption of semiconductor devices                                                                                                  |                 | N/A      |
| - (14.4)       | Short-circuit across insulation consisting of lacquer, enamel or textile                                                                                |                 | N/A      |
| - (14.5)       | Short-circuit across electrolytic capacitors                                                                                                            |                 | N/A      |
| - (14.6)       | After the tests has been carried out on three samples:                                                                                                  |                 | N/A      |
|                | The insulation resistance $\geq 1 \text{ M}\Omega$ .....                                                                                                |                 | N/A      |
|                | No flammable gases                                                                                                                                      |                 | N/A      |
|                | No accessible parts have become live                                                                                                                    |                 | N/A      |
|                | During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite                                                        |                 | N/A      |
| - (14.7)       | Relevant fault condition tests with high-power supply                                                                                                   |                 | N/A      |
| <b>13.2</b>    | <b>Overpower condition</b>                                                                                                                              |                 | <b>P</b> |
|                | Module withstands overpower condition >15 min.                                                                                                          |                 | P        |
|                | Module with automatic protective device or power limiter, test performed 15 min. at limit.                                                              |                 | N/A      |
|                | No fire, smoke or flammable gas is produced                                                                                                             |                 | P        |
|                | Molten material does not ignite tissue paper, spread below the module                                                                                   |                 | P        |

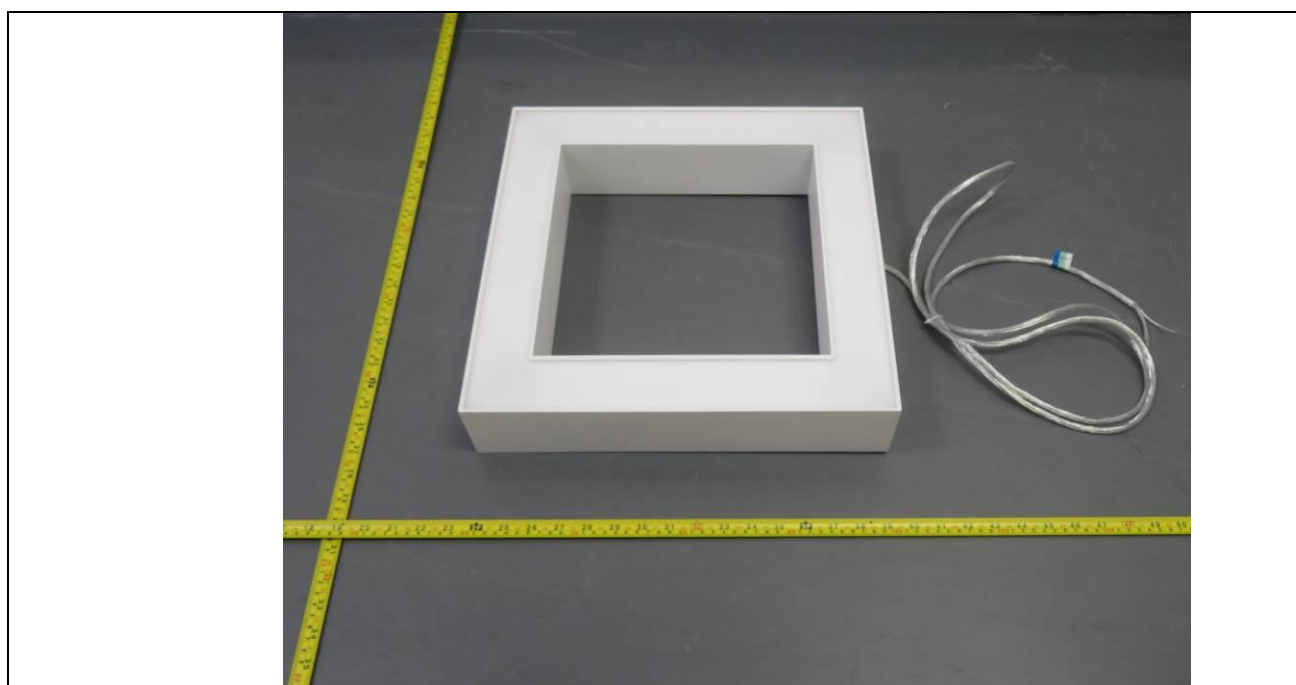
**Attachment No.3**

**Product Photos**

Details of: Fig. 1



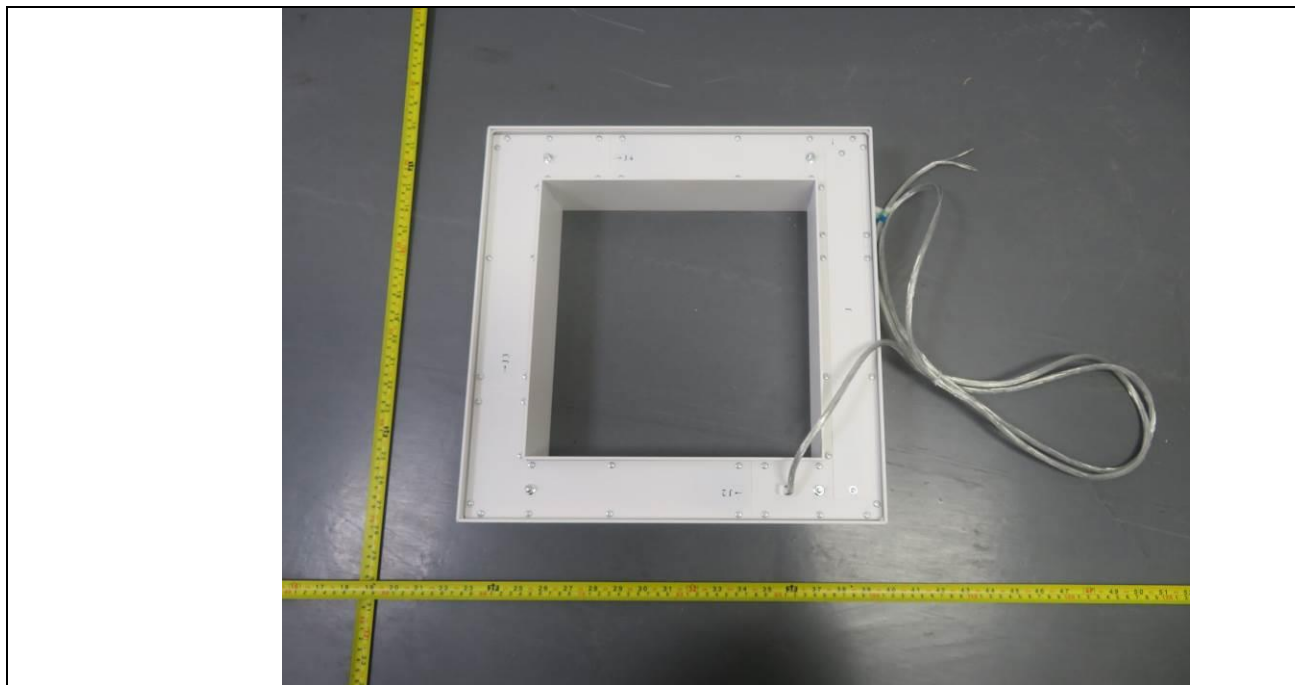
Details of: Fig. 2



**Attachment No.3**

**Product Photos**

Details of: Fig. 3



Details of: Fig. 4



- End of test report -