



Report No.: HTT202410388LR

# CE LVD REPORT

|                  |                                                                                                                                                          |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prepared For :   | Shenzhen PULUZ Technology Limited<br>8/F, 614 Bldg, Bagua 1st Road, Futian, Shenzhen, China                                                              |
| Product Name:    | LED Light Portable Fold Studio Box                                                                                                                       |
| Model :          | PU5064                                                                                                                                                   |
| Prepared By :    | Shenzhen HTT Technology Co., Ltd.<br>1F, B Building, Huafeng International Robotics Industrial Park,<br>Gushu, Xixiang Street, Bao'an District, Shenzhen |
| Test Date:       | Jun. 21, 2024 ~ Jul. 05, 2024                                                                                                                            |
| Date of Report : | Oct. 21, 2024                                                                                                                                            |
| Report No.:      | HTT202410388LR                                                                                                                                           |



Report No.: HTT202410388LR

## TEST REPORT

EN 60598-2-4

### Part 2: Particular requirements

#### Section Four: Portable general purpose luminaires

Report reference No ..... HTT202410388LR

Tested by (+ signature)..... Darek Wang

*Darek Wang*

Approved by (+ signature)..... Kevin Yang

*Kevin Yang*

Date of issue ..... Jul. 05, 2024



Testing Laboratory Name ..... Shenzhen HTT Technology Co., Ltd.

Address ..... 1F, B Building, Huafeng International Robotics Industrial Park,  
Gushu, Xixiang Street, Bao'an District, Shenzhen

Testing location ..... CBTL ☐ CCATL ☐ SMT ☐ TMP ☐

Address ..... Same as above.

Applicant's Name..... Shenzhen PULUZ Technology Limited

Address ..... 8/F, 614 Bldg, Bagua 1st Road, Futian, Shenzhen, China

Standard..... EN 60598-2-4:2018, used in conjunction with  
EN IEC 60598-1:2021

Test procedure ..... CE-LVD

Procedure deviation ..... N/A.

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

Product ..... LED Light Portable Fold Studio Box

Manufacturer..... Shenzhen PULUZ Technology Limited

Address ..... 8/F, 614 Bldg, Bagua 1st Road, Futian, Shenzhen, China

Trademark ..... PULUZ

Model and/or type reference ..... PU5064

Rating(s) ..... Input: 18V==4A

Power: 72W

Adapter: Input: AC100-250V, 47-63Hz

Output: 18V, 4A

**Test item particulars :**

Equipment mobility ..... : Portable equipment  
Operating condition..... : Continuous  
Tested for IT power systems ..... : N/A  
IT testing, phase-phase voltage (V) ..... : N/A  
Class of equipment ..... : Class III  
Protection against ingress of water ..... : IPX0

**Tests Standards:**

- EN IEC 60598-1:2021  
- EN 60598-2-4:2018

**Testing location:**

Refer to page 1

The submitted samples were found to comply with the requirements of above specification.

**Test case verdicts:**

Test case does not apply to the test object..... : N(/A.)  
Test item does meet the requirement..... : P(ass)  
Test item does not meet the requirement..... : F(ail)

**Testing:**

Date of receipt of test item ..... : Jun. 21, 2024  
Date(s) of performance of test ..... : Jun. 21, 2024 ~ Jul. 05, 2024



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### Model List

|                   |                                                                                                                                                             |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Rated</b>      | Input: 18V $\overline{=}$ 4A<br>Power: 72W<br>Adapter:Input:AC100-250V,47-63Hz<br>Output:18V,4A                                                             |
| <b>Model</b>      | PU5064                                                                                                                                                      |
| <b>Difference</b> | 1.All models have same diagram circuit, except different model names and components relevant to different power.<br>2.All tests are carried out on PU5064 . |

### Label

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>PULUZ<br/>LED Light Portable Fold Studio Box<br/>Model: PU5064<br/>Input: 18V<math>\overline{=}</math>4A<br/>Power: 72W</p> <p>   </p> <p>Shenzhen PULUZ Technology Limited</p> |
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### Note:

1. The height of graphical symbols shall not be less than 5 mm;
2. The height of letters and numerals shall not be less than 2 mm;
3. The main rating label was attached in enclosure.



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <p><b>General remarks:</b></p> <p>Clause number between brackets refer to clauses in EN IEC 60598-1:2021.</p> <p>"(see remark #)" refers to a remark appended to the report.</p> <p>"(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a comma is used as the decimal separator.</p> <p>The test results presented in this report relate only to the object tested.</p> <p>This report shall not be reproduced except in full without the written approval of the testing laboratory.</p> <p>When determining the test conclusion, the Measurement Uncertainty of test has been considered.</p> <p>Unless otherwise specified, test are made under normal conditions at an ambient temperature within the range of 15°C to 35°C, RH45% to 75% and an air pressure of 860mbar of 1060mbar.</p> | <p>Attachment with:</p> <ol style="list-style-type: none"><li>1) Equipment list</li><li>2) Photo documentation</li></ol> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|



| EN 60598-2-4     |                                                                             |                                                                                   |         |
|------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------|
| Clause           | Requirement + Test                                                          | Result - Remark                                                                   | Verdict |
| <b>4.4 (0)</b>   | <b>GENERAL TEST REQUIREMENTS</b>                                            |                                                                                   | P       |
| 4.4 (0.3)        | More sections applicable.....:                                              | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br>Section/s: | —       |
| <b>4.4 (0.7)</b> | <b>Information for luminaire design in light sources standards</b>          |                                                                                   | —       |
| 4.4 (0.7.2)      | Light source safety standard .....                                          |                                                                                   | —       |
|                  | Luminaire design in the light source safety standard                        |                                                                                   | N/A     |
| <b>4.5 (2)</b>   | <b>CLASSIFICATION OF LUMINAIRES</b>                                         |                                                                                   | P       |
| 4.5 (2.2)        | Type of protection .....                                                    | Class III                                                                         | P       |
| 4.5 (2.3)        | Degree of protection.....:                                                  | IPX0                                                                              | P       |
| 4.5 (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"/>               | —       |
| 4.5.1 (-)        | Ordinary luminaire.....:                                                    | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>               | —       |
| 4.5.2 (-)        | Portable luminaire for outdoor use.....:                                    | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               | —       |
| 4.5.3 (2.4)      | Luminaire suitable for direct mounting on normally flammable surfaces.....: | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>               | —       |
| <b>4.6 (3)</b>   | <b>MARKING</b>                                                              |                                                                                   | P       |
| 4.6 (3.2)        | Mandatory markings                                                          |                                                                                   | P       |
|                  | Position of the marking                                                     | On the enclosure                                                                  | P       |
|                  | Format of symbols/text                                                      | Symbols>5mm Text>2mm                                                              | P       |
| 4.6 (3.3)        | Additional information                                                      |                                                                                   | P       |
|                  | Language of instructions                                                    | English                                                                           | P       |
| 4.6 (3.3.1)      | Combination luminaires                                                      |                                                                                   | N/A     |
| 4.6 (3.3.2)      | Nominal frequency in Hz                                                     |                                                                                   | N/A     |
| 4.6 (3.3.3)      | Operating temperature                                                       |                                                                                   | N/A     |
| 4.6 (3.3.5)      | Wiring diagram                                                              |                                                                                   | N/A     |
| 4.6 (3.3.6)      | Special conditions                                                          |                                                                                   | N/A     |
| 4.6 (3.3.7)      | Metal halide lamp luminaire – warning                                       |                                                                                   | N/A     |
| 4.6 (3.3.8)      | Limitation for semi-luminaires                                              |                                                                                   | N/A     |
| 4.6 (3.3.9)      | Power factor and supply current                                             | 4A                                                                                | P       |
| 4.6 (3.3.10)     | Suitability for use indoors                                                 | Used indoors                                                                      | P       |
| 4.6 (3.3.11)     | Luminaires with remote control                                              |                                                                                   | N/A     |
| 4.6 (3.3.12)     | Clip-mounted luminaire – warning                                            |                                                                                   | N/A     |
| 4.6 (3.3.13)     | Specifications of protective shields                                        |                                                                                   | N/A     |



| EN 60598-2-4   |                                                                                                          |                                                          |         |
|----------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------|---------|
| Clause         | Requirement + Test                                                                                       | Result - Remark                                          | Verdict |
| 4.6 (3.3.14)   | Symbol for nature of supply                                                                              | ==                                                       | P       |
| 4.6 (3.3.15)   | Rated current of socket outlet                                                                           |                                                          | N/A     |
| 4.6 (3.3.16)   | Rough service luminaire                                                                                  |                                                          | N/A     |
| 4.6 (3.3.17)   | Mounting instruction for type Y, type Z and some type X attachments                                      | AC/DC adapter supply                                     | N/A     |
| 4.6 (3.3.18)   | Non-ordinary luminaires with PVC cable                                                                   |                                                          | N/A     |
| 4.6 (3.3.19)   | Protective conductor current in instructions, if applicable                                              |                                                          | N/A     |
| 4.6 (3.3.20)   | Provided with information if not intended to be mounted within arm's reach                               |                                                          | N/A     |
| 4.6 (3.3.21)   | Non replaceable and non-user replaceable light sources information provided                              |                                                          | N/A     |
|                | Cautionary symbol                                                                                        |                                                          | N/A     |
| 4.6 (3.3.22)   | Controllable luminaires, classification of insulation provided                                           |                                                          | N/A     |
| 4.6 (3.3.23)   | Luminaire without controlgear provided with necessary information for selection of appropriate component |                                                          | N/A     |
| 4.6 (3.3.24)   | If not supplied with terminal block, information on the packaging                                        |                                                          | N/A     |
| 4.6 (3.4)      | Test with water                                                                                          | 15s with water                                           | P       |
|                | Test with hexane                                                                                         | 15s with hexane                                          | P       |
|                | Legible after test                                                                                       | The marking is legible                                   | P       |
|                | Label attached                                                                                           | The marking not be easily removable and shows no curling | P       |
| 4.6.1 (-)      | Luminaire not suitable for outdoor application                                                           |                                                          | P       |
|                | Required symbol                                                                                          |                                                          | P       |
|                | Information in the instructions                                                                          |                                                          | P       |
| 4.6.2 (-)      | Outdoor use, socket outlet incorporated in the luminaire                                                 |                                                          | N/A     |
|                | Maximum current rating marked                                                                            |                                                          | N/A     |
|                | Position of the marking                                                                                  |                                                          | N/A     |
| <b>4.7 (4)</b> | <b>CONSTRUCTION</b>                                                                                      |                                                          | P       |
| 4.7 (4.2)      | Components replaceable without difficulty                                                                |                                                          | P       |
| 4.7 (4.3)      | Wireways smooth and free from sharp edges                                                                |                                                          | P       |
| 4.7 (4.4)      | Lampholders                                                                                              |                                                          | N/A     |



| EN 60598-2-4     |                                                                                                                          |                 |         |
|------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause           | Requirement + Test                                                                                                       | Result - Remark | Verdict |
| 4.7 (4.4.1)      | Integral lampholder                                                                                                      |                 | N/A     |
| 4.7 (4.4.2)      | Wiring connection                                                                                                        |                 | N/A     |
| 4.7 (4.4.3)      | Lampholder for end-to-end mounting                                                                                       |                 | N/A     |
| 4.7 (4.4.4)      | Positioning                                                                                                              |                 | N/A     |
|                  | - pressure test (N) ..... :                                                                                              |                 | N/A     |
|                  | After test the lampholder comply with relevant standard sheets and show no damage                                        |                 | N/A     |
|                  | After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation |                 | N/A     |
|                  | - bending test (N) ..... :                                                                                               |                 | N/A     |
|                  | After test the lampholder have not moved from its position and show no permanent deformation                             |                 | N/A     |
| 4.7 (4.4.5)      | Peak pulse voltage                                                                                                       |                 | N/A     |
| 4.7 (4.4.6)      | Centre contact                                                                                                           |                 | N/A     |
| 4.7 (4.4.7)      | Parts in rough service luminaires resistant to tracking                                                                  |                 | N/A     |
| 4.7 (4.4.8)      | Lamp connectors                                                                                                          |                 | N/A     |
| 4.7 (4.4.9)      | Caps and bases correctly used                                                                                            |                 | N/A     |
| 4.7 (4.4.10)     | Light source for lampholder or connection according IEC 60061 not connected another way                                  |                 | N/A     |
| <b>4.7 (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>4.7 (4.6)</b> | <b>Terminal blocks</b>                                                                                                   |                 | N/A     |
|                  | Tails                                                                                                                    |                 | N/A     |
|                  | Unsecured blocks                                                                                                         |                 | N/A     |
| <b>4.7 (4.7)</b> | <b>Terminals and supply connections</b>                                                                                  |                 | N/A     |
| 4.7 (4.7.1)      | Contact to metal parts                                                                                                   |                 | N/A     |
| 4.7 (4.7.2)      | Test 8 mm live conductor                                                                                                 |                 | N/A     |
|                  | Test 8 mm earth conductor                                                                                                |                 | N/A     |
| 4.7 (4.7.3)      | Terminals for supply conductors                                                                                          |                 | N/A     |
| 4.7 (4.7.3.1)    | Welded method and material                                                                                               |                 | N/A     |
|                  | - stranded or solid conductor                                                                                            |                 | N/A     |
|                  | - spot welding                                                                                                           |                 | N/A     |





| EN 60598-2-4      |                                                                                    |                 |            |
|-------------------|------------------------------------------------------------------------------------|-----------------|------------|
| Clause            | Requirement + Test                                                                 | Result - Remark | Verdict    |
|                   | - welding between wires                                                            |                 | N/A        |
|                   | - Type Z attachment                                                                |                 | N/A        |
|                   | - mechanical test according to 15.6.2                                              |                 | N/A        |
|                   | - electrical test according to 15.6.3                                              |                 | N/A        |
|                   | - heat test according to 15.6.3.2.3 and 15.6.3.2.4                                 |                 | N/A        |
| 4.7 (4.7.4)       | Terminals other than supply connection                                             |                 | N/A        |
| 4.7 (4.7.5)       | Heat-resistant wiring/sleeves                                                      |                 | N/A        |
| 4.7 (4.7.6)       | Multi-pole plug                                                                    |                 | N/A        |
|                   | - test at 30 N                                                                     |                 | N/A        |
| <b>4.7 (4.8)</b>  | <b>Switches</b>                                                                    |                 | <b>N/A</b> |
|                   | - adequate rating                                                                  |                 | N/A        |
|                   | - adequate fixing                                                                  |                 | N/A        |
|                   | - polarized supply                                                                 |                 | N/A        |
|                   | - compliance with IEC 61058-1 for electronic switches                              |                 | N/A        |
| <b>4.7 (4.9)</b>  | <b>Insulating lining and sleeves</b>                                               |                 | <b>P</b>   |
| 4.7 (4.9.1)       | Retainment                                                                         |                 | P          |
|                   | Method of fixing.....:                                                             |                 | P          |
| 4.7 (4.9.2)       | Insulated linings and sleeves:                                                     |                 | P          |
|                   | Resistant to a temperature > 20 °C to the wire temperature or                      |                 | N/A        |
|                   | a) & c) Insulation resistance and electric strength                                |                 | P          |
|                   | b) Ageing test. Temperature (°C).....:                                             |                 | N/A        |
| <b>4.7 (4.10)</b> | <b>Double or reinforced insulation</b>                                             |                 | <b>N/A</b> |
| 4.7 (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        |
| 4.7 (4.10.2)      | Assembly gaps:                                                                     |                 | N/A        |
|                   | - not coincidental                                                                 |                 | N/A        |
|                   | - no straight access with test probe                                               |                 | N/A        |
| 4.7 (4.10.3)      | Retainment of insulation:                                                          |                 | N/A        |



| EN 60598-2-4      |                                                                                                                            |                 |          |
|-------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------|----------|
| Clause            | Requirement + Test                                                                                                         | Result - Remark | Verdict  |
|                   | - fixed                                                                                                                    |                 | N/A      |
|                   | - unable to be replaced; luminaire inoperative                                                                             |                 | N/A      |
|                   | - sleeves retained in position                                                                                             |                 | N/A      |
|                   | - lining in lampholder                                                                                                     |                 | N/A      |
| 4.7 (4.10.4)      | Protective impedance device                                                                                                |                 | N/A      |
|                   | 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>4.7 (4.11)</b> | <b>Electrical connections and current-carrying parts</b>                                                                   |                 | <b>P</b> |
| 4.7 (4.11.1)      | Contact pressure                                                                                                           |                 | P        |
| 4.7 (4.11.2)      | Screws:                                                                                                                    |                 | P        |
|                   | - self-tapping screws                                                                                                      |                 | P        |
|                   | - thread-cutting screws                                                                                                    |                 | N/A      |
| 4.7 (4.11.3)      | Screw locking:                                                                                                             |                 | P        |
|                   | - spring washer                                                                                                            |                 | P        |
|                   | - rivets                                                                                                                   |                 | N/A      |
| 4.7 (4.11.4)      | Material of current-carrying parts                                                                                         |                 | P        |
| 4.7 (4.11.5)      | No contact to wood or mounting surface                                                                                     |                 | P        |
| 4.7 (4.11.6)      | Electro-mechanical contact systems                                                                                         |                 | N/A      |
| <b>4.7 (4.12)</b> | <b>Screws and connections (mechanical) and glands</b>                                                                      |                 | <b>P</b> |
| 4.7 (4.12.1)      | Screws not made of soft metal                                                                                              |                 | P        |
|                   | Screws of insulating material                                                                                              |                 | N/A      |
|                   | Torque test: torque (Nm); part.....:                                                                                       | 0.5Nm           | P        |
|                   | Torque test: torque (Nm); part.....:                                                                                       |                 | N/A      |
|                   | Torque test: torque (Nm); part.....:                                                                                       |                 | N/A      |
| 4.7 (4.12.2)      | Screws with diameter < 3 mm screwed into metal                                                                             |                 | N/A      |
| 4.7 (4.12.4)      | Locked connections:                                                                                                        |                 | N/A      |
|                   | - fixed arms; torque (Nm).....:                                                                                            |                 | N/A      |
|                   | - lampholder; torque (Nm).....:                                                                                            |                 | N/A      |
|                   | - push-button switches; torque 0,8 Nm.....:                                                                                |                 | N/A      |
| 4.7 (4.12.5)      | Screwed glands; force (Nm).....:                                                                                           |                 | N/A      |



| EN 60598-2-4      |                                                                     |                 |            |
|-------------------|---------------------------------------------------------------------|-----------------|------------|
| Clause            | Requirement + Test                                                  | Result - Remark | Verdict    |
| <b>4.7 (4.13)</b> | <b>Mechanical strength</b>                                          |                 | <b>P</b>   |
| 4.7 (4.13.1)      | Impact tests:                                                       |                 | P          |
|                   | - fragile parts; energy (Nm)..... :                                 | 0.35 Nm         | P          |
|                   | - other parts; energy (Nm)..... :                                   | 0.50 Nm         | P          |
|                   | 1) live parts                                                       |                 | P          |
|                   | 2) linings                                                          |                 | N/A        |
|                   | 3) protection                                                       |                 | P          |
|                   | 4) covers                                                           |                 | N/A        |
| 4.7 (4.13.3)      | Straight test finger                                                |                 | P          |
| 4.7 (4.13.4)      | Rough service luminaires                                            |                 | N/A        |
|                   | - IP54 or higher                                                    |                 | N/A        |
|                   | a) fixed                                                            |                 | N/A        |
|                   | b) hand-held                                                        |                 | N/A        |
|                   | c) delivered with a stand                                           |                 | N/A        |
|                   | d) for temporary installations and suitable for mounting on a stand |                 | N/A        |
| 4.7 (4.13.6)      | Tumbling barrel                                                     |                 | N/A        |
| <b>4.7 (4.14)</b> | <b>Suspensions, fixings and means of adjusting</b>                  |                 | <b>N/A</b> |
| 4.7 (4.14.1)      | Mechanical load:                                                    |                 | N/A        |
|                   | A) four times the weight                                            |                 | N/A        |
|                   | B) torque 2,5 Nm                                                    |                 | N/A        |
|                   | C) bracket arm; bending moment (Nm)..... :                          |                 | N/A        |
|                   | D) load track-mounted luminaires                                    |                 | N/A        |
|                   | E) clip-mounted luminaires, glass-shelve. Thickness (mm) .....      |                 | —          |
|                   | Metal rod. diameter (mm) .....                                      |                 | N/A        |
|                   | Fixed luminaire or independent control gear without fixing devices  |                 | N/A        |
| 4.7 (4.14.2)      | Load to flexible cables                                             |                 | N/A        |
|                   | Mass (kg) .....                                                     |                 | —          |
|                   | Stress in conductors (N/mm <sup>2</sup> ) .....                     |                 | N/A        |
|                   | Mass (kg) of semi-luminaire .....                                   |                 | —          |
|                   | Bending moment (Nm) of semi-luminaire .....                         |                 | N/A        |
| 4.7 (4.14.3)      | Adjusting devices:                                                  |                 | N/A        |



| EN 60598-2-4      |                                                                    |                              |            |
|-------------------|--------------------------------------------------------------------|------------------------------|------------|
| Clause            | Requirement + Test                                                 | Result - Remark              | Verdict    |
|                   | - flexing test; number of cycles.....:                             |                              | N/A        |
|                   | - strands broken.....:                                             |                              | —          |
|                   | - electric strength test afterwards                                |                              | N/A        |
| 4.7 (4.14.4)      | Telescopic tubes: cords not fixed to tube; no strain on conductors |                              | N/A        |
| 4.7 (4.14.5)      | Guide pulleys                                                      |                              | N/A        |
| 4.7 (4.14.6)      | Strain on socket-outlets                                           |                              | N/A        |
| <b>4.7 (4.15)</b> | <b>Flammable materials</b>                                         |                              | <b>P</b>   |
|                   | - glow-wire test 650°C.....:                                       | See Test Table 4.15 (13.3.2) | P          |
|                   | - spacing $\geq 30$ mm                                             |                              | P          |
|                   | - screen withstanding test of 13.3.1                               |                              | N/A        |
|                   | - screen dimensions.....:                                          |                              | —          |
|                   | - no fiercely burning material                                     |                              | P          |
|                   | - thermal protection                                               |                              | N/A        |
|                   | - electronic circuits exempted                                     |                              | N/A        |
| 4.7 (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>4.7 (4.16)</b> | <b>Luminaires for mounting on normally flammable surfaces</b>      |                              | <b>P</b>   |
|                   | No lamp control gear.....:                                         | (compliance with Section 12) | P          |
| 4.7 (4.16.1)      | Lamp control gear spacing:                                         |                              | N/A        |
|                   | - spacing 35 mm                                                    |                              | N/A        |
|                   | - spacing 10 mm                                                    |                              | N/A        |
| 4.7 (4.16.2)      | Thermal protection:                                                |                              | N/A        |
|                   | - in lamp control gear                                             |                              | N/A        |
|                   | - external                                                         |                              | N/A        |
|                   | - fixed position                                                   |                              | N/A        |
|                   | - temperature marked lamp control gear                             |                              | N/A        |
| 4.7 (4.16.3)      | Design to satisfy the test of 12.6.....:                           | (see clause 12.6)            | N/A        |
| <b>4.7 (4.17)</b> | <b>Drain holes</b>                                                 |                              | <b>N/A</b> |
|                   | Clearance at least 5 mm                                            |                              | N/A        |
| <b>4.7 (4.18)</b> | <b>Resistance to corrosion</b>                                     |                              | <b>P</b>   |



| EN 60598-2-4      |                                                                                                                                                    |                              |          |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------|
| Clause            | Requirement + Test                                                                                                                                 | Result - Remark              | Verdict  |
| 4.7 (4.18.1)      | - rust-resistance                                                                                                                                  |                              | P        |
| 4.7 (4.18.2)      | - season cracking in copper                                                                                                                        |                              | P        |
| 4.7 (4.18.3)      | - corrosion of aluminium                                                                                                                           |                              | P        |
| 4.7 (4.19)        | Ignitors compatible with ballast                                                                                                                   |                              | N/A      |
| 4.7 (4.20)        | Rough service vibration                                                                                                                            |                              | N/A      |
| <b>4.7 (4.21)</b> | <b>Protective shield</b>                                                                                                                           |                              | N/A      |
| 4.7 (4.21.1)      | Shield fitted if tungsten halogen lamps or metal halide lamps                                                                                      |                              | N/A      |
|                   | Shield of glass if tungsten halogen lamps                                                                                                          |                              | N/A      |
| 4.7 (4.21.2)      | Particles from a shattering lamp not impair safety                                                                                                 |                              | N/A      |
| 4.7 (4.21.3)      | No direct path                                                                                                                                     |                              | N/A      |
| 4.7 (4.21.4)      | Impact test on shield                                                                                                                              |                              | N/A      |
|                   | Glow-wire test on lamp compartment.....:                                                                                                           | See Test Table 4.15 (13.3.2) | N/A      |
| 4.7 (4.22)        | Attachments to lamps not cause overheating or damage                                                                                               |                              | N/A      |
| 4.7 (4.23)        | Semi-luminaires comply Class II                                                                                                                    |                              | N/A      |
| <b>4.7 (4.24)</b> | <b>Photobiological hazards</b>                                                                                                                     |                              | <b>P</b> |
| 4.7 (4.24.1)      | No excessive UV radiation if tungsten halogen lamps and metal halide lamps (Annex P)                                                               |                              | N/A      |
| 4.7 (4.24.2)      | Retinal blue light hazard                                                                                                                          |                              | P        |
|                   | Class of risk group assessed according to IEC/TR 62778 .....                                                                                       |                              | —        |
|                   | Luminaires with $E_{thr}$ :                                                                                                                        |                              | P        |
|                   | a) Fixed luminaires                                                                                                                                |                              | P        |
|                   | - distance x m, borderline between RG1 and RG2... :                                                                                                | RG1                          | P        |
|                   | - 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      |
| <b>4.7 (4.25)</b> | <b>Mechanical hazard</b>                                                                                                                           |                              | <b>P</b> |
|                   | No sharp point or edges                                                                                                                            |                              | P        |
| <b>4.7 (4.26)</b> | <b>Short-circuit protection</b>                                                                                                                    |                              | N/A      |



| EN 60598-2-4      |                                                                                                                      |                 |         |
|-------------------|----------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause            | Requirement + Test                                                                                                   | Result - Remark | Verdict |
| 4.7 (4.26.1)      | Adequate means of uninsulated accessible SELV parts                                                                  |                 | N/A     |
| 4.7 (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>4.7 (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>4.7 (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 ( $^{\circ}\text{C}$ ) ..... :                                                 |                 | —       |
|                   | 100 cycles between t min and t max                                                                                   |                 | N/A     |
|                   | Temperature sensing control still in position                                                                        |                 | N/A     |
| <b>4.7 (4.29)</b> | <b>Luminaires with non-replaceable light source</b>                                                                  |                 | P       |
|                   | Not possible to replace light source                                                                                 |                 | P       |
|                   | Live part not accessible after parts have been opened by hand or tools                                               |                 | N/A     |
| <b>4.7 (4.30)</b> | <b>Luminaires with non-user replaceable light source</b>                                                             |                 | N/A     |
|                   | If protective cover provide protection against electric shock and marked with “caution, electric shock risk” symbol: |                 | N/A     |
|                   | Minimum two fixing means                                                                                             |                 | N/A     |
| <b>4.7 (4.31)</b> | <b>Insulation between circuits</b>                                                                                   |                 | P       |
|                   | Circuits insulated from LV supply fulfil requirements according 4.31.1 – 4.31.3                                      |                 | P       |



| EN 60598-2-4 |                                                                                                                                                                                     |                 |         |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause       | Requirement + Test                                                                                                                                                                  | Result - Remark | Verdict |
|              | Controllable luminaires requiring same level of insulation for all components, the insulation between control terminals and LV supply fulfil requirements according 4.31.1 – 4.31.3 |                 | N/A     |
| 4.7 (4.31.1) | SELV 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                                                                                                                   |                 | 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     |
|              | Plugs and socket-outlets does not have protective conductor contact                                                                                                                 |                 | N/A     |
| 4.7 (4.31.2) | FELV circuits                                                                                                                                                                       |                 | N/A     |
|              | Used FELV source                                                                                                                                                                    |                 | N/A     |
|              | Voltage $\leq$ 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     |
| 4.7 (4.31.3) | Other circuits                                                                                                                                                                      |                 | N/A     |
|              | Other circuits insulated from accessible parts according Table X.1                                                                                                                  |                 | N/A     |
|              | Class II construction with equipotential bonding for protection against indirect contacts with live parts:                                                                          |                 | N/A     |
|              | - conductive parts are connected together                                                                                                                                           |                 | N/A     |



| EN 60598-2-4      |                                                                                               |                 |         |
|-------------------|-----------------------------------------------------------------------------------------------|-----------------|---------|
| Clause            | Requirement + Test                                                                            | Result - Remark | Verdict |
|                   | - 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>4.7 (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     |
| 4.7.1 (-)         | Insulation not damaged when placing on support                                                |                 | N/A     |
| 4.7.2 (-)         | Wiring fixed, to avoid rubbing                                                                |                 | N/A     |
| 4.7.3 (-)         | Luminaire not overturn at angle 6°                                                            |                 | N/A     |
|                   | Outdoor use luminaire not overturn at an angle 15°                                            |                 | N/A     |
| 4.7.4 (-)         | Candlestick luminaires with E5 or E10 lampholders provided with a switch                      |                 | N/A     |
|                   | Switch part of the luminaire or within 300 mm of the luminaire if with cord                   |                 | N/A     |
| 4.7.5 (-)         | Voltage not exceed 25 V for E5 lampholders                                                    |                 | N/A     |
|                   | E10 lampholder voltage not exceed as noted                                                    |                 | —       |
|                   | 60 V for series connection) or                                                                |                 | N/A     |
|                   | 250 V for parallel connections                                                                |                 | N/A     |
|                   | Maximum rated wattage not exceed 100 W                                                        |                 | N/A     |
| 4.7.6 (-)         | Portable luminaires for outdoor use tails not provided                                        |                 | N/A     |
| 4.7.7 (-)         | Portable luminaires for outdoor use, cable entries                                            |                 | N/A     |
| 4.7.8 (-)         | Portable luminaires for outdoor use, socket-outlet degree of protection at least IPX4.        |                 | N/A     |
|                   | Degree of protection maintained with or without a plug inserted into the socket-outlet.       |                 | N/A     |
|                   | Class II luminaires, mains socket-outlets, connection only to Class II luminaires.            |                 | N/A     |





| EN 60598-2-4        |                                                                                                           |                                                                                       |            |
|---------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------|
| Clause              | Requirement + Test                                                                                        | Result - Remark                                                                       | Verdict    |
|                     | Class I luminaires, mains socket-outlets, connection only to Class I luminaires.                          |                                                                                       | N/A        |
| 4.7.9 (-)           | Portable luminaires for outdoor use, lampholders and plugs are of material resistant to tracking          |                                                                                       | N/A        |
|                     | Compliance to clause 13.4                                                                                 |                                                                                       | N/A        |
| <b>4.8 (11)</b>     | <b>CREEPAGE DISTANCES AND CLEARANCES</b>                                                                  |                                                                                       | <b>N/A</b> |
|                     | Impulse withstand category (Normal category II) (Category III Annex U, Table U.1)..... :                  | Category II <input checked="" type="checkbox"/> Category III <input type="checkbox"/> | —          |
| 4.8 (11.2.1)        | 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                                                           | N/A        |
|                     | Creepage distances for frequency over 30 kHz:                                                             |                                                                                       | N/A        |
|                     | - Controlgear marked with $\hat{U}_{OUT}$ and $f_{OUT}$ 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                                                           | N/A        |
|                     | 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        |
| <b>4.9 (7)</b>      | <b>PROVISION FOR EARTHING</b>                                                                             |                                                                                       | <b>N/A</b> |
| 4.9 (7.2.1 + 7.2.3) | Accessible metal parts                                                                                    |                                                                                       | N/A        |
|                     | Metal parts in contact with supporting surface                                                            |                                                                                       | N/A        |
|                     | Resistance < 0,5 $\Omega$ ..... :                                                                         |                                                                                       | N/A        |
|                     | Self-tapping screws used                                                                                  |                                                                                       | N/A        |
|                     | Thread-forming screws                                                                                     |                                                                                       | N/A        |
|                     | Thread-forming screw used in a grove                                                                      |                                                                                       | N/A        |
|                     | Earth makes contact first                                                                                 |                                                                                       | N/A        |
|                     | Terminal blocks with integrated screwless earthing contacts tested according Annex V                      |                                                                                       | N/A        |
|                     | Protective earthing of the luminaire not via built-in control gear                                        |                                                                                       | N/A        |



| EN 60598-2-4        |                                                                                                                                                   |                      |          |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------|
| Clause              | Requirement + Test                                                                                                                                | Result - Remark      | Verdict  |
| 4.8 (7.2.2 + 7.2.3) | Earth continuity in joints, etc.                                                                                                                  |                      | N/A      |
| 4.9 (7.2.4)         | Locking of clamping means                                                                                                                         |                      | N/A      |
|                     | Compliance with 4.7.3                                                                                                                             |                      | N/A      |
|                     | Terminal blocks with integrated screwless earthing contacts tested according Annex V                                                              |                      | N/A      |
| 4.9 (7.2.5)         | Earth terminal integral part of connector socket                                                                                                  |                      | N/A      |
| 4.9 (7.2.6)         | Earth terminal adjacent to mains terminals                                                                                                        |                      | N/A      |
| 4.9 (7.2.7)         | Electrolytic corrosion of the earth terminal                                                                                                      |                      | N/A      |
| 4.9 (7.2.8)         | Material of earth terminal                                                                                                                        |                      | N/A      |
|                     | Contact surface bare metal                                                                                                                        |                      | N/A      |
| 4.9 (7.2.10)        | Class II luminaire for looping-in                                                                                                                 |                      | N/A      |
|                     | Double or reinforced insulation to functional earth                                                                                               |                      | N/A      |
| 4.9 (7.2.11)        | Earthing core coloured green-yellow                                                                                                               |                      | N/A      |
|                     | Length of earth conductor                                                                                                                         |                      | N/A      |
| <b>4.10 (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      |
| <b>4.10 (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>4.11 (5)</b>     | <b>EXTERNAL AND INTERNAL WIRING</b>                                                                                                               |                      | P        |
| <b>4.11 (5.2)</b>   | <b>Supply connection and external wiring</b>                                                                                                      |                      | <b>P</b> |
| 4.11 (5.2.1)        | Means of connection.....:                                                                                                                         | AC/DC adapter supply | 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      |
| 4.11 (5.2.2)        | Type of cable.....:                                                                                                                               |                      | N/A      |
|                     | Nominal cross-sectional area (mm <sup>2</sup> ).....:                                                                                             |                      | —        |
|                     | Cables equal to IEC 60227 or IEC 60245                                                                                                            |                      | N/A      |
| 4.11 (5.2.3)        | Type of attachment, X, Y or Z.....:                                                                                                               |                      | N/A      |
| 4.11 (5.2.5)        | Type Z not connected to screws                                                                                                                    |                      | N/A      |
| 4.11 (5.2.6)        | Cable entries:                                                                                                                                    |                      | N/A      |
|                     | - suitable for introduction                                                                                                                       |                      | N/A      |



| EN 60598-2-4    |                                                          |                 |         |
|-----------------|----------------------------------------------------------|-----------------|---------|
| Clause          | Requirement + Test                                       | Result - Remark | Verdict |
|                 | - adequate degree of protection                          |                 | N/A     |
| 4.11 (5.2.7)    | Cable entries through rigid material have rounded edges  |                 | N/A     |
| 4.11 (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     |
| 4.11 (5.2.9)    | Locking of screwed bushings                              |                 | N/A     |
| 4.11 (5.2.10)   | Cord anchorage:                                          |                 | N/A     |
|                 | - covering protected from abrasion                       |                 | N/A     |
|                 | - clear how to be effective                              |                 | N/A     |
|                 | - no mechanical or thermal stress                        |                 | N/A     |
|                 | - no tying of cables into knots etc.                     |                 | N/A     |
|                 | - insulating material or lining                          |                 | N/A     |
| 4.11 (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     |
| 4.11 (5.2.10.2) | Adequate cord anchorage for type Y and type Z attachment |                 | N/A     |
| 4.11 (5.2.10.3) | Tests:                                                   |                 | N/A     |
|                 | - impossible to push cable; unsafe                       |                 | N/A     |
|                 | - pull test: 25 times; pull (N).....:                    |                 | N/A     |
|                 | - torque test: torque (Nm).....:                         |                 | N/A     |
|                 | - displacement $\leq 2$ mm                               |                 | N/A     |



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|-------------------|--------------------------------------------------------------------|-----------------|----------|
| Clause            | Requirement + Test                                                 | Result - Remark | Verdict  |
|                   | - no movement of conductors                                        |                 | N/A      |
|                   | - no damage of cable or cord                                       |                 | N/A      |
|                   | - function independent of electrical connection                    |                 | N/A      |
| 4.11 (5.2.11)     | External wiring passing into luminaire                             |                 | N/A      |
| 4.11 (5.2.12)     | Looping-in terminals                                               |                 | N/A      |
| 4.11 (5.2.13)     | Wire ends not tinned                                               |                 | N/A      |
|                   | Wire ends tinned: no cold flow                                     |                 | N/A      |
| 4.11 (5.2.14)     | Mains plug same protection                                         |                 | N/A      |
|                   | Class III luminaire plug                                           |                 | N/A      |
|                   | No unsafe compatibility                                            |                 | N/A      |
| 4.11 (5.2.16)     | Appliance inlets (IEC 60320)                                       |                 | N/A      |
|                   | Installation couplers (IEC 61535)                                  |                 | N/A      |
|                   | Other appliance inlet or connector according relevant IEC standard |                 | N/A      |
| 4.11 (5.2.17)     | No standardized interconnecting cables properly assembled          |                 | N/A      |
| 4.11 (5.2.18)     | Used plug in accordance with                                       |                 | N/A      |
|                   | - IEC 60083                                                        |                 | N/A      |
|                   | - other standard                                                   |                 | N/A      |
| <b>4.11 (5.3)</b> | <b>Internal wiring</b>                                             |                 | <b>P</b> |
| 4.11 (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                                        |                 | N/A      |
| 4.11 (5.3.1.1)    | Internal wiring connected directly to fixed wiring                 |                 | P        |
|                   | Cross-sectional area (mm <sup>2</sup> )..... :                     |                 | —        |
|                   | Insulation thickness                                               |                 | P        |
|                   | Extra insulation added where necessary                             |                 | P        |



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|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------|
| Clause            | Requirement + Test                                                                                                                                 | Result - Remark | Verdict    |
| 4.11<br>(5.3.1.2) | Internal wiring connected to fixed wiring via internal current-limiting device                                                                     |                 | N/A        |
|                   | Cross-sectional area (mm <sup>2</sup> )..... :                                                                                                     |                 | N/A        |
| 4.11<br>(5.3.1.3) | Double or reinforced insulation for class II                                                                                                       |                 | N/A        |
| 4.11<br>(5.3.1.4) | Conductors without insulation                                                                                                                      |                 | N/A        |
| 4.11<br>(5.3.1.5) | SELV current-carrying parts                                                                                                                        |                 | P          |
| 4.11<br>(5.3.1.6) | Insulation thickness other than PVC or rubber                                                                                                      |                 | P          |
| 4.11 (5.3.2)      | Sharp edges etc.                                                                                                                                   |                 | P          |
|                   | No moving parts of switches etc.                                                                                                                   |                 | N/A        |
|                   | Joints, raising/lowering devices                                                                                                                   |                 | P          |
|                   | Telescopic tubes etc.                                                                                                                              |                 | N/A        |
|                   | No twisting over 360°                                                                                                                              |                 | P          |
| 4.11 (5.3.3)      | Insulating bushings:                                                                                                                               |                 | P          |
|                   | - suitable fixed                                                                                                                                   |                 | P          |
|                   | - material in bushings                                                                                                                             |                 | P          |
|                   | - material not likely to deteriorate                                                                                                               |                 | P          |
|                   | - cables with protective sheath                                                                                                                    |                 | N/A        |
| 4.11 (5.3.4)      | Joints and junctions effectively insulated                                                                                                         |                 | P          |
| 4.11 (5.3.5)      | Strain on internal wiring                                                                                                                          |                 | P          |
| 4.11 (5.3.6)      | Wire carriers                                                                                                                                      |                 | N/A        |
| 4.11 (5.3.7)      | Wire ends not tinned                                                                                                                               |                 | N/A        |
|                   | Wire ends tinned: no cold flow                                                                                                                     |                 | P          |
| <b>4.11 (5.4)</b> | <b>Test to determine suitability of conductors having a reduced cross-sectional area</b>                                                           |                 | <b>N/A</b> |
|                   | 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        |
| 4.11.1 (-)        | Indoor use luminaire<br>The requirement of one part of cord anchorage to be fixed to the luminaire not applied for Star lights of glass or ceramic |                 | —          |



| EN 60598-2-4    |                                                                                                                                                                |                 |         |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause          | Requirement + Test                                                                                                                                             | Result - Remark | Verdict |
| 4.11.2 (-)      | Class I and class II indoor use<br>Luminaire with a mass less than 1 kg the current $\leq 2,5$ A and cable $\leq 2$ m and conductor $\geq 0,5$ mm <sup>2</sup> |                 | N/A     |
| 4.11.3 (-)      | Portable luminaire for outdoor use delivered without a flexible cable or cord and a plug                                                                       |                 | N/A     |
|                 | Terminals, a cord anchorage and an inlet opening for the proper connection of the flexible cable or cord.                                                      |                 | N/A     |
| 4.11.4 (-)      | Portable luminaires for outdoor use<br>Insulation class I and class II, non-detachable flexible cables or cords at least type 245 IEC 57.                      |                 | N/A     |
| <b>4.12 (8)</b> | <b>PROTECTION AGAINST ELECTRIC SHOCK</b>                                                                                                                       |                 | P       |
| 4.12 (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                                                 |                 | P       |
|                 | Basic insulated parts not accessible with $\varnothing 50$ mm probe from outside, other types of luminaires                                                    |                 | N/A     |
|                 | Lamp and starter holders 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     |
|                 | 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     |
| 4.12 (8.2.2)    | Portable luminaire adjusted in most unfavourable position                                                                                                      |                 | P       |
| 4.12 (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     |



| EN 60598-2-4       |                                                                                                                           |                 |          |
|--------------------|---------------------------------------------------------------------------------------------------------------------------|-----------------|----------|
| Clause             | Requirement + Test                                                                                                        | Result - Remark | Verdict  |
|                    | - glass protective shields not used as supplementary insulation                                                           |                 | N/A      |
| 4.12 (8.2.3.b)     | BC lampholder of metal in class I luminaires is earthed                                                                   |                 | N/A      |
| 4.12 (8.2.3.c)     | SELV circuits with exposed current carrying parts:                                                                        |                 | P        |
|                    | Ordinary luminaire:                                                                                                       |                 | P        |
|                    | - voltage under load (V).....: 18Vdc                                                                                      |                 | P        |
|                    | - no-load voltage (V).....:                                                                                               |                 | P        |
|                    | - 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      |
| 4.12 (8.2.4)       | Portable luminaire have protection independent of supporting surface                                                      |                 | P        |
| 4.12 (8.2.5)       | Compliance with the standard test finger or relevant probe                                                                |                 | P        |
| 4.12 (8.2.6)       | Covers reliably secured                                                                                                   |                 | P        |
| 4.12 (8.2.7)       | Luminaire other than below with capacitor > 0,5 $\mu$ F not exceed 50 V 1 min after disconnection                         |                 | N/A      |
|                    | Portable luminaire with capacitor > 0,1 $\mu$ F (0.25) not exceed 34 V 1 s after disconnection                            |                 | N/A      |
|                    | 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      |
| 4.12.1 (-)         | Class I luminaire with bayonet lampholder:                                                                                |                 | N/A      |
|                    | 1) cap not accessible with test finger                                                                                    |                 | N/A      |
|                    | 2) metal lampholder is earthed                                                                                            |                 | N/A      |
| <b>4.13 (12)</b>   | <b>ENDURANCE TEST AND THERMAL TEST</b>                                                                                    |                 | <b>P</b> |
| 4.13 (-)           | If IP > IP 20 relevant test of (12.4), (12.5), (12.6) and (12.7) after (9.2) before (9.3) specified in 4.13               |                 | —        |
| <b>4.13 (12.2)</b> | <b>Selection of lamps and ballasts</b>                                                                                    |                 | <b>—</b> |



| EN 60598-2-4  |                                                                                  |                                  |         |
|---------------|----------------------------------------------------------------------------------|----------------------------------|---------|
| Clause        | Requirement + Test                                                               | Result - Remark                  | Verdict |
|               | Lamp used according Annex B..... :                                               | See Annex 2 for lamp used        | —       |
|               | Controlgear if separate and not supplied..... :                                  | See Annex 2 for controlgear used | —       |
| 4.13 (12.3)   | Endurance test:                                                                  |                                  | P       |
|               | a) mounting-position..... :                                                      | Normal mounting                  | —       |
|               | b) test temperature (°C)..... :                                                  | 35°C                             | —       |
|               | c) total duration (h)..... :                                                     | --                               | —       |
|               | d) if not equipped with controlgear, constant voltage/current (V) or (A) ..... : | 1.1X18V=19.8V                    | —       |
|               | e) luminaire ceases to operate                                                   |                                  | —       |
| 4.13 (12.3.2) | After endurance test:                                                            |                                  | P       |
|               | - no part unserviceable                                                          |                                  | P       |
|               | - luminaire not unsafe                                                           |                                  | P       |
|               | - no damage to track system                                                      |                                  | N/A     |
|               | - marking legible                                                                |                                  | P       |
|               | - no cracks, deformation etc.                                                    |                                  | P       |
| 4.13 (12.4)   | Thermal test (normal operation)..... :                                           | (see Annex 2)                    | P       |
| 4.13 (12.5)   | Thermal test (abnormal operation)..... :                                         | (see Annex 2)                    | N/A     |
| 4.13 (12.6)   | Thermal test (failed lamp control gear condition):                               |                                  | N/A     |
| 4.13 (12.6.1) | Through wiring or looping-in wiring loaded by a current of (A) ..... :           |                                  | —       |
|               | - case of abnormal conditions..... :                                             |                                  | —       |
|               | - electronic lamp control gear                                                   |                                  | N/A     |
|               | - measured winding temperature (°C): at 1,1 Un ..... :                           |                                  | —       |
|               | - measured mounting surface temperature (°C) at 1,1 Un..... :                    |                                  | N/A     |
|               | - calculated mounting surface temperature (°C) ..... :                           |                                  | N/A     |
|               | - track-mounted luminaires                                                       |                                  | N/A     |
| 4.13 (12.6.2) | Temperature sensing control                                                      |                                  | N/A     |
|               | - case of abnormal conditions..... :                                             |                                  | —       |
|               | - thermal link                                                                   |                                  | N/A     |
|               | - manual reset cut-out                                                           |                                  | N/A     |





| EN 60598-2-4       |                                                                            |                         |         |
|--------------------|----------------------------------------------------------------------------|-------------------------|---------|
| Clause             | Requirement + Test                                                         | Result - Remark         | Verdict |
|                    | - auto reset cut-out                                                       |                         | N/A     |
|                    | - measured mounting surface temperature (°C).....:                         |                         | N/A     |
|                    | - track-mounted luminaires                                                 |                         | N/A     |
| <b>4.13 (12.7)</b> | <b>Thermal test (failed lamp control gear in plastic luminaires):</b>      |                         | N/A     |
| 4.13 (12.7.1)      | Luminaire without temperature sensing control                              |                         | N/A     |
| 4.13 (12.7.1.1)    | Luminaire with fluorescent lamp ≤ 70W                                      |                         | N/A     |
|                    | Test method 12.7.1.1 or Annex W .....                                      |                         | —       |
|                    | Test according to 12.7.1.1:                                                |                         | N/A     |
|                    | - case of abnormal conditions.....:                                        |                         | —       |
|                    | - Ballast failure at supply voltage (V) .....                              |                         | —       |
|                    | - Components retained in place after the test                              |                         | N/A     |
|                    | - Test with standard test finger after the test                            |                         | N/A     |
|                    | Test according to Annex W:                                                 |                         | N/A     |
|                    | - case of abnormal conditions.....:                                        |                         | —       |
|                    | - measured winding temperature (°C): at 1,1 Un.....:                       |                         | —       |
|                    | - measured temperature of fixing point/exposed part (°C): at 1,1 Un.....:  |                         | —       |
|                    | - calculated temperature of fixing point/exposed part (°C).....:           |                         | —       |
|                    | Ball-pressure test.....:                                                   | See Table 4.15 (13.2.1) | N/A     |
| 4.13 (12.7.1.2)    | Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA |                         | N/A     |
|                    | - case of abnormal conditions.....:                                        |                         | —       |
|                    | - measured winding temperature (°C): at 1,1 Un.....:                       |                         | —       |
|                    | - measured temperature of fixing point/exposed part (°C): at 1,1 Un.....:  |                         | —       |
|                    | - calculated temperature of fixing point/exposed part (°C).....:           |                         | —       |
|                    | Ball-pressure test.....:                                                   | See Table 4.15 (13.2.1) | N/A     |
| 4.13 (12.7.1.3)    | Luminaire with short circuit proof transformers ≤ 10 VA                    |                         | N/A     |
|                    | - case of abnormal conditions.....:                                        |                         | —       |
|                    | - Components retained in place after the test                              |                         | N/A     |



| EN 60598-2-4     |                                                                                                   |                         |            |
|------------------|---------------------------------------------------------------------------------------------------|-------------------------|------------|
| Clause           | Requirement + Test                                                                                | Result - Remark         | Verdict    |
|                  | - Test with standard test finger after the test                                                   |                         | N/A        |
| 4.13<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/<br>exposed part (°C):.....:                       |                         | —          |
|                  | Ball-pressure test:.....:                                                                         | See Table 4.15 (13.2.1) | N/A        |
| 4.13 (-)         | Indoor use luminaire, Test overturned position<br>(overturns < 15°)                               |                         | N/A        |
| <b>4.14 (9)</b>  | <b>RESISTANCE TO DUST AND MOISTURE</b>                                                            |                         | <b>N/A</b> |
| 4.14 (-)         | If IP > IP 20 the order of tests as specified in clause 4.12                                      |                         | N/A        |
| 4.14 (9.2)       | Tests for ingress of dust, solid objects and moisture:                                            |                         | N/A        |
|                  | - classification according to IP.....: IPX0                                                       |                         | —          |
|                  | - mounting position during test.....: As in normal use                                            |                         | —          |
|                  | - 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<br>insulation where it could become a hazard |                         | N/A        |
|                  | c.1) For luminaires without drain holes – no water<br>entry                                       |                         | N/A        |
|                  | c.2) For luminaires with drain holes – no hazardous<br>water entry                                |                         | N/A        |
|                  | d) no water in watertight or pressure watertight<br>luminaire                                     |                         | N/A        |
|                  | e) no contact with live parts (IP 2X)                                                             |                         | N/A        |
|                  | e) no entry into enclosure (IP 3X and IP 4X)                                                      |                         | N/A        |
|                  | e) no contact with live parts through drain holes and<br>ventilation slots (IP3X and IP4X)        |                         | N/A        |



| EN 60598-2-4     |                                                                                                                                 |                 |         |
|------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause           | Requirement + Test                                                                                                              | Result - Remark | Verdict |
|                  | f) no trace of water on part of lamp requiring protection from splashing water                                                  |                 | N/A     |
|                  | g) no damage of protective shield or glass envelope                                                                             |                 | N/A     |
| 4.14 (9.3)       | Humidity test 48 h                                                                                                              |                 | N/A     |
| 4-14 (-)         | Portable luminaire for outdoor use tested in the most unfavourable of the overturned positions likely to occur                  |                 | N/A     |
| <b>4.15 (10)</b> | <b>INSULATION RESISTANCE AND ELECTRIC STRENGTH</b>                                                                              |                 | P       |
| 4.15 (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).....                                                                                                 | >1MΩ            | —       |
|                  | SELV                                                                                                                            |                 | P       |
|                  | - between current-carrying parts of different polarity :                                                                        | >100MΩ          | P       |
|                  | - between current-carrying parts and mounting surface.....                                                                      |                 | N/A     |
|                  | - between current-carrying parts and metal parts of the luminaire.....                                                          | >100MΩ          | 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                                                                                                                 |                 | N/A     |
|                  | - between live parts of different polarity.....                                                                                 |                 | N/A     |
|                  | - between live parts and mounting surface.....                                                                                  |                 | N/A     |
|                  | - between live parts and metal parts.....                                                                                       |                 | N/A     |
|                  | - between live parts of different polarity through action of a switch.....                                                      |                 | N/A     |
|                  | - between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... |                 | N/A     |
|                  | - Insulation bushings as described in Section 5 .....                                                                           |                 | N/A     |
| 4.15 (10.2.2)    | Electric strength test                                                                                                          |                 | P       |
|                  | Dummy lamp                                                                                                                      |                 | N/A     |
|                  | Luminaires with ignitors after 24 h test                                                                                        |                 | N/A     |
|                  | Luminaires with manual ignitors                                                                                                 |                 | N/A     |



| EN 60598-2-4     |                                                                                                                                   |                              |          |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------|
| Clause           | Requirement + Test                                                                                                                | Result - Remark              | Verdict  |
|                  | Test voltage (V).....:                                                                                                            |                              | P        |
|                  | SELV                                                                                                                              |                              | P        |
|                  | - between current-carrying parts of different polarity :                                                                          | 500V                         | P        |
|                  | - between current-carrying parts and mounting surface.....:                                                                       |                              | N/A      |
|                  | - 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                                                                                                                   |                              | N/A      |
|                  | - between live parts of different polarity..... :                                                                                 |                              | N/A      |
|                  | - between live parts and mounting surface.....:                                                                                   |                              | N/A      |
|                  | - between live parts and metal parts..... :                                                                                       |                              | N/A      |
|                  | - between live parts of different polarity through action of a switch..... :                                                      |                              | N/A      |
|                  | - between the outer surface of a flexible cord or cable where it is clamped in a cord anchorage and accessible metal parts..... : |                              | N/A      |
|                  | - Insulation bushings as described in Section 5 ..... :                                                                           |                              | N/A      |
| 4.15 (10.3)      | Touch current or protective conductor current (mA):                                                                               |                              | N/A      |
| <b>4.16 (13)</b> | <b>RESISTANCE TO HEAT, FIRE AND TRACKING</b>                                                                                      |                              | <b>P</b> |
| 4.16 (13.2.1)    | Ball-pressure test..... :                                                                                                         | See Test Table 4.15 (13.2.1) | P        |
| 4.16 (13.3.1)    | Needle-flame test (10 s).....:                                                                                                    | See Test Table 4.15 (13.3.1) | P        |
| 4.16 (13.3.2)    | Glow- wire test (650°C).....:                                                                                                     | See Test Table 4.15 (13.3.2) | P        |
| 4.16 (13.4)      | Proof tracking test (IEC 60112).....:                                                                                             | See Test Table 4.15 (13.4)   | N/A      |



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

|                                                   |                                                                  |                    |           |        |                                                               |          |        |     |
|---------------------------------------------------|------------------------------------------------------------------|--------------------|-----------|--------|---------------------------------------------------------------|----------|--------|-----|
| 4.7 (11.2)                                        | TABLE I: Creepage distances and clearances                       |                    |           |        |                                                               |          |        | N/A |
|                                                   | Minimum distances (mm) for a.c. up to 30 kHz sinusoidal voltages |                    |           |        |                                                               |          |        | --  |
|                                                   | Applicable part of IEC 60598-1 Table 11.1.A*, 11.1.B* and 11.2*  |                    |           |        |                                                               |          |        | --  |
|                                                   | Insulation type **                                               | Measured clearance | Required  |        | Measured creepage                                             | Required |        |     |
|                                                   |                                                                  |                    | clearance | *Table |                                                               | creepage | *Table |     |
| Distance 1:                                       | --                                                               | --                 | --        | --     | --                                                            | --       | --     |     |
| Working voltage (V)..... :                        |                                                                  |                    |           |        | --                                                            |          | —      |     |
| PTI..... :                                        |                                                                  |                    |           |        | < 600 <input type="checkbox"/> ≥ 600 <input type="checkbox"/> |          | —      |     |
| Pulse voltage or $U_P$ if applicable (kV) ..... : |                                                                  |                    |           |        | --                                                            |          | —      |     |
| Supplementary information:                        |                                                                  |                    |           |        |                                                               |          |        |     |
| Distance 2:                                       | --                                                               | --                 | --        | --     | --                                                            | --       | --     |     |
| Working voltage (V)..... :                        |                                                                  |                    |           |        | --                                                            |          | —      |     |
| PTI..... :                                        |                                                                  |                    |           |        | < 600 <input type="checkbox"/> ≥ 600 <input type="checkbox"/> |          | —      |     |
| Pulse voltage or $U_P$ if applicable (kV) ..... : |                                                                  |                    |           |        | --                                                            |          | —      |     |
| Supplementary information:                        |                                                                  |                    |           |        |                                                               |          |        |     |
| Distance 3:                                       | --                                                               | --                 | --        | --     | --                                                            | --       | --     |     |
| Working voltage (V)..... :                        |                                                                  |                    |           |        | --                                                            |          | —      |     |
| PTI..... :                                        |                                                                  |                    |           |        | < 600 <input type="checkbox"/> ≥ 600 <input type="checkbox"/> |          | —      |     |
| Pulse voltage or $U_P$ if applicable (kV) ..... : |                                                                  |                    |           |        | --                                                            |          | —      |     |
| Supplementary information:                        |                                                                  |                    |           |        |                                                               |          |        |     |

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

| <b>4.7 (11.2)</b>                    | <b>TABLE II: Creepage distances and clearances</b>                                |                    |           |        |                                |                                | <b>N/A</b> |
|--------------------------------------|-----------------------------------------------------------------------------------|--------------------|-----------|--------|--------------------------------|--------------------------------|------------|
|                                      | <b>Minimum distances (mm) for a.c. higher than 30 kHz sinusoidal voltages</b>     |                    |           |        |                                |                                |            |
|                                      | <b>Applicable part of IEC 61347-1 Table 7 and 8* or IEC 60664-4 Table 1 and 2</b> |                    |           |        |                                |                                |            |
| Distances                            | Insulation type **                                                                | Measured clearance | Required  |        | Measured creepage              | Required                       |            |
|                                      |                                                                                   |                    | clearance | *Table |                                | creepage                       | *Table     |
| Distance 1:                          | --                                                                                | --                 | --        | --     | --                             | --                             | --         |
| Working voltage (V)..... :           |                                                                                   |                    |           |        | --                             | ---                            |            |
| Frequency if applicable (kHz)..... : |                                                                                   |                    |           |        | --                             | ---                            |            |
| PTI..... :                           |                                                                                   |                    |           |        | < 600 <input type="checkbox"/> | ≥ 600 <input type="checkbox"/> | ---        |



| EN 60598-2-4                                                                 |    |                    |    |    |    |                                                               |    |         |
|------------------------------------------------------------------------------|----|--------------------|----|----|----|---------------------------------------------------------------|----|---------|
| Clause                                                                       |    | Requirement + Test |    |    |    | Result - Remark                                               |    | Verdict |
| 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.

|                                         |                                             |                       |                          |   |
|-----------------------------------------|---------------------------------------------|-----------------------|--------------------------|---|
| 4.15a<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) |   |
| Enclosure plastic                       | --                                          | 75°C                  | 1.30 mm                  |   |
| --                                      | --                                          | --                    | --                       |   |
| Supplementary information:              |                                             |                       |                          |   |

|                               |                                                  |                                                       |                                          |                                    |          |
|-------------------------------|--------------------------------------------------|-------------------------------------------------------|------------------------------------------|------------------------------------|----------|
| <b>4.15b<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  |
| Enclosure plastic             | --                                               | 10                                                    | No                                       | 3.0                                | P        |
| --                            | --                                               | --                                                    | --                                       | --                                 | --       |
| Supplementary information:    |                                                  |                                                       |                                          |                                    |          |



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

| <b>4.15c<br/>(13.3.2)</b>          | <b>TABLE: Glow-wire test (IEC 60695-2-11)</b> |                                    |                              | <b>P</b> |
|------------------------------------|-----------------------------------------------|------------------------------------|------------------------------|----------|
| <b>Glow wire temperature .....</b> |                                               | 650°C                              | —                            |          |
| Object/ Part No./ Material         | Manufacturer/ trademark                       | Ignition of specified layer Yes/No | Duration of burning (tb) (s) | Verdict  |
| Enclosure plastic                  | --                                            | No                                 | 2.5                          | P        |
| --                                 | --                                            | --                                 | --                           | --       |
| Supplementary information:         |                                               |                                    |                              |          |

| <b>4.15d<br/>(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/ trademark                       | Withstand 50 drops without failure on three places or on three specimens |    | Verdict    |
| --                            | --                                            | --                                                                       | -- | --         |
| --                            | --                                            | --                                                                       | -- | --         |
| Supplementary information:    |                                               |                                                                          |    |            |



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

| ANNEX 1                                                                                                                                                                                                                                                                                                                                                                                                                    |      | TABLE: Critical components information |                 |                                                                       |                                  |                                        | P |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------------------|-----------------|-----------------------------------------------------------------------|----------------------------------|----------------------------------------|---|
| Object / part No.                                                                                                                                                                                                                                                                                                                                                                                                          | Code | Manufacturer/<br>trademark             | Type /<br>model | Technical data                                                        | Standard                         | Mark(s) of<br>conformity <sup>1)</sup> |   |
| Internal wire                                                                                                                                                                                                                                                                                                                                                                                                              | --   | --                                     | --              | VW-1,80°C,<br>24AWG,300/500V                                          | UL 758                           | UL                                     |   |
| Enclosure plastic                                                                                                                                                                                                                                                                                                                                                                                                          | --   | --                                     | --              | 94V-0,130°C<br>Thickness:1.0mm                                        | UL 746/UL 94                     | UL                                     |   |
| AC/DC adapter                                                                                                                                                                                                                                                                                                                                                                                                              | --   | --                                     | --              | Input:AC100-250V,<br>47-63Hz<br>Output:18V $\overline{\text{---}}$ 4A | EN 61347-1/<br>EN 61347-2-<br>13 | CE                                     |   |
| Power cord                                                                                                                                                                                                                                                                                                                                                                                                                 | --   | --                                     | SPT-2           | 2*18AWG,<br>(2*0.824mm <sup>2</sup> ),<br>105°C,300V,VW-1             | --                               | UL                                     |   |
| LED module                                                                                                                                                                                                                                                                                                                                                                                                                 | --   | --                                     | --              | --                                                                    | EN 60598-1                       | Tested with the<br>appliance           |   |
| Supplementary information:<br><sup>1)</sup> Provided evidence ensures the agreed level of compliance.<br>The codes above have the following meaning:<br>A - The component is replaceable with another one, also certified, with equivalent characteristics<br>B - The component is replaceable if authorised by the test house<br>C - Integrated component tested together with the appliance<br>D - Alternative component |      |                                        |                 |                                                                       |                                  |                                        |   |



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|--------|--------------------|-----------------|---------|
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| ANNEX 2:                      | Temperature measurements, thermal tests of Section 12                                                         |                   | P      |        |       |                     |       |
|-------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------|--------|--------|-------|---------------------|-------|
|                               | Type reference.....:                                                                                          | PU5064            | —      |        |       |                     |       |
|                               | Lamp used.....:                                                                                               | LED module        | —      |        |       |                     |       |
|                               | Lamp control gear used.....:                                                                                  | Not used          | —      |        |       |                     |       |
|                               | Mounting position of luminaire.....:                                                                          | As in normal use  | —      |        |       |                     |       |
|                               | Supply wattage (W).....:                                                                                      | 72W               | —      |        |       |                     |       |
|                               | Supply current (A)..... :                                                                                     | 4A                | —      |        |       |                     |       |
|                               | Temperatures in test 1 - 4 below are corrected for<br>ta (°C) .....                                           | 25.0°C            | —      |        |       |                     |       |
|                               | - abnormal operating mode.....:                                                                               | —                 | —      |        |       |                     |       |
| 4.12 (12.4)                   | - test 1: rated voltage .....                                                                                 | 18Vdc             | —      |        |       |                     |       |
|                               | - test 2: 1,06 times rated voltage or 1,05 times rated<br>wattage or 1,1 times constant voltage/current ..... | 1,06×18V=19.08V   | —      |        |       |                     |       |
|                               | - test 3: Load on wiring to socket-outlet, 1,06 times<br>voltage or 1,05 times wattage..... :                 | —                 | —      |        |       |                     |       |
|                               | Through wiring or looping-in wiring loaded by a<br>current of A during the test .....                         | —                 | —      |        |       |                     |       |
| 4.12 (12.5)                   | - test 4: 1,1 times rated voltage or 1,05 times rated<br>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 |
| Power cords                   | --                                                                                                            | 36.9              | --     | --     | 50    | --                  | --    |
| AC/DC adapter                 | --                                                                                                            | 42.9              | --     | --     | 80    | --                  | --    |
| Internal wire                 | --                                                                                                            | 40.9              | --     | --     | 80    | --                  | --    |
| LED module                    | --                                                                                                            | 50.4              | --     | --     | Ref.  | --                  | --    |
| Lamp shell                    | --                                                                                                            | 36.9              | --     | --     | 90    | --                  | --    |
| Ambient                       | --                                                                                                            | 25.0              | --     | --     | —     | --                  | --    |
| Supplementary information:    |                                                                                                               |                   |        |        |       |                     |       |

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

|                |                                                       |   |            |
|----------------|-------------------------------------------------------|---|------------|
| <b>ANNEX 3</b> | <b>Screw terminals (part of the luminaire)</b>        |   | <b>N/A</b> |
| <b>(14)</b>    | <b>SCREW TERMINALS</b>                                |   | <b>N/A</b> |
| (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        |

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

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

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

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



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Supplementary information:



## Appendix 1 Equipments List

| Code    | Name                             | Model/Type  | S/N                | Calibrated date | Next Calibration Date | Manufacture         |
|---------|----------------------------------|-------------|--------------------|-----------------|-----------------------|---------------------|
| HTT-001 | Digital Multimeter               | 34401A      | MY47043456         | 2024.02.20      | 2025.02.19            | agilent             |
| HTT-004 | Push/pull gauge                  | NK-500      | 2Q10060932         | 2024.02.20      | 2025.02.19            | --                  |
| HTT-005 | Electronic weight                | DSI-861     | 198692             | 2024.02.20      | 2025.02.19            | shangdeli           |
| HTT-006 | Insulation resistance tester     | CS2676CX    | 1107032-009        | 2024.02.20      | 2025.02.19            | changshen           |
| HTT-007 | Earthing resistance tester       | YD2668-4B   | 4B-2307            | 2024.02.20      | 2025.02.19            | Yangzi              |
| HTT-008 | HI-pot/Insulation tester         | CS2672C     | 1108006-002        | 2024.02.20      | 2025.02.19            | changshen           |
| HTT-010 | AC Voltage Regulator             | TDGC2J      | --                 | 2024.02.20      | 2025.02.19            | SAKO                |
| HTT-013 | AC power source                  | HPA-3110    | 3513               | 2024.02.20      | 2025.02.19            | Henqiang            |
| HTT-014 | Temperature/Humidity chamber     | SDJ-80L     | SDJ-80J            | 2024.02.20      | 2025.02.19            | Shenzhen hongjian   |
| HTT-015 | Electric oven                    | HK45AS      | F11011008          | 2024.02.20      | 2025.02.19            | Guangzhou KENTON    |
| HTT-017 | AC digital power meter           | PF9901      | YG100731N1 1070075 | 2024.02.20      | 2025.02.19            | Yuanfang            |
| HTT-022 | Leakage current tester           | 228         | 10-866030          | 2024.02.20      | 2025.02.19            | simpson             |
| HTT-023 | Oscilloscope                     | TDS1012C-SC | C013300            | 2024.02.20      | 2025.02.19            | tektronix           |
| HTT-024 | Tape measure                     | DK-2041     | --                 | 2024.02.20      | 2025.02.19            | Proskit             |
| HTT-025 | Stop watch                       | TA-228      | --                 | 2024.02.20      | 2025.02.19            | KTJ                 |
| HTT-026 | Data acquisition/switch unit     | 34970A      | MY44057668         | 2024.02.20      | 2025.02.19            | Agilent             |
| HTT-027 | Temperature/humidity meter       | VC230       | --                 | 2024.02.20      | 2025.02.19            | VICTOR              |
| HTT-028 | Torque drive                     | 3RTD        | 435850B            | 2024.02.20      | 2025.02.19            | TOHNICHI            |
| HTT-033 | Test finger                      | ZLT-I02     | I021203            | 2024.02.20      | 2025.02.19            | Guangzhou zhilitong |
| HTT-034 | Test pin                         | ZLT-I09     | I091201            | 2024.02.20      | 2025.02.19            | Guangzhou zhilitong |
| HTT-038 | Test apparatus of the mains plug | ZLT-LJ2     | LJ011202           | 2024.02.20      | 2025.02.19            | Guangzhou zhilitong |
| HTT-039 | Ball pressure apparatus          | ZLT-QY1     | Q011202            | 2024.02.20      | 2025.02.19            | Guangzhou zhilitong |
| HTT-040 | Impact hammer                    | ZLT-CJ1     | LJ011206           | 2024.02.20      | 2025.02.19            | Guangzhou zhilitong |
| HTT-041 | Impact hammer                    | ZLT-CJ1     | LJ011205           | 2024.02.20      | 2025.02.19            | Guangzhou zhilitong |



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|           |                                   |            |            |            |            |                    |
|-----------|-----------------------------------|------------|------------|------------|------------|--------------------|
| HTT-042   | Caliper rule                      | CD-6 " CSX | 500-196-20 | 2024.02.20 | 2025.02.19 | MITUTOYO           |
| HTT-044   | Glow wire tester                  | ZRS-2      | 12121304   | 2024.02.20 | 2025.02.19 | Guangzhou<br>Xinna |
| HTT-045   | Needle flame<br>tester            | ZY-2       | 12121311   | 2024.02.20 | 2025.02.19 | Guangzhou<br>Xinna |
| HTT-107   | "Van der<br>Hoofden" test<br>head | EMF827     | R21SW      | 2024.02.20 | 2025.02.19 | Shenzhen<br>HLKS   |
| HTT-107-a | Measurement<br>receiver           | EMF827-a   | R21SW      | 2024.02.20 | 2025.02.19 | Shenzhen<br>HLKS   |

## Appendix 2:Photo documentation

EUT Photo 1



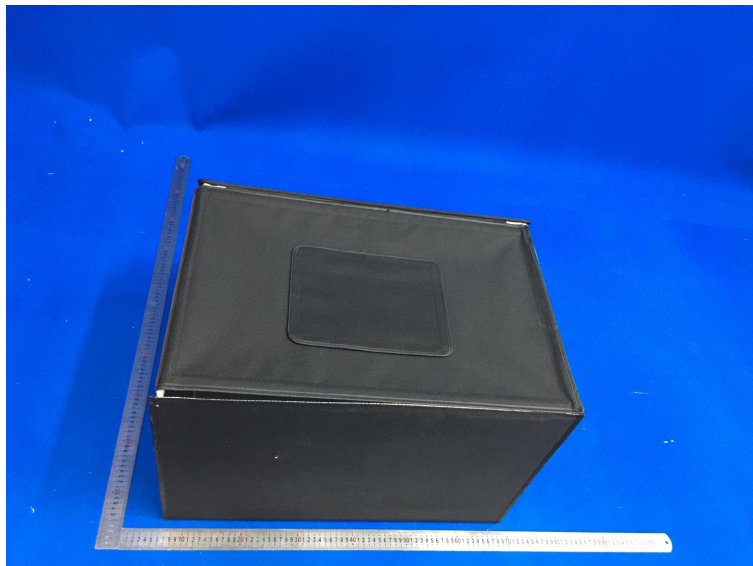
EUT Photo 2



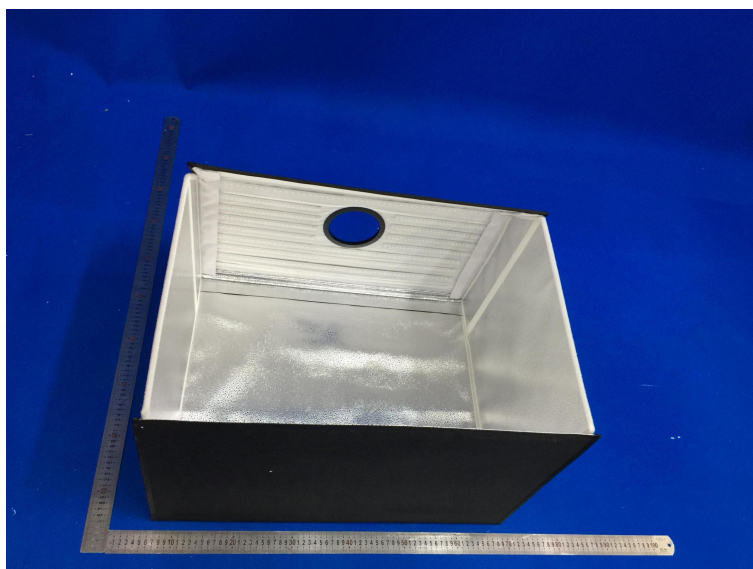




**EUT Photo 3**



**EUT Photo 4**



**EUT Photo 5**



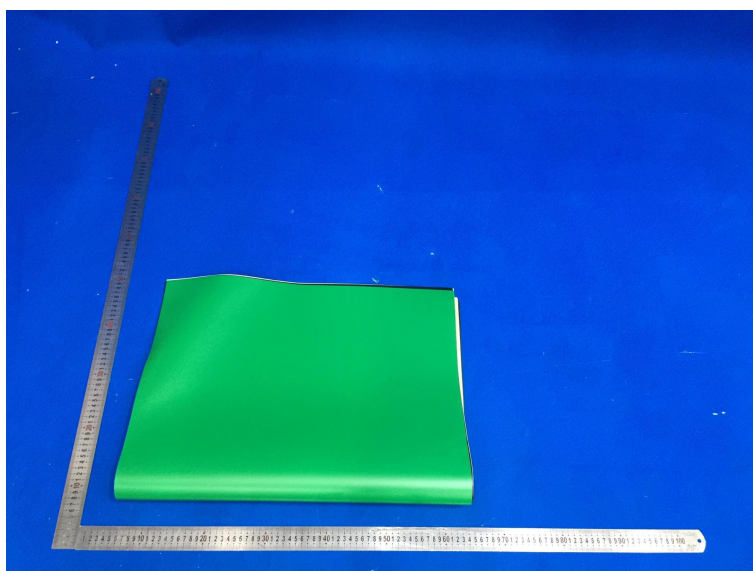
**EUT Photo 6**



EUT Photo 7



EUT Photo 8



===== End of report =====